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Table of Contents

Stick Electrodes

Mild Steel Stick Electrodes

AWS Classifications	2
Pipemaster® Pro-60, Pipemaster® 60, Hobart® 610	3
Pipemaster® 70, Pipemaster® 80, Pipemaster® 90	4
Hobart® 335A, Hobart® 335C, Hobart® 447A	5
Hobart® 447C, Hobart® Deckmaster™ 1139, Hobart® 14A	6
Hobart® Rocket® 7024, Hobart® 24, Hobart® 418	7
Hobart® 718MC, Hobart® 7018XLM, Hobart® Soft-Arc™ 7018-1	8
Hobart® 18AC, Boilermaker™ 18, Hoballoy™ 7018A1	9

Low Alloy Stick Electrodes

Boilermaker™ 18A1, Boilermaker™ B2, Boilermaker™ B3	10
Hoballoy® 8018B2, Hoballoy® 8018B2L, Hoballoy® 8018B6	11
Hoballoy® 8018B8, Hoballoy® 8018C1, Hoballoy® 8018C2	12
Hoballoy® 8018C3, Hoballoy® 9015B91, Hoballoy® 9018B3	13
Hoballoy® 9018B3L, Hoballoy® 9018M, Hoballoy® 10018D2	14
Hoballoy® 10018M, Hoballoy® 11018M, Hoballoy® 12018M	15
Technical Section and Packaging Options	16-19

Steel Solid Wires

AWS Classifications	20
Quantum Arc™ 3, QCL-3, Quantum Arc™ 6	21
QCL-6, HB-28	22
Quantum Arc™ D2, QCL-D2	23
Technical Section and Packaging Options	23-28

Aluminum Wires

AWS Classifications	29
MaxalMig ER1100, MaxalMig ER4043, MaxalMig ER4047	30
MaxalMig ER4943, MaxalMig ER5183, MaxalMig ER5356	31
MaxalMig ER5554, MaxalMig ER5556, MaxalTig R1100	32
MaxalTig R4043, MaxalTig R4047, MaxalTig R4943	33
MaxalTig R5183, MaxalTig R5356, MaxalTig R5554	34
MaxalTig R5556	35
Packaging Specifications and Illustrations	35-36

Tubular Wires

Flux-Cored, Gas-Shielded Carbon Steel

AWS Classifications	37
FabCO® RXR, FabCO® TR-70, FabCO® 70XHP	38
FabCO® Premier 70, FabCO® 72, FabCO® 11	39
FabCO® 85, FabCO® 73, FabCO® Excel-Arc™ 71	40
FabCO® Hornet, FabCO® Triple 7, FabCO® Triple 8	41
FabCO® Element™ 71T1C, FabCO® Element™ 71T1M, FabCO® 711M	42
FabCO® 712M, Formula XL®-550, Formula XL®-550 H4	43
Formula XL®-525, FabCO® 771, FabCO® 910	44
Fabshield® 4, Fabshield® XLNT-6, Fabshield® 7027	45
Fabshield® XLR-8, Fabshield® 21B, Fabshield® 23	46

Flux-Cored, Gas-Shielded Low Alloy

AWS Classifications	47
FabCO® 81N1, FabCO® 811N1, Formula XL®-8Ni1	48
FabCO® 803, FabCO® 911N2, FabCO® 881K2	49
FabCO® 81K2-C, FabCO® 991K2, FabCO® 95K2	50
FabCO® 101K3, FabCO® 115K3, FabCO® 110	51
FabCO® 1101K3-C, FabCO® 110K3-M, FabCO® 115	52
FabCO® 125K4, FabCO® 105D2, FabCO® 811A1	53
FabCO® 811W, FabCO® 811B2, FabCO® XTREME™ B2	54
FabCO® 91B3, FabCO® 911B3, FabCO® XTREME™ B3	55
FabCO® B6, FabCO® B9, FabCO® Element™ 81K2C	56
FabCO® Element™ 81K2M, FabCO® 107G, FabCO® 101	57
FabCO® XTREME™ 120	58
Fabshield® 71T8, Fabshield® 81N1, Fabshield® X80	59
Fabshield® 71K6, Fabshield® Offshore 71Ni, Fabshield® X90	60

Metal-Cored, Gas-Shielded Wires Carbon Steel

AWS Classifications	61
FabCOR® 86R, FabCOR® Edge™, FabCOR® Edge™ MC	62
FabCOR® Matrix™, Eclipse® Ultimet 716, FabCOR® X-Cel™	63
FabCOR® 71, FabCOR® CVN, FabCOR® 702	64
FabCOR® Element™ 70C6, FabCOR® F6, FabCOR® Edge™ Ni1	65
FabCOR® 209, FabCOR® 80N1, FabCOR® 80N2	66
FabCOR® 90, FabCOR® 100, FabCOR® 1100	67
FabCOR® 80D2, FabCOR® Edge™ D2, FabCOR® 80B2	68
FabCOR® 90B3, FabCOR® 4130 SR	69
Technical Section and Packaging Options	70-75

MEGAFIL (Seamless)

MEGAFIL 710M, MEGAFIL 240M, MEGAFIL 940M	76
MEGAFIL 1100M, MEGAFIL 713R	77
MEGAFIL 821R, MEGAFIL 550R	78

Submerged Arc

Fluxes for Carbon & Low-Alloy Steels

SWX 110, SWX 120, SWX 130	79
SWX 135, SWX 140, SWX 150	80
SWX 160, HA-495, HN-511	81
HN-590, SWX 010	82

Carbon Steel Wires

Technical Section	83-84
-------------------------	-------

Solid Wires

SDX S1-EL12, SDX S2Si-EM12K, SDX EM13K	85
SDX S2, SDX S3Si-EH12K, SDX S4-EH14	85

Composite (Cored) Wires

SubCOR™ EM12K-S, SubCOR™ EM13K-S, SubCOR™ EM13K-S MOD	86
SubCOR™ SL 731, SubCOR™ SL 840 HC	86

Low-Alloy Steel Wires**Solid Wires**

Wire/Flux Combination Classification (AWS)	87
Wire/Flux Combination Classification (EN ISO)	88
Low-Alloy Wires Approval Summary.....	89
SDX S2S2Mo-EA2, SDX S3TiB, SDX CrMo1-EB2R	90
SDX S3Mo-EA4, SDX S3MoTiB, SDX CrMo2-EB3R	90
SDX S2Ni1-ENi1, SDX S2Ni1Cu, SDX S3Ni1Mo-EF3,	91
SDX S2Ni2-ENi2, SDX S3Ni1Mo0.2-ENi5, SDX S3Ni2.5CrMo.....	91

Composite (Cored) Wires

SubCOR™ N1-S, SubCOR™ 92-S, SubCOR™100F3-S	92
SubCOR™ W-S, SubCOR™ F2-S, SubCOR™ 4130 SR.....	92
SubCOR™ 120-S, SubCOR™ B3-S, SubCOR™ B2-S.....	93
SubCOR™ SL 281 Cr, SubCOR™ SL 742, SubCOR™ SL P1.....	94
SubCOR™ SL 741, SubCOR™ SL 745, SubCOR™ SL P1 MOD	94
SubCOR™ SL P11, SubCOR™ SL P36, SubCOR™ SL P24.....	95
SubCOR™ SL P12 MOD, SubCOR™ SL P22, SubCOR™ SL P5.....	95
SubCOR™ SL P9, SubCOR™ SL P92, SubCOR™ SL P91	96
SubCOR™ SL 735 1W-5W	96

Fluxes, Wires & Strips for Stainless Steels**Fluxes**

SWX 220.....	96
SWX 305, SWX 330, SWX 340	97

Wires

SDX 308L, SDX 309L, SDX 309LMo,	98
SDX 316L, SDX 317L, SDX 347	98
SDX 410NiMo, SDX 2594, SDX 2209	99

Cladding Strips

Cromastrip 308L, Cromastrip 309LMo, Cromastrip 309LNb	100
Cromastrip 347, Cromastrip 309L, Cromastrip 316L	100
Cromastrip 21.11 L, Cromastrip 21.11 LNb, Cromastrip 21.13.3 L.....	101

Fluxes, Wires & Strips for Nickel-based Alloys

SWX 282, SWX 382, SDX NiCr-3, SDX NiCrMo-3.....	102
Cromastrip NiCr-3, Cromastrip NiCrMo-3	103

Stainless Steel**Stainless Steel Stick Electrodes**

AWS Classification Information	104-105
308/308H Sterling® AP, 308/308H Sterling®	105
308L/308L Sterling® AP, 308L/308L Sterling®, 308L Smootharc™ Plus ...	105
309 (H) Sterling® AP, 309Mo, 309 MoL AC-DC, 312 AC-DC	106
309/309L Sterling® AP, 309/309L Sterling®	106
309L Smootharc™ Plus, 310 AC-DC	106
316/316H Sterling® AP, 316/316H Sterling®	106
316/316L Sterling® AP, 316/316L Sterling®, 316L Smootharc™ Plus ...	107
347 AC-DC, 410NiMo AC-DC, 317L AC-DC, 410 AC-DC, 2209 AC-DC ...	107
Technical Section and Packaging Options	108-110

Stainless Steel Wires

AWS Classification Information	111-112
Fabshield® 308L-O, Fabshield® 309L-O, FabCO® 410NiMoT1	113
ChromaWeld™ 308LT1, ChromaWeld™ 309LT1	114
ChromaWeld™ 316LT1	114
Technical Section and Packaging Options	115-117
AWS Classification Information	118
308/308L, 308L HiSil, 309 (H), 308/308H, 309/309L, 309 HiSil	119
316/316L, 316L HiSil, 347, 410, 312	120
GoldCOR™ 308LSi, GoldCOR™ 309LSi, GoldCOR™ 316LSi	121
Technical Section and Packaging Options	122

Hardfacing**Hardfacing Stick Electrodes**

AWS Classification Information	123
Product Line Summary	124
Hardalloy® 118, Chrome-Mang™, Hardalloy® 32	125
Hardalloy® 58, Hardalloy® 140, Hardalloy® 155	126
Hardalloy® M-932, Hardalloy® 600, Hardalloy® 148	127
Hardalloy® 40TiC, Hardalloy® 61	128
Cast-Alloy™, Cast-Alloy™ 60, GP	129
Technical Section and Packaging Options	130-132

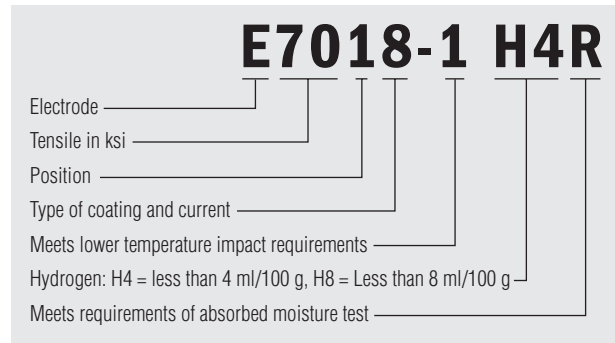
Hardfacing Wires

Product Line Summary	133
Tube-Alloy® Build Up-O, Tube-Alloy® 218-O, Tube-Alloy® AP-O	134
Tube-Alloy® 258-O, Tube-Alloy® 240-O, Tube-Alloy® 255-O.....	135
Tube-Alloy® 242-O, ArmorWear™, Tube-Alloy® 219-O	136
Tube-Alloy® 258TiC-O, Tube-Alloy® 244-O, Tube-Alloy® A43-O	137
VertiWear® 600, Tube-Alloy® 255-G, VertiWear® AP	138
Tube-Alloy® Build Up-G, Tube-Alloy® 258-G, Tube-Alloy® 260-G	139
Tube-Alloy® BU-S, Tube-Alloy® 8620-S, Tube-Alloy® 861-S.....	140
Tube-Alloy® 877-S, Tube-Alloy® 242-S MOD, Tube-Alloy® 258-S	141
Tube-Alloy® A2JL-S, Tube-Alloy® 887-S, Tube-Alloy® A250-S	142
Tube-Alloy® A420M-S, Tube-Alloy® 865-S MOD, Tube-Alloy® 952-S	143
GP-O, HF-N & SWX HF-N	144
Technical Section and Packaging Options	145-151

Part Number Section 152

Mild Steel Electrodes

How AWS Classifies Mild Steel Covered Electrodes, SMAW Process



Position

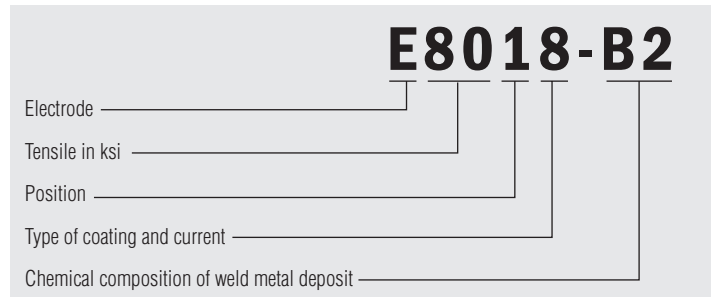
- 1 Flat, Horizontal, Vertical, Overhead
- 2 Flat and Horizontal only

Types of Coating & Current

AWS	DIGIT	TYPE OF COATING	WELDING CURRENT
6010	0	cellulose sodium	DCEP
6011	1	cellulose potassium	AC or DCEP
6022	2	titania sodium	AC or DCEN
6013	3	titania potassium	AC or DCEP or DCEN
7014	4	iron powder titania	AC or DCEP or DCEN
7018	8	iron powder low hydrogen	AC or DCEP

DCEP-Direct Current Electrode Positive
 DCEN-Direct Current Electrode Negative
 AC-Alternating Current

How AWS Classifies Low Alloy Covered Electrodes



Chemical composition of weld metal deposit

AWS	Suffix	C	Mn	Si	Ni	Cr	Mo	V	P	S	Cu	Al	Nb	N	Cu
E7018	A1	0.12	0.90*	.80	—	—	40-65	—	.03	.03					
E8018	B2L	.05	.90	0.80	—	1.00-1.50	40-65	—	.03	.03					
E8018	B2	.05-.12	.90	0.80	—	1.00-1.50	40-65	—	.03	.03					
E9018	B3L	.05	.90	0.80*	—	2.00-2.50	90-120	—	.03	.03					
E9018	B3	.05-.12	.90	0.80*	—	2.00-2.50	90-120	—	.03	.03					
E8018	B6	.05-.10	1.0	.90	.40	4.0-6.0	45-65	—	.03	.03					
E8018	B8	.05-.10	1.0	.90	.40	8.0-10.5	85-120	—	.03	.03					
E9015	B9	.08-.13	1.20	.30	8.0	8.0-10.5	85-120	.15-.30	.01	.01	.25	.04	.02-.10	.02-.07	
E8018	C1	.12	1.25	0.80*	2.00-2.75	—	—	—	.03	.03					
E8018	C2	.12	1.25	0.80*	3.00-3.75	—	—	—	.03	.03					
E8018	C3	.12	.40-1.25	.80	.80-1.10	.15	.35	.05	.03	.03					
E10018	D2	.15	1.65-2.00	0.80*	.90	—	25-45	—	.03	.03					
EXXX	G**	—	1.00 Min	.80 Min	50 Min	20 Min	20 Min	.10 Min	.03	.03	2				
E9018	M	.10	.60-1.25	.80	1.40-1.80	.15	.35	.05	.030	.030					
E10018M	M	.10	.60-1.25	.80	1.40-1.80	.15	.35	.05	.030	.030					
E11018M	M	.10	1.30-1.80	.60	1.25-2.50	.40	25-50	.05	.030	.030					
E12018	M	.10	1.30-2.25	.60	1.75-2.50	.30-1.50	.30-55	.05	.030	.030					
E7010	P1	.20	1.20	.60	1.00	.30	.50	.10	.030	.030					
E8010	P1	.20	1.20	.60	1.00	.30	.50	.10	.030	.030					

* Amount depends on electrode classification. Single values indicate maximum
 ** All G classifications have the same chemical minimum requirements

Oven Storage and Reconditioning of Stick Electrodes

Welding electrodes may be damaged by atmospheric moisture. The following table recommends proper storage conditions, and time and temperature for reconditioning electrodes that have absorbed excess moisture.

Notes for table: Pallets and unopened cartons of electrodes should be stored away from exposure to water in the form of rain, snow, spray, or humidity. Only hermetically sealed cans are safe against these conditions. Damaged cartons permit entry of damp air which may be picked up by the product and lower its quality. Humidity below 50% should be avoided for 6010, 6011, 6012 and 6013 electrodes. At no time should these classes of electrodes be stored in an oven above 130°F.

The instruction, "Dry at Room Temperature" in the table signifies that the humidity should be below 70% and the temperature should be within the limits 40°F to 120°F.

Item Designation	Storage of Contents of Open Cartons*	Reconditioning*
Mild Steel – 6010, 6011	Dry at room temperature	Not recommended
Mild Steel – 6012, 6013, 6022, 7014, 7024	100°F – 130°F	250°F – 300°F, 1 hr.
Mild Steel Low Alloy – 7010, 8010, 9010	Dry at room temperature	Not recommended
Mild Steel, Low Alloy, Low Hydrogen – 7018, 8018, 9015, 9018, 10018, 9010 11018, 12018	250°F – 300°F	500°F – 800°F, 1-2 hrs.
Stainless Steel Stick Electrodes DC Lime (AWS-15) Sterling AP & AC/DC (AWS-16) Smootharc Plus (AWS-16) Sterling (AWS-17)	225°F – 260°F	500°F – 600°F, 1 hr.
Hardalloy® Surfacing	225°F – 260°F	450°F – 600°F, 1 hr.
Special Maintenance GP	225°F – 260°F	500°F, 1 hr.
Cast Iron Electrodes	215°F – 230°F	250°F – 300°F, 1 hr.

* Remove any packaging that may be damaged from oven storage or reconditioning.

Mild Steel Electrodes

Pipemaster® Pro-60

AWS E6010

Pipemaster Pro-60 is a quick-starting, cellulosic mild steel electrode that provides you with out-standing arc stability, penetration and wash-in. It's ideal for welding in all positions and produces an X-ray quality weld with light slag that's easy to remove. Pipemaster Pro-60 can be used to weld the following API 5L steels: Grade A, B, X-42, X-46, X-52, X-56 and for the root pass on material up to X-80. It features enhanced weldability and increased physical properties. Earthtone grey coating.

Typical Applications:

- construction and shipbuilding
- general-purpose fabrication
- maintenance welding
- out-of-position X-ray welds
- pipe welding
- vertical and overhead plate welding

Typical Weld Metal Chemistry:

Carbon	0.13
Manganese	0.35
Silicon	0.10
Chromium	0.02
Nickel.....	0.02
Molybdenum.....	0.01
Vanadium.....	<0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	79,000 (542 MPa)
Yield Strength (psi)	66,000 (456 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	36 ft.lb. (49J)
-----------------------	-----------------

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	40-70 amps
1/8" (3.2 mm)	65-130 amps
5/32" (4.0 mm)	90-175 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.1, E6010
- ASME SFA 5.1, E6010
- Lloyd's Grade 3m
- En 499, E383C21
- ABS E6010

Pipemaster® 60

AWS E6010

Use Pipemaster 60 for quick starting, excellent arc stability, superior arc drive (penetration), light slag and excellent wash-in. An all-position cellulosic mild steel electrode, it outdoes itself in producing X-ray quality welds. Earthtone grey coating.

Typical Applications:

- construction and shipbuilding
- general-purpose fabrication
- maintenance welding
- out-of-position X-ray welds
- pipe welding
- vertical and overhead plate welding

Typical Weld Metal Chemistry:

Carbon	0.11
Manganese	0.28
Silicon	0.14
Chromium	0.02
Nickel.....	0.02
Molybdenum.....	< 0.01
Vanadium.....	< 0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	73,000 (504 MPa)
Yield Strength (psi)	63,000 (432 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	52 ft.lb. (70J)
-----------------------	-----------------

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	40-70 amps
1/8" (3.2 mm)	65-130 amps
5/32" (4.0 mm)	90-175 amps
3/16" (4.8 mm)	140-225 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.1, E6010
- ASME SFA 5.1, E6010
- Lloyd's Grade 3m
- ABS E6010

Hobart® 610

AWS E6010

Hobart 610 is a mild steel cellulose electrode that gives outstanding arc stability, consistent arc control, quick starts and restarts with low spatter. Its excellent bead wash, penetration and tie-in, plus the all-positional capability, make it a preferred electrode for pipe welding applications or fabrication jobs

Typical Applications:

- pipe welding
- construction and shipbuilding
- general purpose fabrication
- maintenance applications

Typical Weld Metal Chemistry:

Carbon	0.15
Manganese	0.52
Silicon	0.40
Phosphorus	0.007
Sulphur	0.015
Chromium	0.04
Nickel.....	0.06
Molybdenum.....	0.003

Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000 (576 MPa)
Yield Strength (psi)	70,000 (479 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	37 ft.lb. (50J)
-----------------------	-----------------

Available diameter and recommended operating ranges:

1/8" (3.2 mm)	80-120 amps
5/32" (4.0 mm)	100-160 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.1, E6010
- CWB E4310

Mild Steel Electrodes

Pipemaster® 70

AWS E7010-P1

The Pipemaster 70, an all-position cellulosic mild steel electrode, is excellent for producing X-ray quality welds. It's quick starting with excellent arc stability, superior penetration, light slag and excellent wash-in. Pipemaster 70 can also help you handle vertical-down welding on all passes on 5L, 5LX and X52 through X65 pipe.

Typical Applications:

- welding of high-yield pipe steels
- pipeline welding using downhill travel
- shipbuilding
- storage tanks
- drill platforms

Typical Weld Metal Chemistry:

Carbon	0.15
Manganese	0.54
Silicon	0.13
Nickel.....	0.72
Molybdenum.....	0.01
Phosphorus	0.01
Sulphur	0.02
Chromium	0.02
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	83,000 (570 MPa)
Yield Strength (psi)	69,000 (475 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	57 ft.lb. (78J)
Avg. at -40°F (-40°C)	25 ft.lb. (34J)

Available diameter and

recommended operating ranges:

1/8" (3.2 mm)	70-140 amps
5/32" (4.0 mm)	80-190 amps
3/16" (4.8 mm)	120-230 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E7010-P1
- ASME SFA 5.5, E7010-P1
- Lloyd's Grade 3m, 3Ym
- ABS E7010-P1

Pipemaster® 80

AWS E8010-P1

With features like quick starting, excellent arc stability, superior penetration, light slag and excellent wash-in, the Pipemaster 80 is great for a variety of jobs. This all-position cellulosic mild steel electrode gets a handle on vertical-down welding on all passes with X56 through X70 pipe. With good low-temperature impact properties, it can be used on pipe steels with relatively high silicon (up to .30).

Typical Applications:

- welding of high-yield pipe steels
- pipe welding using downhill travel
- shipbuilding
- storage tanks
- drill platforms

Typical Weld Metal Chemistry:

Carbon	0.19
Manganese	0.84
Silicon	0.25
Nickel.....	0.87
Molybdenum.....	0.14
Phosphorus	0.008
Sulphur	0.015
Chromium	0.07
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	98,000 (672 MPa)
Yield Strength (psi)	81,000 (560 MPa)
Elongation % in 2" (50mm)	19%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	42 ft.lb. (57J)
Avg. at -50°F (-46°C)	25 ft.lb. (34J)

Available diameter and

recommended operating ranges:

1/8" (3.2 mm)	70-140 amps
5/32" (4.0 mm)	80-190 amps
3/16" (4.8 mm)	130-240 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E8010-P1
- ASME SFA 5.5, E8010-P1
- Lloyd's Grade 3m, 3Ym
- ABS E8010-P1

Pipemaster® 90

AWS E9010-G

Pipemaster 90 is designed for welding high-yield strength pipe, out-of-position applications and for use in harsh arctic and/or desert environments. Pipemaster 90 meets the requirements of AWS 5.5 low alloy electrode specifications and pipeline API Code 1104. It is recommended for welding any 5L material from X65 to X80 steel pipe. Pipemaster 90 has a smooth, yet forceful arc that provides good penetration and fusion with excellent control. Its superior wetting characteristics offer freedom from internal undercutting with practically no slag, which minimizes slag entrapment. Although Pipemaster 90 can be used in any welding position, it is especially outstanding in the vertical-down position for welding pipe joints. As with all Pipemaster electrodes, Pipemaster 90 has excellent operator appeal with low spatter levels and easy slag removal for quick cleanup.

Typical Applications:

- high-yield X65, X70 and X80 pipe steels
- drill platforms
- storage tanks
- shipbuilding and construction

Typical Weld Metal Chemistry:

Carbon	0.25
Manganese	1.10
Silicon	0.24
Nickel.....	0.78
Phosphorus	0.005
Sulphur	0.01
Molybdenum.....	0.18
Vanadium	0.005

Typical Mechanical Properties (AW):

Tensile Strength (psi)	103,000 (713 MPa)
Yield Strength (psi)	86,000 (590 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

1/8" (3.2 mm)	70-140 amps
5/32" (4.0 mm)	80-185 amps
3/16" (4.8 mm)	120-230 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E9010-G
- ASME SFA 5.5, E9010-G

Mild Steel Electrodes

Hobart® 335A

AWS E6011

The Hobart 335A offers a fine spray transfer that enhances operator appeal in all positions. Designed for use with AC power sources, this all-position, cellulose-based electrode provides stable arc characteristics and good penetration.

Typical Applications:

- galvanized steel work
- general-purpose fabrication
- railcar
- shipbuilding
- structural work

Typical Weld Metal Chemistry:

Carbon	0.12
Manganese	0.71
Silicon	0.29
Nickel	0.04
Chromium	0.06
Molybdenum	0.01
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000 (565 MPa)
Yield Strength (psi)	69,000 (478 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	38 ft.lb. (52J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	60-90 amps
1/8" (3.2 mm)	80-125 amps
5/32" (4.0 mm)	130-160 amps
3/16" (4.8 mm)	160-190 amps

Type of Current: AC or DCEP

Approvals and Conformances:

- AWS A5.1, E6011
- ASME SFA 5.1
- Lloyd's 2m, 2Ym
- CWB-E4311
- ABS E6011

Hobart® 335C

AWS E6011

The versatile soft-arc electrode Hobart 335C is designed for AC power sources, but it can also be used on DCEP or DCEN. With the ability to weld through paint, mill scale or rust, it is an all-position cellulosic electrode with the ultimate operator appeal.

Typical Applications:

- general construction
- light sheet metal fabrication
- maintenance and repair welding
- shipbuilding
- welding on galvanized steels
- welding through paint, mill scale or rust

Typical Weld Metal Chemistry:

Carbon	0.10
Manganese	0.59
Silicon	0.22
Nickel	0.07
Chromium	0.07
Molybdenum	0.01
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	83,000 (572 MPa)
Yield Strength (psi)	72,000 (500 MPa)
Elongation % in 2" (50mm)	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	41 ft.lb. (56J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	60-90 amps
1/8" (3.2 mm)	80-125 amps
5/32" (4.0 mm)	130-160 amps

Type of Current: AC or DCEP

Approvals and Conformances:

- AWS A5.1, E6011
- ASME SFA 5.1
- Lloyd's 2m, 2Ym
- ABS E6011

Hobart® 447A

AWS E6013

A soft arc E6013 electrode, Hobart 447A. Whether put to use with AC or DC power sources, the 447A has a very stable arc and good bead appearance.

Typical Applications:

- general-purpose fabrication
- machine parts
- metal buildings and structures
- shaft buildup

Typical Weld Metal Chemistry:

Carbon	0.08
Manganese	0.39
Silicon	0.25
Nickel	0.04
Chromium	0.04
Molybdenum	0.01
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	74,000 (514 MPa)
Yield Strength (psi)	67,000 (463 MPa)
Elongation % in 2" (50mm)	30%

Typical Charpy V-notch Impact Values:

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	40-80 amps
1/8" (3.2 mm)	70-120 amps
5/32" (4.0 mm)	130-160 amps
3/16" (4.8 mm)	140-220 amps

Type of Current: AC, DCEN or DCEP

Approvals and Conformances:

- AWS A5.1, E6013
- ASME SFA 5.1
- ABS E6013

Mild Steel Electrodes

Hobart® 447C

AWS E6013

A soft arc AWS 6013 electrode, Hobart 447C is the best way to take control of poor fit-up conditions. It has fast-freeze characteristics, giving it preferred operator appeal. Hobart 447C versatility extends its usage with AC or DC power sources and low open-circuit voltage AC machines.

Typical Applications:

- general-purpose fabrication
- machine parts
- metal buildings and structures
- shaft buildup

Typical Weld Metal Chemistry:

Carbon	0.08
Manganese	0.40
Silicon	0.25
Nickel	0.02
Chromium	0.03
Molybdenum	0.01
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	75,000 (520 MPa)
Yield Strength (psi)	67,000 (465 MPa)
Elongation % in 2" (50mm)	27%

Typical Charpy V-notch Impact Values:

Not required

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	40-80 amps
1/8" (3.2 mm)	70-120 amps
5/32" (4.0 mm)	130-160 amps

Type of Current: AC, DCEN or DCEP

Approvals and Conformances:

- AWS A5.1, E6013
- ASME SFA 5.1
- CWB E4313
- ABS E6013

Hobart® Deckmaster™ 1139 Hobart® 14A

AWS E6022

When you want to get a handle on roof decking, you can rely on this E6022 electrode. It is a very fluid electrode designed for welding roof decking to support beams with burn-through spot welds. You can also rely on the Deckmaster 1139 for rapid downhill welding when joining light-gauge materials.

Typical Applications:

- rapid downhill welding
- roof decking
- sheet metal

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	1.17
Silicon	0.15
Phosphorus	0.013
Sulphur	0.013

Typical Mechanical Properties:

Transverse tensile strength exceeds	
63,000 psi	(435 MPa)

Typical Charpy V-notch Impact Values:

Not required

Available diameter and recommended operating ranges:

1/8" (3.2 mm)	110-150 amps
5/32" (4.0 mm)	150-180 amps

Type of Current: DCEN, DCEP or AC

Approvals and Conformances:

- AWS A5.1, E6022

AWS E7014

When you are tackling jobs where higher deposition and speed of travel are needed, the Hobart 14A is the electrode to choose. An all-position electrode, Hobart 14A is equipped with a rutile base and iron powder addition to increase deposition rates and give operator appeal. This electrode offers outstanding slag removal and bead appearance and can be operated with AC, DCEP or DCEN power.

Typical Applications:

- frames
- heavy sheet metal
- machine bases

Typical Weld Metal Chemistry:

Carbon	0.063
Manganese	0.42
Silicon	0.22
Phosphorus	0.013
Sulphur	0.014
Nickel	0.07
Chromium	0.06
Molybdenum	0.01
Vanadium	0.02

Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000 (561 MPa)
Yield Strength (psi)	73,000 (505 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values:

Not required

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	70-90 amps
1/8" (3.2 mm)	120-145 amps
5/32" (4.0 mm)	140-210 amps
3/16" (4.8 mm)	180-280 amps

Type of Current: AC, DCEP or DCEN

Approvals and Conformances:

- AWS A5.1, E7014
- ASME SFA 5.1, E7014
- CWB E4914
- ABS E7014

Mild Steel Electrodes

Hobart® Rocket® 7024

AWS E7024

The Rocket 7024 is engineered with outstanding "best in class" features including, complete slag removal, extremely low spatter and super smooth soft arc. This E7024 electrode is more forgiving than anything else on the market when it comes to welding material that is moderately rusty or not as clean as it should be. It is also exceptionally fast when used down hand in properly designed weld joints or in horizontal fillet welds and can be used in both single or multipass applications.

Typical Applications:

- plate fabrication
- tank fabrication
- barge construction
- construction and earthmoving equipment

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	0.74
Silicon	0.45
Phosphorus	0.009
Sulphur	0.019
Nickel.....	0.07
Chromium	0.06
Molybdenum.....	0.01
Vanadium	0.02

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000 (562 MPa)
Yield Strength (psi)	70,000 (484 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

1/8" (3.2 mm)	130-170 amps
5/32" (4.0 mm)	180-245 amps
3/16" (4.8 mm)	200-300 amps
7/32" (5.6 mm)	250-340 amps
1/4" (6.4 mm)	300-380 amps

Type of Current: DCEN, AC or DCEP

Approvals and Conformances:

- AWS A5.1, E7024
- ASME SFA 5.1, E7024
- ABS E7024

Hobart® 24

AWS E7024, E7024-1

If you want speed, the Hobart 24 high-speed electrode has it. Hobart 24 is exceptionally fast when used down hand in properly designed weld joints or in horizontal fillet welds where equal leg fillets are desired. It has excellent operation on either AC or DCEN power with a drag welding technique. It also meets AWS E7024-1 impact requirements.

Typical Applications:

- earthmoving equipment
- mining machinery
- plate fabrication
- railcar
- structural
- shipbuilding
- mobile trailers

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.77
Silicon	0.37
Phosphorus	0.008
Sulphur	0.019
Nickel.....	0.07
Chromium	0.05
Molybdenum.....	0.01
Vanadium	0.03

Typical Mechanical Properties (AW):

Tensile Strength (psi)	79,000 (545 MPa)
Yield Strength (psi)	71,000 (487 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW) for E7024-1:

Avg. at 0°F (-20°C) 50 ft.lb. (68J)

Available diameter and

recommended operating ranges:

1/8" (3.2 mm)	130-150 amps
5/32" (4.0 mm)	180-225 amps
3/16" (4.8 mm)	200-280 amps
7/32" (5.6 mm)	250-320 amps
1/4" (6.4 mm)	300-360 amps

Type of Current: DCEN, AC, or DCEP

Approvals and Conformances:

- AWS A5.1, E7024, E7024-1
- ASME SFA 5.1, E7024
- ABS 3
- CWB E4924-1
- ABS E7024-1

Hobart® 418

AWS E7018 H4R, E7018-1 H4R

Hobart 418 gives you all the flexibility you need in a general-purpose, low-hydrogen, mild steel electrode. It also has good out-of-position welding capabilities and provides an X-ray quality deposit. This unique electrode is ideal for tacking prior to finish welding with Fabshield self-shielded, tubular wire, because the construction of the Hobart 418 allows removal of all the slag from the self-shielded wire.

Typical Applications:

- field erections, steel structures
- jobs where low-hydrogen weld metal in the tensile strength range of 70,000 psi is required
- low alloy structurals
- low-, medium- and high-carbon steels
- offshore rigs, power plants

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	0.95
Silicon	0.54
Phosphorus	0.012
Sulphur	0.014
Nickel.....	0.07
Chromium	0.07
Molybdenum.....	0.03
Vanadium	< 0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	78,000 (541 MPa)
Yield Strength (psi)	64,000 (441 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-46°C) 86 ft.lb. (116J)

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	80-100 amps
1/8" (3.2 mm)	90-150 amps
5/32" (4.0 mm)	110-230 amps
3/16" (4.8 mm)	150-300 amps
7/32" (5.6 mm)	220-350 amps
1/4" (6.4 mm)	270-380 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.1, E7018 H4R, E7018-1 H4R
- ASME SFA 5.1, E7018
- ABS 3H5, 3Y
- Lloyd's BF3.3YH5
- CWB E4918-1 H4
- ABS E7018

Mild Steel Electrodes

Hobart® 718MC

AWS E7018 H4R, E7018(M)-1 H4R

You can take control with the electrode that's formulated and manufactured to give you excellent moisture resistance, good out-of-position welding capabilities and an X-ray quality deposit. The 718MC meets the requirements of military spec. Mil-E-22200/10, including moisture absorption limits of .10% max. as opened and .20% max. after 9 hrs. at 80°F and 80% relative humidity.

Typical Applications:

- barge offshore rigs, shipbuilding
- boiler code applications
- field erection, steel structures
- petrochemical plants, power plants
- railcar and locomotive construction
- welding of enameling steels; free machining steels; low alloy structurals; and low, medium or high carbon steels
- weldments in low-temperature environments where low-temperature impacts are important

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	0.92
Silicon	0.25
Phosphorus	0.011
Sulphur	0.016
Nickel.....	0.07
Chromium	0.06
Molybdenum.....	0.01
Vanadium.....	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	80,000 (550 MPa)
Yield Strength (psi)	69,000 (478 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-46°C)	106 ft.lb. (144J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-165 amps
5/32" (4.0 mm)	125-220 amps
3/16" (4.8 mm)	160-300 amps
7/32" (5.6 mm)	260-340 amps
1/4" (6.4 mm)	270-380 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.1, E7018 H4R, E7018 -1H4R
- ABS 3H5, 3Y
- ASME SFA 5.1, E7018
- MIL-E-22200/10

Hobart® 7018XLM

AWS E7018 H4R, E7018-1 H4R

A high deposition rate, iron powder electrode for use with either AC or DCEP. The 7018XLM is known for its outstanding ease of welding in vertical or overhead positions. This electrode can be used for mild steel and joining mild steel to low alloy steels.

Typical Applications:

- field erections
- shipbuilding
- pipeline
- construction

Typical Weld Metal Chemistry

Carbon	0.05
Manganese	0.93
Silicon	0.38
Phosphorus	0.012
Sulphur	0.009
Nickel.....	0.04
Chromium	0.05
Molybdenum.....	0.01
Vanadium.....	<0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	77,000 (529MPa)
Yield Strength (psi)	64,000 (441MPa)
Elongation % in 2" (50mm)	32%

Typical Charpy V-Notch Impact Values (AW):

Avg. @ -50°F (-46C)	86 ft. lb (117J)
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Available diameters and

recommended operating ranges:

3/32" (2.4mm)	70-110 amps
1/8" (3.2mm)	90-160 amps
5/32" (4.0mm)	110-230 amps
3/16" (4.8mm)	190-300 amps
7/32" (5.6mm)	240-340 amps
1/4" (6.4mm)	310-390 amps

Type of Current: DCEP or AC

Approvals or Conformances:

- AWS A5.1, E7018-1 H4R
- ASME SFA 5.1, E7018-1 H4R
- ABS E7018-1 H4R

Hobart® Soft-Arc™ 7018-1

AWS E7018 H4R, E7018-1 H4R

An electrode designed to give outstanding operator appeal in all positions. Features a quiet and stable arc, minimal spatter and easy slag removal, and very good low temperature impacts. Perfect for steels that require low hydrogen, x-ray quality welds.

Typical Applications:

- field erections
- shipbuilding
- pipeline
- construction

Typical Weld Metal Chemistry

Carbon	0.04
Manganese	1.02
Silicon	0.46
Phosphorus	0.009
Sulphur	0.009
Nickel.....	0.08
Chromium	0.06
Molybdenum.....	0.01
Vanadium.....	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000 (558MPa)
Yield Strength (psi)	69,000 (476MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-Notch Impact Values (AW):

Avg. @ -50°F (-46C)	108 ft. lb (147J)
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Available diameters and

recommended operating ranges:

3/32" (2.4mm)	80-110 amps
1/8" (3.2mm)	90-150 amps
5/32" (4.0mm)	110-230 amps
3/16" (4.8mm)	150-300 amps

Type of Current: DCEP or AC

Approvals or Conformances:

- AWS A5.1, E7018-1 H4R
- ASME SFA 5.1, E7018-1 H4R

Mild Steel Electrodes

Hobart® 18AC

AWS E7018 H8

Highly recommended for applications using small 208/230V, single phase AC welders, 18AC has good operator appeal, excellent re-striking characteristics and an extremely stable arc. 18AC is also an excellent choice for skip or tack welds. The slag is self-removing in most applications. 18AC will work well on all AC power sources and performs exceptionally well on utility-type welders.

Typical Applications:

- low-, medium- and high-carbon steels
- skip or tack welds
- shops, farms, hobbyist
- some high-strength low alloy steels

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	0.77
Silicon	0.37
Chromium	0.07
Molybdenum	0.01
Nickel	0.07
Vanadium	0.02
Phosphorus	0.009
Sulphur	0.021

Typical Mechanical Properties (AW):

Tensile Strength (psi)	87,000 (597 MPa)
Yield Strength (psi)	75,000 (516 MPa)
Elongation % in 2" (50mm)	30%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	54 ft.lb. (74J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-165 amps
5/32" (4.0 mm)	125-220 amps

Type of Current: AC, DCEN or DCEP

Approvals and Conformances:

- AWS A5.1, E7018 H8
- ASME SFA 5.1, E7018

Boilermaker™ 18

E7018 H4R, E7018-1 H4R

Boilermaker electrodes were specifically designed to be used in the repair of water wall tubes in power generation facilities. Their unique chemistry and formulation construction create water clear x-rays. The excellent starts and re-starts, low spatter levels, easy slag removal, and smooth wash and bead tie-ins make this the choice electrode to use for those critical welds in boilers.

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.80
Phosphorus	0.013
Sulphur	0.012
Silicon	0.49
Nickel	0.04
Chromium	0.05
Molybdenum	0.01
Vanadium	0.01

Typical Mechanical Properties (as welded):

Tensile Strength (psi)	87,000 (601 MPa)
Yield Strength (psi)	74,000 (510 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values

Avg. at -20°F (-30°C)	115 ft.lb. (156J)
Avg. at -50°F (-46°C)	87 ft.lb. (118J)

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	60-110 amps
1/8" (3.2 mm)	90-165 amps

Type of Current: DCEP, AC

Approvals and Conformances:

- AWS A5.1, ASME SFA 5.1

Hoballoy® 7018A1

AWS E7018-A1 H4R

For pressure vessel applications, the Hoballoy 7018A1 is an outstanding choice. When welding .50% molybdenum steel and other low alloy steels, the Hoballoy 7018A1 offers resistance to moisture reabsorption. This important feature helps prevent hydrogen cracking and aids in the elimination of starting porosity.

Typical Applications:

- construction and maintenance of boilers
- piping
- tubing

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	0.77
Silicon	0.42
Phosphorus	0.02
Sulphur	0.01
Molybdenum	0.52

Typical Mechanical Properties

(stress relieve 1 hour @ 1150°F):

Tensile Strength (psi)	85,000 (587 MPa)
Yield Strength (psi)	74,000 (507 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E7018-A1 H4R
- ASME SFA 5.5, E7018-A1
- ABS E7018-A1

Low Alloy Electrodes

Boilermaker™ 18A1

E7018-A1 H4R

Boilermaker electrodes were specifically designed to be used in the repair of water wall tubes in power generation facilities. Their unique chemistry and formulation construction create water clear x-rays. The excellent starts and re-starts, low spatter levels, easy slag removal, and smooth wash and bead tie-ins make this the choice electrode to use for those critical welds in boilers.

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	0.86
Phosphorus	0.01
Sulphur	0.01
Silicon	0.59
Molybdenum.....	0.50

Typical Mechanical Properties

(stress relieve 1 hour @ 1150°F):

Tensile Strength (psi)	97,000 (671 MPa)
Yield Strength (psi)	86,000 (592 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	65-110 amps
1/8" (3.2 mm)	80-160 amps

Type of Current: DCEP, AC

Approvals and Conformances:

- AWS A5.5, ASME SFA 5.5

Boilermaker™ B2

E8018-B2 H4R

Boilermaker electrodes were specifically designed to be used in the repair of water wall tubes in power generation facilities. Their unique chemistry and formulation construction create water clear x-rays. The excellent starts and re-starts, low spatter levels, easy slag removal, and smooth wash and bead tie-ins make this the choice electrode to use for those critical welds in boilers.

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	0.68
Phosphorus	0.01
Sulphur	0.01
Silicon	0.36
Chromium	1.12
Molybdenum.....	0.40

Typical Mechanical Properties

(stress relieve 1 hour @ 1275°F):

Tensile Strength (psi)	98,000 (673 MPa)
Yield Strength (psi)	86,000 (592 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values:

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	60-105 amps
1/8" (3.2 mm)	90-160 amps

Type of Current: DCEP, AC

Approvals and Conformances:

- AWS A5.5-81 E8018-B2
- AWS A5.5-06 E7018-B2, ASME SFA 5.5

Boilermaker™ B3

E9018-B3 H4R

Boilermaker electrodes were specifically designed to be used in the repair of water wall tubes in power generation facilities. Their unique chemistry and formulation construction create water clear x-rays. The excellent starts and re-starts, low spatter levels, easy slag removal, and smooth wash and bead tie-ins make this the choice electrode to use for those critical welds in boilers.

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	0.65
Phosphorus	0.01
Sulphur	0.01
Silicon	0.33
Chromium	2.24
Molybdenum.....	1.09

Typical Mechanical Properties

(stress relieve 1 hour @ 1275°F):

Tensile Strength (psi)	111,000 (768 MPa)
Yield Strength (psi)	96,000 (663 MPa)
Elongation % in 2" (50mm)	21%

Typical Charpy V-notch Impact Values:

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	60-105 amps
1/8" (3.2 mm)	90-160 amps

Type of Current: DCEP, AC

Approvals and Conformances:

- AWS A5.5-81 E9018-B3
- AWS A5.5-06 E8018-B3, ASME SFA 5.5

Low Alloy Electrodes

Hoballoy® 8018B2

AWS E8018-B2 H4R

Hoballoy 8018B2 is an outstanding electrode for welding higher strength steels requiring tensile strengths of 80,000 lbs. or more. Ideal for welding in conditions of high heat or humidity, it features a specially formulated coating that's designed to reduce moisture pick-up and thus help keep hydrogen cracking and starting porosity to a minimum.

Typical Applications:

- fabrication and maintenance of boilers and associated piping
- steels such as 1-1/4 Cr-1/2 Mo and 1/2 Cr-1/2 Mo

Typical Weld Metal Chemistry:

Carbon	0.08
Manganese	0.69
Silicon	0.66
Phosphorus	0.02
Sulphur	0.01
Chromium	1.34
Molybdenum.....	0.51

Typical Mechanical Properties

(stress relieve 1 hour @ 1275°F):

Tensile Strength (psi)	105,000 (723 MPa)
Yield Strength (psi)	92,000 (634 MPa)
Elongation % in 2" (50mm)	21%

Typical Charpy V-notch Impact Values

Not required

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E8018-B2 H4R
- ASME SFA 5.5, E8018-B2
- ABS E8018-B2

Hoballoy® 8018B2L

AWS E8018-B2L H4R, E7018-B2L H4R

Hoballoy 8018B2L is an outstanding electrode for welding higher strength steels requiring tensile strengths of 80,000 lbs. or more. Low carbon levels reduce the possibility of cracking in the weldment. It offers good arc characteristics and excellent notch toughness. Plus, Hoballoy 8018B2L features a specially formulated coating that reduces moisture pick-up, making it ideal for welding in conditions of high heat and humidity and helps to minimize hydrogen cracking and starting porosity.

Typical Applications:

- fabrication and maintenance of boilers and associated piping
- steels such as 1-1/4 Cr-1/2 Mo and 1/2 Cr-1/2 Mo

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	0.63
Silicon	0.56
Phosphorus	0.014
Sulphur	0.010
Chromium	1.48
Molybdenum.....	0.53

Typical Mechanical Properties

(stress relieve 1 hour @ 1275°F):

Tensile Strength (psi)	89,000 (612 MPa)
Yield Strength (psi)	74,000 (510 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values

Not required

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5-81, E8018-B2L H4R
- AWS A5.5, E7018-B2L H4R
- ASME SFA 5.5, E8018-B2L
- ABS E8018-B2L

Hoballoy® 8018B6

AWS E8018-B6 H4R

The Hoballoy 8018B6 is the right choice for 5% Cr, 1/2% Mo steels and other chromium-molybdenum steels in severe service conditions. Its special coating reduces moisture pick-up, minimizing hydrogen cracking and starting porosity. Plus, it offers excellent arc characteristics for a stable, easy-to-control arc and its quick slag removal means faster cleanup time.

Typical Applications:

- petrochemical and petroleum industries
- tubes and tube sheets
- plate steels
- high pressure hydrogen service

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	0.80
Phosphorus	0.01
Sulphur	0.01
Silicon	0.30
Chromium	4.80
Nickel.....	0.07
Molybdenum.....	0.48

Typical Mechanical Properties

(stress relieve 1 hour @ 1375°F):

Tensile Strength (psi)	87,000 (603 MPa)
Yield Strength (psi)	72,000 (499 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values

Not required

Available diameter and recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-210 amps
3/16" (4.8 mm)	200-290 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E8018-B6 H4R
- ABS E8018-B6
- ASME SFA 5.5

Low Alloy Electrodes

Hoballoy® 8018B8

AWS E8018-B8 H4R

Whenever you face severe service conditions, the Hoballoy 8018-B8 is the perfect electrode choice. Designed for joining creep-resistant, high chromium (9% Cr) alloys of similar composition, its iron powder low-hydrogen coating reduces moisture pick-up and helps to minimize hydrogen cracking and starting porosity. It also offers a stable, easy-to-control arc and improved bead appearance.

Typical Applications:

- petrochemical and petroleum industries
- tubes, tube sheets and plate steels for high pressure hydrogen service
- 9% Cr and 1% Mo steels

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	0.75
Phosphorus	0.013
Sulphur	0.007
Silicon	0.54
Chromium	9.07
Nickel.....	0.08
Molybdenum.....	0.88

Typical Mechanical Properties

(stress relieve 1 hour @ 1375°F):

Tensile Strength (psi)	96,000 (663 MPa)
Yield Strength (psi)	76,000 (525 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-210 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E8018-B8 H4R
- ABS E8018-B8
- ASME SFA 5.5

Hoballoy® 8018C1

AWS E8018-C1 H4

This high-quality electrode is designed for applications of 2% nickel deposits and the welding of nickel-bearing steels for low temperature applications where toughness of the weld metal is important. It provides good puddle control, excellent wetting action and tie-in and offers good arc characteristics as well as excellent notch toughness (65 ft. lbs. at -75°F) and easy slag removal. Hoballoy 8018C1 is also great for welding in conditions of high heat or humidity as it features a specially-formulated coating that's designed to minimize hydrogen cracking and starting porosity.

Typical Applications:

- shipbuilding
- piping
- gas storage tanks

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	1.04
Silicon	0.44
Phosphorus	0.01
Sulphur	0.02
Nickel.....	2.44

Typical Mechanical Properties

(stress relieve 1 hour @ 1125°F):

Tensile Strength (psi)	93,000 (643 MPa)
Yield Strength (psi)	79,000 (543 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (SR):

Avg. at -75°F (-59°C)	59 ft.lb. (80J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E8018-C1 H4
- ASME SFA 5.5, E8018-C1 H4
- ABS E8018-C1

Hoballoy® 8018C2

AWS E8018-C2 H4

Hoballoy 8018C2 is an outstanding electrode for low temperature applications requiring tensile strengths greater than 80,000 psi and for welding 2% to 4% nickel steels. It features a special formulated coating designed to minimize hydrogen cracking and starting porosity.

Typical Applications:

- shipbuilding
- piping
- AR and T-1 steel welding
- gas storage tanks

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	0.90
Phosphorus	0.01
Sulphur	0.01
Silicon	0.42
Nickel.....	3.62

Typical Mechanical Properties

(stress relieve 1 hour @ 1125°F):

Tensile Strength (psi)	94,000 (647 MPa)
Yield Strength (psi)	83,000 (572 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values (SR):

Avg. at -100°F (-73°C)	92 ft.lb. (125J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
1/4" (6.4 mm)	300-400 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E8018-C2 H4
- ASME SFA 5.5, E8018-C2 H4
- ABS E8018-C2

Low Alloy Electrodes

Hoballoy® 8018C3

AWS E8018-C3 H4

Designed for high tensile strength steels requiring 1% nickel weld deposits. Provides excellent puddle control with good wetting action and tie in. Specifically formulated with a coating to resist conditions of high heat and humidity.

Typical Applications:

- commercial using 80,000 tensile steels
- military using 80,000 tensile steels
- welding of AR and T-1 steels

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	0.98
Silicon	0.26
Phosphorus	0.01
Sulphur	0.01
Nickel	0.89
Chromium	0.07
Molybdenum	0.09
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000 (576 MPa)
Yield Strength (psi)	73,000 (503 MPa)
Elongation % in 2" (50mm)	30%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	98 ft.lb. (133J)
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Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E8018-C3 H4
- ASME SFA 5.5, E8018-C3 H4
- MIL-E-22200/1 (1/8, 5/32)
- ABS E8018-C3

Hoballoy® 9015B91

AWS E9015-B91 H4R

The improved creep resistance of the Hoballoy 9015B91 make it an outstanding electrode for power generation and high temperature service applications. It features low moisture reabsorption that prevents starting porosity and offers resistance to hydrogen-induced cracking. Plus, its quick and easy slag removal makes cleanup faster than ever.

Typical Applications:

- petrochemical and petroleum industries
- high temperature service applications
- tubes, tube sheets
- pipe and plate steels
- 9% Cr - 1% Mo-V steels

Typical Weld Metal Chemistry:

Carbon	0.10
Manganese	0.59
Phosphorus	0.01
Sulphur	0.007
Silicon	0.21
Copper	0.03
Chromium	8.90
Vanadium	0.23
Nickel	0.52
Molybdenum	0.92
Aluminum	< 0.01
Niobium	0.04
Nitrogen	0.04

Typical Mechanical Properties

(stress relieve 1 hour @ 1400°F):

Tensile Strength (psi)	113,000 (777 MPa)
Yield Strength (psi)	98,000 (678 MPa)
Elongation % in 2" (50mm)	17%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-100 amps
1/8" (3.2 mm)	90-140 amps
5/32" (4.0 mm)	120-210 amps

Approvals and Conformances:

- AWS A5.5, E9015-B91 H4R
- ASME SFA5.5

Hoballoy® 9018B3

AWS E9018-B3 H4R

The Hoballoy 9018B3 is an outstanding electrode that's designed for welding higher strength steel applications. It offers better corrosion resistance than carbon electrodes and features a special coating that's formulated to reduce moisture pick-up, helping to minimize hydrogen cracking and starting porosity.

Typical Applications:

- chrome-moly pipes
- castings
- forgings
- boiler work

Typical Weld Metal Chemistry:

Carbon	0.08
Manganese	0.68
Silicon	0.55
Phosphorus	0.02
Sulphur	0.01
Chromium	2.39
Molybdenum	1.05

Typical Mechanical Properties

(stress relieve 1 hour @ 1275°F):

Tensile Strength (psi)	109,000 (750 MPa)
Yield Strength (psi)	93,000 (640 MPa)
Elongation % in 2" (50mm)	22%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E9018-B3 H4R
- ASME SFA 5.5, E9018-B3 H4R
- ABS E9018-B3

Low Alloy Electrodes

Hoballoy® 9018B3L

AWS E9018-B3L H4R, E8018-B3L H4R

Hoballoy 9018B3L is an outstanding electrode for welding higher-strength piping where cracking is a problem. It features a coating that's specially formulated to reduce moisture pick-up, which makes it ideal for conditions of high heat and humidity and for minimizing hydrogen cracking and starting porosity.

Typical Applications:

- chrome-moly pipes
- boiler work

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	0.59
Silicon	0.52
Phosphorus	0.02
Sulphur	0.01
Chromium	2.22
Molybdenum	1.03

Typical Mechanical Properties

(stress relieve 1 hour @ 1275°F):

Tensile Strength (psi)	97,000 (669 MPa)
Yield Strength (psi)	82,000 (563 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values

Not required

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5-81, E9018-B3L H4R
- AWS A5.5-96, E8018-B3L H4R
- ASME SFA 5.5, E9018-B3L
- ABS E9018-B3L

Hoballoy® 9018M

AWS E9018-M H4R

The Hoballoy 9018M is an outstanding electrode that's designed for applications requiring tensile strengths of at least 90,000 psi. An ideal choice for conditions of high heat and humidity, Hoballoy 9018M has a specially formulated coating that reduces moisture pick-up, which helps to minimize hydrogen cracking and starting porosity.

Typical Applications:

- joining HY-90 steel
- joining HY-80 steel
- joining T-1 steel
- joining other high-tensile steels

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.92
Silicon	0.16
Phosphorus	0.014
Sulphur	0.016
Nickel	1.63
Chromium	0.08
Molybdenum	0.26
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	97,000 (672 MPa)
Yield Strength (psi)	84,000 (583 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C) 60 ft.lb. (81J)

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E9018-M H4R
- ASME SFA 5.5, E9018-M H4R
- ABS E9018-M
- DNV 5 YH5

Hoballoy® 10018D2

AWS E10018-D2 H4R

A high-quality electrode, Hoballoy 10018D2 is designed for the welding of high tensile steels and manganese-molybdenum steels requiring tensile strengths of at least 100,000 psi. It has high operator appeal and offers a wide variety of welding advantages including good arc characteristics, ductility, crack-resistance, easy slag removal, and low spatter and smoke. Plus, Hoballoy 10018D2 is an ideal choice for conditions of high heat and humidity because it features a special coating that's designed to reduce moisture pick-up, which also helps to minimize hydrogen cracking and starting porosity.

Typical Applications:

- manganese-moly castings
- alloy forgings
- structurals
- pressure vessel applications in either the as welded or stress-relieved condition

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	1.96
Silicon	0.19
Phosphorus	0.02
Sulphur	0.01
Molybdenum	0.40
Nickel	0.47

Typical Mechanical Properties

(stress relieve 1 hour @ 1150°F):

Tensile Strength (psi)	109,000 (772 MPa)
Yield Strength (psi)	96,000 (661 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values (SR):

Avg. at -60°F (-51°C) 40 ft.lb. (54J)

Available diameter and

recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E10018-D2 H4R
- ASME SFA 5.5, E10018-D2 H4R

Mild Steel/Low Alloy Electrodes

Hoballoy® 10018M

AWS E10018-M H4R

Designed for welding low alloy, high-strength steels, the Hoballoy 10018M provides good ductility and excellent notch toughness. Its good arc characteristics, easy slag removal, and low spatter and smoke combine for operator appeal. Also it is ideal in high heat and humidity because of its moisture-resistant coating, which also helps to prevent hydrogen cracking and starting porosity.

Typical Applications:

- reinforcing steel
- HY-80, HY-90, T-1, AR and other high-tensile steels

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	1.18
Phosphorus	0.019
Sulphur	0.013
Silicon	0.10
Chromium	0.08
Nickel	1.77
Molybdenum	0.36
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	100,000 (687 MPa)
Yield Strength (psi)	88,000 (606 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C)	60 ft.lb. (82J)
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Available diameter and recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.5, E10018-M H4R
- ASME SFA5.5

Hoballoy® 11018M

AWS E11018-M H4R

Designed for military applications and other projects that require weld joints with tensile strengths of at least 110,000 psi, Hoballoy 11018M offers a wide range of welding advantages that will improve your welding productivity – good arc characteristics, excellent puddle control with good wetting action and tie-in, and easy slag removal. Ideal for conditions of high heat and humidity, it features a special coating that's designed to reduce moisture pick-up, helping to minimize hydrogen cracking and starting porosity. Hoballoy 11018M also offers good ductility, good crack resistance and high notch toughness even at temperatures as low as -60°F.

Typical Applications:

- low-alloy steels including HY-80, HY-90 and T-1

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	1.57
Silicon	0.34
Nickel	1.99
Phosphorus	0.015
Sulphur	0.010
Molybdenum	0.29
Chromium	0.19
Vanadium	0.010

Typical Mechanical Properties (AW):

Tensile Strength (psi)	116,000 (799 MPa)
Yield Strength (psi)	107,000 (736 MPa)
Elongation % in 2" (50mm)	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C)	56 ft.lb. (76J)
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Available diameter and recommended operating ranges:

3/32" (2.4 mm)	75-115 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps
1/4" (6.4 mm)	300-400 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E11018-M H4R
- ASME SFA 5.5, E11018-M
- ABS E11018M
- MIL-E-222001, (1/8)
- DNV 5Y69

Hoballoy® 12018M

AWS E12018-M H4R

Hoballoy 12018M is designed for welding high tensile steels requiring weld joints with tensile strengths of at least 120,000 psi. It offers a wide variety of welding advantages that include: good arc characteristics, ductility, crack-resistance, easy slag removal, and low spatter and smoke. Hoballoy 12018M also works extremely well under conditions of high heat and humidity because its special coating is designed to reduce moisture pick-up, which also helps to keep hydrogen cracking and starting porosity to a minimum.

Typical Applications:

- low-alloy steels
- forgings
- castings
- plate and pressure vessels

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	1.55
Silicon	0.42
Phosphorus	0.02
Sulphur	0.013
Nickel	1.76
Molybdenum	0.39
Chromium	0.63
Vanadium	0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	130,000 (895 MPa)
Yield Strength (psi)	118,000 (814 MPa)
Elongation % in 2" (50mm)	19%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C)	24 ft.lb. (32J)
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Available diameter and recommended operating ranges:

3/32" (2.4 mm)	70-110 amps
1/8" (3.2 mm)	90-160 amps
5/32" (4.0 mm)	130-220 amps
3/16" (4.8 mm)	200-300 amps

Type of Current: DCEP or AC

Approvals and Conformances:

- AWS A5.5, E12018-M H4R
- ASME SFA 5.5, E12018-M H4R
- ABS E12018M

Mild Steel/Low Alloy Electrodes

Pieces Per Pound Arc Welding Electrodes								
Hobart Type	Diameter: Length:	3/32" 10"	3/32" 14"	1/8" 14"	5/32" 14"	3/16" 14"	7/32" 18"	1/4" 18"
Pipemaster 60, 70, 80, 90 Pipemaster Pro-60, 610		—	30	17	12	8	—	—
335A, 335C		—	29	16	11	7	—	—
447A, 447C		—	30	15	10	7	—	—
14A		—	23	13	9	6	—	—
24 (-1)		—	—	10	7	—	4	2
XX18 (Iron Powder)		—	21	12	9	7	—	3
Stainless		22	—	13	9	4	—	3

Comparative Index of Mild Steel & Low Hydrogen Electrodes				
AWS Class	HOBART	MUREX	ESAB	LINCOLN
E6010	610 Pipemaster Pro-60 Pipemaster 60	—	SW-10P; SW-10P Plus	Fleetweld 5P, 5P+; Pipeliner 6P+
E6011	335A; 335C	6011C	SW-14	Fleetweld 35; 35LS; 180
E6013	447A; 447C	6013D	SW-15; 6013LV	Fleetweld 37
E6022	1139	—	—	Fleetweld 22
E7010-P1	Pipemaster 70	—	710P	Shield-Arc HYP+ Pipeliner 7P+
E7014	14A	7014	SW-15 IP	Fleetweld 47
E7018 (AC)	18AC	—	Atom Arc 7018-AC	Lincoln 7018AC
E7018	7018XLM Boilermaker 18 418; 718MC Soft-Arc 7018-1	7018MR	Atom Arc 7018	Excalibur 7018MR; Jetweld LH-70; Jet-LH-78 MR
E7018-1	7018XLM Boilermaker 18 418; 718MC Soft-Arc 7018-1	—	Atom Arc 7018-1	Excalibur 7018-1 MR
E7024	Rocket 7024; 24	7024	Sureweld 7024	Jetweld 1
E7024-1	24	—	Sureweld 7024	Jetweld 1
E7010-P1	Pipemaster 70	—	Sureweld 710p	Shield-Arc HYP+
E8010-P1	Pipemaster 80	—	SW-810P	Pipeliner 8P+ Shield-Arc 80
E9010-G	Pipemaster 90	—	—	Shield-Arc 90

Mild Steel/Low Alloy Electrodes

Comparative Index of Low Alloy Electrodes

AWS Class	HOBART	ESAB	LINCOLN
E7018-A1	Hoballoy 7018A1/Boilermaker A1	Atom Arc 7018-Mo	Excalibur 7018-A1 MR
E8018-B2	Hoballoy 8018-B2/Boilermaker B2	Atom Arc 8018-CM	Excalibur 8018-B2 MR
E7018-B2L/E8018-B2L	Hoballoy 8018-B2L	Atom Arc 7018-B2L	
E8018-B6	Hoballoy 8018B6	Atom Arc 8018-B6	
E8018-B8	Hoballoy 8018B8	Atom Arc 8018-B8	
E8018-C1	Hoballoy 8018C1	Atom Arc 8018-C1	Excalibur 8018-C1 MR
E8018-C2	Hoballoy 8018C2	Atom Arc 8018-N	
E8018-C3	Hoballoy 8018C3	Atom Arc 8018	Excalibur 8018-C3 MR
E9015-B9	Hoballoy 9015B9	Atom Arc 9015-B9	
E9018-B3	Hoballoy 9018B3/Boilermaker B3	Atom Arc 9018-CM	Excalibur 9018-B3 MR
E8018-B3L/E9018-B3L	Hoballoy 9018B3L	Atom Arc 8018-B3L	
E9018M	Hoballoy 9018M	Atom Arc 9018	Excalibur 9018M MR
E10018-D2	Hoballoy 10018D2	Atom Arc 10018-MM	Excalibur 10018-D2 MR
E10018M	Hoballoy 10018M	Atom Arc 10018	
E11018M	Hoballoy 11018M	Atom Arc T	Excalibur 11018M MR
E12018M	Hoballoy 12018M	Atom Arc 12018	

Approvals, Specifications, Classifications

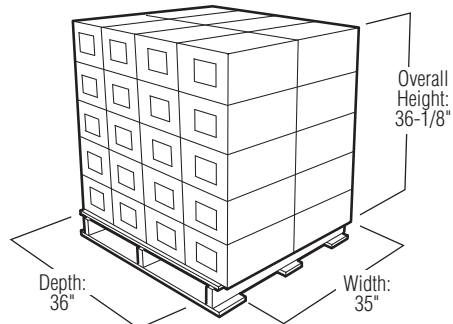
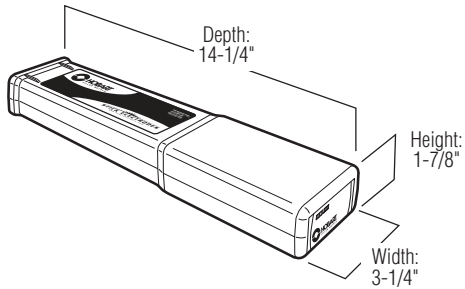
All filler metals listed conform to the specifications listed in each section. Because some agencies do not specifically approve particular types, please be careful to note whether or not the heading for each section indicates specific approval.

Product	AWS/ASME	ABS	Lloyd's	CWB
PIPEMASTER PRO 60	E6010	E6010	3m	-
PIPEMASTER 60	E6010	E6010	3m	-
610	E6010	-	-	E4310
HOBART 335A	E6011	E6011	2m, 2Ym	E4311
HOBART 335C	E6011	E6011	2m, 2Ym	-
HOBART 447A	E6013	E6013	-	-
HOBART 447C	E6013	E6013	-	E4313
HOBART 1139	E6022	-	-	-
HOBART 14A	E7014	E7014	-	E4914
BOILERMAKER 18	E7018 H4R/E7018-1 H4R			
HOBART 418	E7018 H4R/E7018-1 H4R	3 H5, 3Y	3m, 3Ym	E4918-1-H4
HOBART 718MC	E7018 H4R/E7018-1 H4R	3 H5, 3Y	-	-
HOBART 18AC	E7018 H8	-	-	-
HOBART 24	E7024/E7024-1	3	-	E4924-1
HOBART ROCKET 7024	E7024	E7024	-	-
PIPEMASTER 70	E7010-P1	E7010-P1	3m, 3Ym	-
PIPEMASTER 80	E8010-P1	E8010-P1	3m, 3Ym	-
PIPEMASTER 90	E9010-G	-	-	-
HOBALLOY 7018A1/BOILERMAKER A1	E7018-A1	E7018-A1	-	-
HOBALLOY 8018B2/BOILERMAKER B2	E8018-B2	E8018-B2	-	-
HOBALLOY 8018B2L	E8018-B2L	E8018-B2L	-	-
HOBALLOY 8018B6	E8018-B6	E8018-B6	-	-
HOBALLOY 8018B8	E8018-B8	E8018-B8	-	-
HOBALLOY 8018C1	E8018-C1	E8018-C1	-	-
HOBALLOY 8018C2	E8018-C2	E8018-C2	-	-
HOBALLOY 8018C3	E8018-C3	E8018-C3	-	-
HOBALLOY 9015B9	E9015-B9	-	-	-
HOBALLOY 9018B3/BOILERMAKER B3	E9018-B3	E9018-B3	-	-
HOBALLOY 9018B3L	E9018-B3L	E9018-B3L	-	-
HOBALLOY 9018M	E9018-M	E9018-M	-	-
HOBALLOY 10018D2	E10018-D2	E10018-D2	-	-
HOBALLOY 10018M	E10018-M	-	-	-
HOBALLOY 11018M	E11018-M	E11018-M	-	-
HOBALLOY 12018M	E12018-M	E12018-M	-	-
7018XLM	E7018 H4R/E7018-1 H4R	E7018-1	-	-
SOFT-ARC 7018-1	E7018 H4R/E7018-1 H4R	E7018-1	-	-

Mild Steel/Low Alloy Electrodes

5-lb. Plastic-Pak

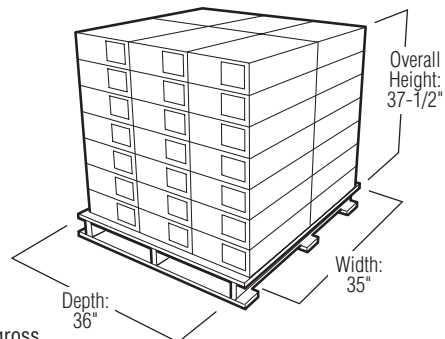
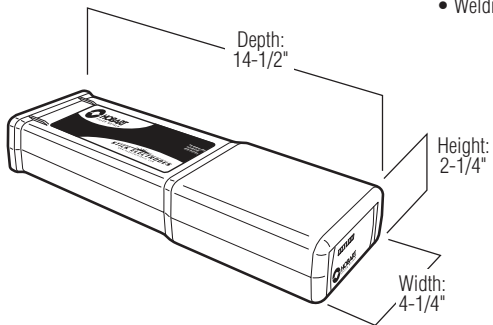
- Color-coded labels for easy product identification
- Packaging designed for display in showroom
- Resealable Plastic-Pak protects and preserves product before and after use
- Welding parameters on label



Weight: 2,000 lbs. net, 2,235 lbs. gross
Stacking sequence: 4 wide, 2 deep and 5 high
Master pack per pallet: 40
 10 packs per 50 lb master pack

10-lb. Plastic-Pak

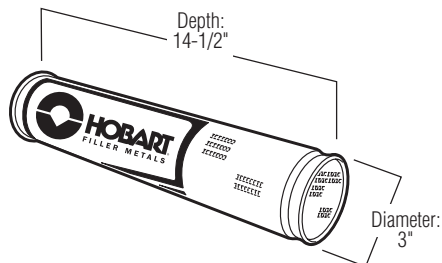
- Color-coded for easy product identification
- Packing designed for display in showroom
- Resealable Plastic-Pak protects and preserves product before and after use
- Welding parameters on label



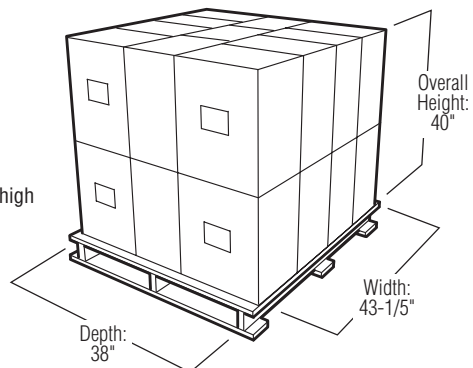
Weight: 2,100 lbs. net, 2,235 lbs. gross
Stacking sequence: 3 wide, 2 deep and 7 high
Master pack per pallet: 42
 5 packs per 50 lb master pack

10-lb. Can

- Hermetically-sealed cans keep electrodes protected and ready to use when opened
- Easy open pull-tab with plastic lid to protect product after opening



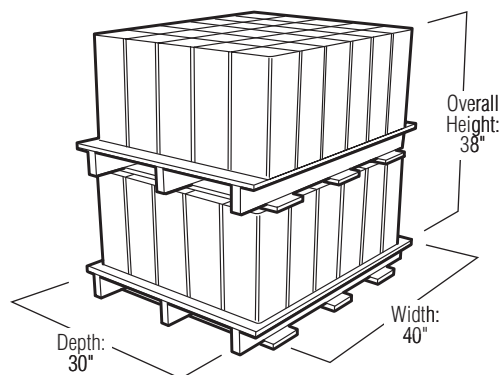
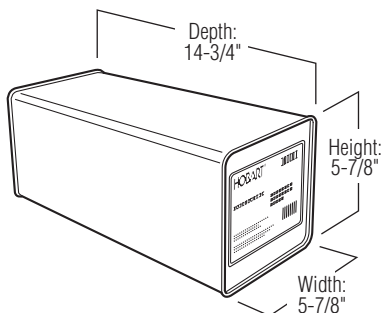
Weight: 1,320 lbs. net, 1,465 lbs. gross
Stacking sequence: 3 wide, 4 deep and 2 high
Master pack per pallet: 22
 6 cans per 60 lb master pack



Mild Steel/Low Alloy Electrodes

50-lb. Can 14" length

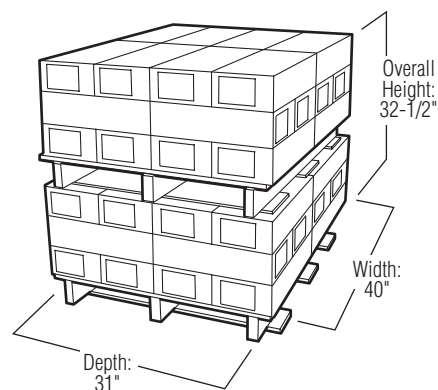
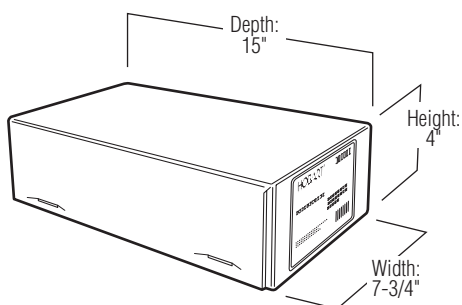
- Hermetically-sealed cans keep electrodes protected and ready for use when opened
- Pull-tab for safe, trouble-free opening
- Two separate pallets for convenient handling



Weight: 3,000 pounds net, 3,150 gross
 Stacking sequence: 5 wide, 6 deep & 2 high
 Cans per pallet: 60 cans

50-lb. Carton

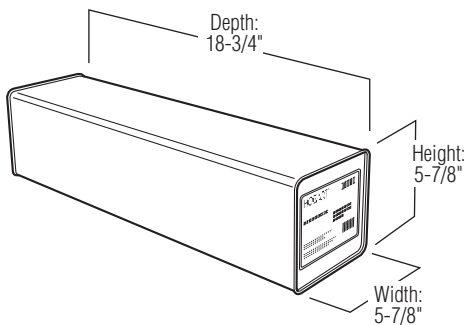
- Two separate pallets for convenient handling



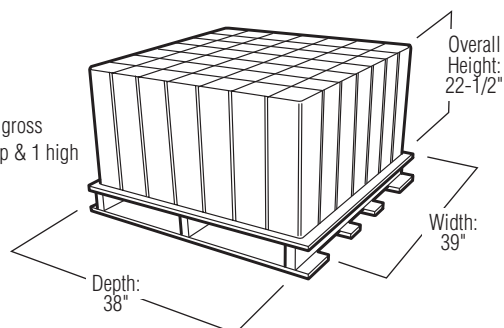
Weight: 3,000 pounds net, 3,090 gross
 Stacking sequence: 4 wide, 4 deep & 2 high
 Cartons per pallet: 48 cartons

50-lb. Can 18" length

- Hermetically-sealed cans keep electrodes protected and ready for use when opened
- Pull-tab for safe, trouble-free opening
- Two separate pallets for convenient handling

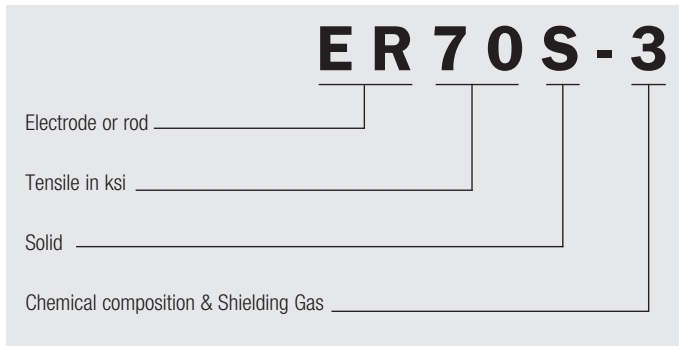


Weight: 2,450 pounds net, 2,540 gross
 Stacking sequence: 7 wide, 7 deep & 1 high
 Cans per pallet: 49 cans

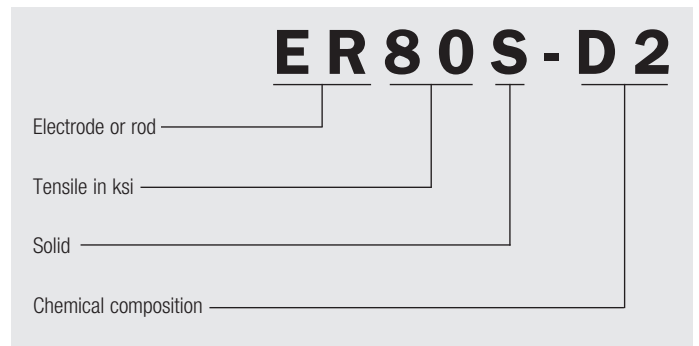


Mild Steel Solid Wires

How AWS Classifies Mild Steel Solid Electrodes, GMAW, GTAW and PAW



How AWS Classifies Low Alloy Solid Electrodes, GMAW, GTAW and PAW



Chemical Composition of Solid Wires Using CO₂ Shielding Gas

AWS classification	Shielding gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	% Elongation min. in 2" (50 mm)	Impact strength Min. ft-lbs at °F (J at °C)	CHEMICAL COMPOSITION									
						C	Mn	Si	P	S	Ni	Cr	Mo	Cu	Other
ER70S-2	CO ₂	70 (480)	58 (400)	22	20 at -20 (27 at -29)	.07	.90-1.40	.40-.70	.025	.035	—	—	—	.50	Ti, Zr, Al
ER70S-3	CO ₂	70 (480)	58 (400)	22	20 at 0 (27 at -18)	.06-.15	.90-1.40	.45-.70	.025	.035	—	—	—	.50	—
ER70S-4	CO ₂	70 (480)	58 (400)	22	—	.07-.15	1.00-1.50	.65-.85	.025	.035	—	—	—	.50	—
ER70S-5	CO ₂	70 (480)	58 (400)	22	—	.07-.19	.90-1.40	.30-.60	.025	.035	—	—	—	.50	Al
ER70S-6	CO ₂	70 (480)	58 (400)	22	20 at -20 (27 at -29)	.07-.15	1.40-1.85	.80-1.15	.025	.035	—	—	—	.50	—
ER70S-7	CO ₂	70 (480)	58 (400)	22	20 at -20 (27 at -29)	.07-.15	1.50-2.00	.50-.80	.025	.035	—	—	—	.50	—
ER80S-D2	CO ₂	80 (550)	68 (470)	17	20 at -20 (27 at -29)	.07-.12	1.60-2.10	.50-.80	.025	.025	.15	—	.40-.60	.50	—

GMAW Shielding Gases

Type	Metal	Shielding Gas/Advantage
Spray Transfer	Carbon steel	95-98% Ar/2-5% O₂ — Improves arc stability; produces a more fluid and controllable puddle; good coalescence and bead contour; minimizes undercutting; permits higher speeds than pure argon. 90-92% Ar/8-10% CO₂ — High-speed mechanized welding; low-cost manual welding; pulsed welding.
	Low alloy steel	98% Ar/2% O₂ — Minimizes undercutting; provides good toughness.
Short Circuiting Transfer	Carbon steel	CO₂ — Broad penetration; reduces chances of porosity. 75% Ar/25% CO₂ — High welding speeds without burn-through; minimum distortion and spatter. Ar/5-10% CO₂ — Deeper penetration; faster welding speeds.
	Low alloy steel	60-70% He/25-35% Ar/4-5% CO₂ — Minimum reactivity; excellent toughness; excellent arc stability, wetting characteristics, and bead contour; little spatter. 75% Ar/25% CO₂ — Fair toughness; excellent arc stability, wetting characteristics and bead contour; little spatter.

Quantum Arc™ 3

AWS ER70S-3

When you need a wire versatile enough for general fabrication or a wire that can handle argon-rich mixtures like 75% Ar/25% CO₂ with ease, choose Hobart Quantum Arc 3. This wire also meets AWS EM13K requirements for sub arc in the 1/16" diameter only. It's a precision mix of silicon and manganese in a deoxidized wire that makes short-circuiting and spray-transfer applications go smoothly.

Typical Applications:

- automotive
- general fabrication
- farm equipment
- ornamental iron fabrication
- railcars
- sheet metal
- storage bins

Typical wire chemistry (as manufactured):

Carbon	0.08
Manganese	1.19
Silicon	0.46
Phosphorus	0.15
Sulphur	0.10
Copper	0.20

Typical Mechanical Properties (AW):

	CO ₂
Tensile Strength (psi)	77,000 (531 MPa)
Yield Strength (psi)	63,000 (436 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C), CO ₂	83 ft.lb. (113J)
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Approvals and Conformances:

- AWS A5.18, ER70S-3
- ASME SFA 5.18, ER70S-3
- CWB ER49S-3
- AWS A5.17, EM 13K (1/16" diameter only)

QCL-3

AWS ER70S-3

A premium copperless, mild steel wire, with silicon and manganese levels suitable for light levels of rust and mill scale, QCL-3 is designed for use with CO₂, argon-rich, and argon/oxygen mixtures, exhibiting a smooth, stable arc in high-speed spray, pulse and short arc applications.

Typical Applications:

- general fabrication
- farm equipment
- automotive
- storage bins
- railcar

Typical wire chemistry (as manufactured):

Carbon	0.09
Manganese	1.19
Silicon	0.46
Phosphorus	0.015
Sulphur	0.010

Typical Mechanical Properties (AW):

	CO ₂
Tensile Strength (psi)	81,000 (556 MPa)
Yield Strength (psi)	66,000 (452 MPa)
Elongation % in 2" (50mm)	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	79 ft.lb. (107J)
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Approvals and Conformances:

- AWS A5.18, ER70S-3
- ASME SFA 5.18, ER70S-3
- CWB ER49S-3

Quantum Arc™ 6

AWS ER70S-6

When the task demands excellent weldability for CO₂ or Ar/CO₂ mixtures and you have rusty, scaly or oily plates, choose the mild steel electrode with deoxidizers powerful enough to handle the job. Hobart Quantum Arc 6 is formulated to ensure sound, porosity-free welds over a wide range of general shop fabrications.

Typical Applications:

- construction
- farm equipment
- general shop work
- steel castings or forging salvage
- shaft buildup
- tanks
- automotive

Typical wire chemistry (as manufactured):

Carbon	0.08
Manganese	1.45
Silicon	0.81
Phosphorus	0.009
Sulphur	0.015

Typical Mechanical Properties (AW):

	CO ₂
Tensile Strength (psi)	85,000 (587 MPa)
Yield Strength (psi)	70,000 (485 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C), CO ₂	50 ft.lb. (67J)
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Approvals and Conformances:

- AWS A5.18, ER70S-6
- ASME SFA A5.18, ER70S-6
- CWB ER49S-6

Mild Steel Solid Wires

QCL-6

AWS ER70S-6

A premium copperless, mild steel wire with higher deoxidizer levels for use on light to moderately scaled or lightly rusted plate without pre-cleaning. QCL-6 produces a smooth, stable arc, with low spatter levels, producing a weld bead that ties evenly to the sides. QCL-6 can be used with all common gas mixtures and arc transfer applications (short arc, spray, pulse).

Typical Applications:

- general fabrication
- pressure vessels
- pipe fabrication
- automotive
- railcar
- farm equipment

Typical wire chemistry (as manufactured):

Carbon	0.08
Manganese	1.40
Silicon	0.82
Phosphorus	0.007
Sulphur	0.008

Typical Mechanical Properties (AW):

	CO ₂
Tensile Strength (psi)	79,000 (546 MPa)
Yield Strength (psi)	63,000 (436 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C) 77 ft.lb. (104J)

Approvals and Conformances:

- AWS A5.18, ER70S-6
- ASME SFA 5.18, ER70S-6
- CWB ER49S-6

HB-28

AWS ER70S-6

When your CO₂ welding task won't allow for strict cleaning practices, choose HB-28. It's a mild steel electrode that provides sound, porosity-free welds. You'll get excellent weldability with powerful deoxidizers for your work with CO₂ and other commercially available shielding gas mixtures.

Typical Applications:

- construction work
- farm equipment
- general shop applications with poor fit-up or rusty, oily plates
- steel castings or forging salvage
- tanks
- home projects
- sheet metal

Typical wire chemistry (as manufactured):

Carbon	0.08
Manganese	1.52
Silicon	0.80
Phosphorus	0.009
Sulphur	0.012

Typical Mechanical Properties (AW):

	CO ₂
Tensile Strength (psi)	86,000 (596 MPa)
Yield Strength (psi)	71,000 (487 MPa)
Elongation % in 2" (50mm)	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C), CO₂ 44 ft.lb. (60J)

Approvals and Conformances:

- AWS A5.18, ER70S-6
- ASME SFA 5.18, ER70S-6

Low Alloy Steel Solid Wires

Quantum Arc™ D2

AWS ER80S-D2, ER90S-G

This exceptional quality, high-strength welding wire gives you an X-ray quality weld deposit. You can use it with CO₂, Ar/CO₂ and Ar/O₂ mixtures in situations where porosity is a problem or when you must counter high-sulfur or carbon content in your base metal.

Typical Applications:

- alloy applications
- construction equipment
- high-strength welds
- X-ray quality applications

Typical wire chemistry (as manufactured):

Carbon	0.10
Manganese	1.72
Silicon	0.63
Phosphorus	0.008
Sulphur	0.016
Molybdenum.....	0.49

Typical Mechanical Properties (AW):

CO₂

Tensile Strength (psi)	94,000 (652 MPa)
Yield Strength (psi)	80,000 (552 MPa)
Elongation % in 2" (50mm)	20%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C), CO₂ 34 ft.lb. (46J)

Approvals and Conformances:

- AWS A5.28, ER80S-D2, ER90S-G
- ASME SFA 5.28, ER80S-D2, ER90S-G
- CWB

QCL-D2

AWS ER80S-D2, ER90S-G

QCL-D2 is a premium copperless solid wire with a chemistry that includes the addition of 1/2% molybdenum to provide increased strength in those applications requiring tensile strengths of 80,000 - 90,000. QCL-D2 provides x-ray quality welds, and can be used with CO₂, 75/25, and 90/10 Shielding Gases.

Typical Applications:

- high temperature service piping
- construction equipment
- trailers
- Cranes high tensile applications

Typical wire chemistry (as manufactured):

Carbon	0.08
Manganese	1.67
Silicon	0.65
Phosphorus	0.009
Sulphur	0.012
Molybdenum.....	0.47

Typical Mechanical Properties (AW):

CO₂

Tensile Strength (psi)	94,000 (652 MPa)
Yield Strength (psi)	79,000 (547 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C), CO₂ 41 ft.lb. (56J)

Approvals and Conformances:

- AWS A5.28, ER80S-D2, ER90S-G
- ASME SFA 5.28, ER80S-D2, ER90S-G
- CWB

Comparative Index Of Solid Wires

AWS CLASS	HOBART	LINCOLN	ESAB	NATIONAL STANDARD
ER70S-3	QCL-3; QUANTUM ARC 3	SuperArc L-50; SuperGlide S3	Spoolarc 29S; Spoolarc 82; ESAB MIG-3	NS-101
ER70S-6	HB-28; QCL-6; QUANTUM ARC 6	SuperArc L-56; SuperGlide S6	Spoolarc 86; ESAB MIG-6	NS-115
ER80S-D2	QCL-D2; QUANTUM ARC D2	SuperArc LA-90	Spoolarc 83	NS-102

Steel Solid Wires

Packaging of Hobart Solid Welding Wires

Package	Pallet Net Weight lbs. (kg)	Flange diameter inches	Hub diameter inches	Width inches	Arbor hole inches	Engaging hole inches	Eng. hole off center inches	Available in the following Brands:
2 lb. spool	20* (18.2)	4"	1-1/2"	1-3/4"	5/8"	n/a	n/a	HB
10 lb. plastic spool	1,920 (871.7)	8"	3-7/8"	2-1/8"	2-1/16"	7/16"	1-3/4"	HB
33 lb. Steel Reel	2,376 (1,078.7)	11-3/4"	6-7/8"	4"	2-1/16"	n/a	n/a	QA
45 lb. Steel Reel	3,240 (1,471)	11-3/4"	6-7/8"	4"	2-1/16"	n/a	n/a	QA
33 lb. plastic spool	2,376 (1078.7)	11-3/4"	8"	4"	2-1/16"	7/16"	1-3/4"	HB
45 lb. plastic spool	3,240 (1471)	11-3/4"	6-1/2"	4"	2-1/16"	7/16"	1-3/4"	HB
30 lb. fiber spool	2,160 (980.6)	11-3/4"	8-1/4"	4"	2-1/16"	7/16"	1-3/4"	QCL
45 lb. fiber spool	3,240 (1471)	11-3/4"	6-1/2"	4"	2-1/16"	7/16"	1-3/4"	QCL
60 lb. fiber spool	1,920 (871.7)	14"	8-1/4"	4"	2-1/16"	7/16"	1-3/4"	QA, QCL
600 lb. ROBOPAK	2,400 (1,089.6)	Height - 32-1/4", Diameter - 20-3/8", Core diameter - 11-1/2"						QA, QCL
300 lb. Recyclable ROBOPAK	2,400 (1,089.6)	Height - 21", Diameter - 23"						QA, QCL
600 lb. Recyclable ROBOPAK	2,400 (1089.6)	Height - 35-1/2", Diameter - 23"						QA, QCL
950 lb. Recyclable ROBOPAK	1,900 (862.6)	Height - 35-1/2", Diameter - 23"						QA, QCL

*Carton weight.

Short Circuit Transfer Welding Parameters

Size	Material thickness ¹ in. (decimal) mm		Electrode diameter in. mm		Welding current amps-DC	Arc voltage (electrode positive)	Wire feed speed ipm	Travel speed ipm	Shielding gas flow CFH ²
24 ga.	0.025	0.6	0.024	0.6	30-50	13-15	130-160	10-20	15-20
24 ga.	0.025	0.6	0.030	0.8	30-50	15-17	85-100	12-20	15-20
22 ga.	0.031	0.8	0.030	0.8	40-60	15-17	90-130	18-22	15-20
20 ga.	0.037	0.9	0.035	0.9	55-85	15-17	70-120	35-40	15-20
18 ga.	0.050	1.3	0.035	0.9	70-100	16-19	100-160	35-40	15-20
1/16"	0.063	1.6	0.035	0.9	80-110	17-20	120-180	30-35	20-25
5/64"	0.078	2.0	0.035	0.9	100-130	18-20	160-220	25-30	20-25
1/8"	0.125	3.2	0.035	0.9	120-160	19-22	210-290	20-25	20-25
1/8"	0.125	3.2	0.045	1.1	180-200	20-24	210-240	27-32	20-25
3/16"	0.187	4.7	0.035	0.9	140-160	19-22	210-290	14-19	20-25
3/16"	0.187	4.7	0.045	1.1	180-205	20-24	210-245	18-22	20-25
1/4"	0.250	6.4	0.035	0.9	140-160	19-22	240-290	11-15	20-25
1/4"	0.250	6.4	0.045	1.1	180-225	20-24	210-290	12-18	20-25

Note: Single-pass flat and horizontal fillet positions. Reduce current 10 to 15% for vertical and overhead welding.

1 For fillet and groove welds – for fillet welds, size equals metal thickness; for square groove welds, the root opening should equal 1/2 the metal thickness.

2 Shielding Gas is CO₂, or 75% Ar/25% CO₂.

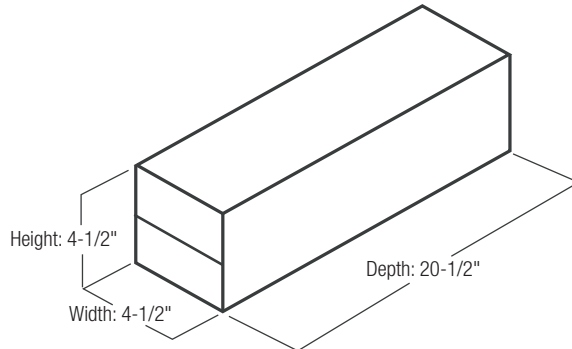
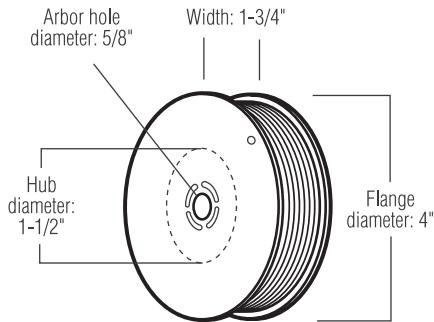
Spray Transfer Welding Parameters

Size	Material thickness in. (decimal) mm		Type of weld ¹	Electrode diameter in. mm		Welding current amps-DC	Arc voltage (electrode positive)	Wire feed speed ipm	Travel speed ipm	92% Ar/8% CO ₂ gas flow CFH
18 ga.	0.050	1.3	fillet	0.045	1.1	280	26	350	190	25
			square groove	0.045	1.1	270	25	340	180	25
16 ga.	0.063	1.6	fillet	0.045	1.1	325	26	360	150	35
			square groove	0.045	1.1	300	28	350	140	35
14 ga.	0.078	2.0	fillet	0.045	1.1	325	27	360	130	35
			square groove	0.045	1.1	325	29	360	110	35
			square groove	0.045	1.1	330	29	350	105	35
11 ga.	0.125	3.2	fillet	1/16	1.6	380	28	210	85	35
			square groove	0.045	1.1	350	29	380	100	35
3/16"	0.188	4.8	fillet	1/16	1.6	425	31	260	75	35
			square groove	1/16	1.6	425	30	320	76	35
			square groove	1/16	1.6	375	31	260	70	35
1/4"	0.250	6.4	square groove	1/16	1.6	475	32	340	55	35

1 For mild carbon and low alloy steels – on square groove welds, backing is required.

2-lb. Plastic Spool

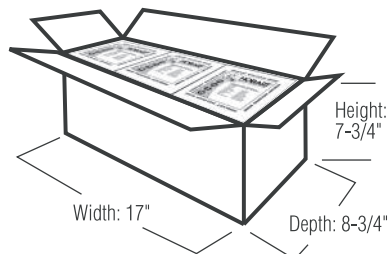
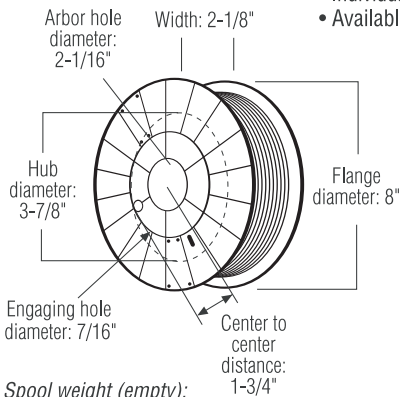
- Color-coded labels for easy wire identification
- Clear, plastic clamshell allows easy viewing of wire product
- Available in: ☒ HB



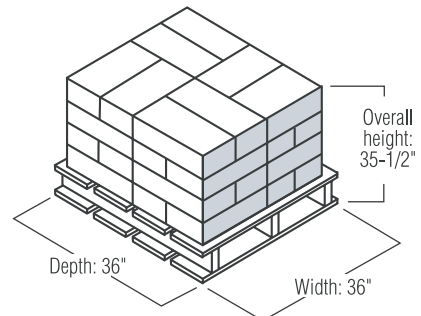
Weight: 20 lbs.
Spoils per master carton: 10

10-lb. Plastic Spool

- Color-coded labels for easy wire identification
- Colorful packaging—great for P.O.P. displays
- Handy application and wire size reference chart on back
- Individually packed for increased portability and protection
- Available in: ☒ HB



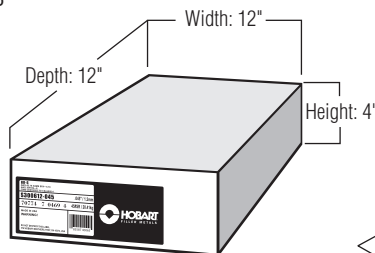
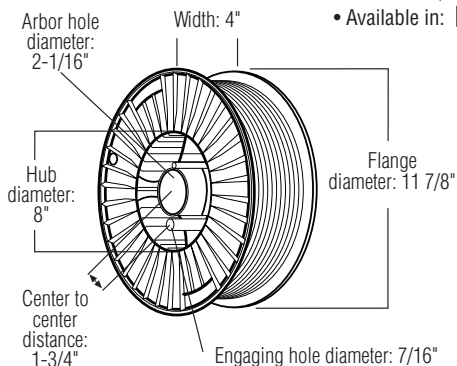
Weight: 60 lbs.
Spoils per master carton: 10



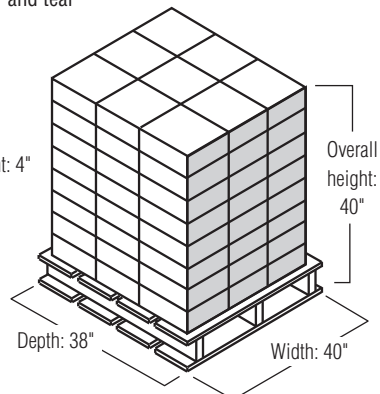
Weight: 1,920 lbs.
Stacking sequence: 4 wide, 4 deep and 4 high
Master cartons per pallet: 32
Spoils per pallet: 192

33-lb. Plastic Spool

- Uses standard spool hub – no special adapters required
- Durable – designed to withstand most kinds of everyday wear and tear
- Convenient, easy to change over
- Available in: ☒ HB



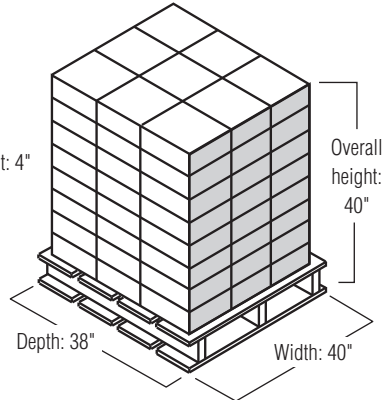
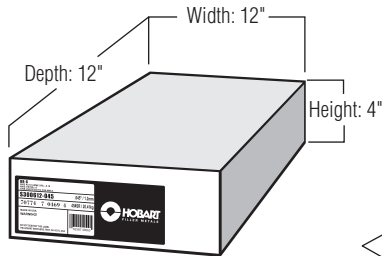
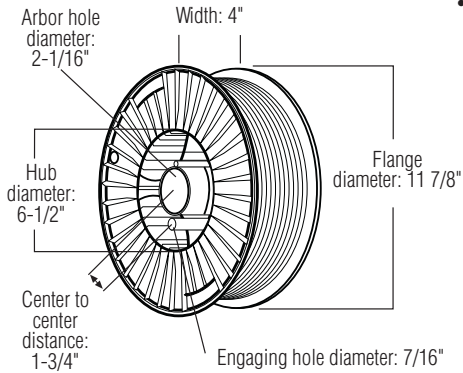
Weight: 2,376 lbs.
Stacking sequence: 3 wide, 3 deep and 8 high
Spoils per pallet: 72



Steel Solid Wires

45-lb. Plastic Spool

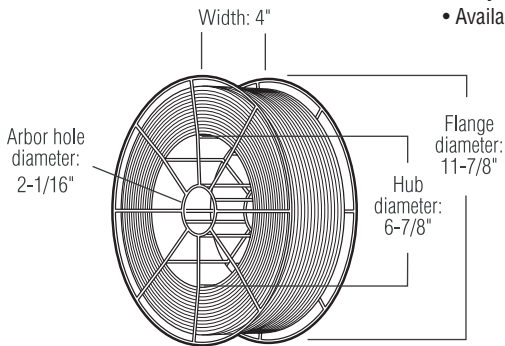
- Uses standard spool hub – no special adapters required
- Durable – designed to withstand most kinds of everyday wear and tear
- Convenient, easy to change over
- Available in: ☒ HB



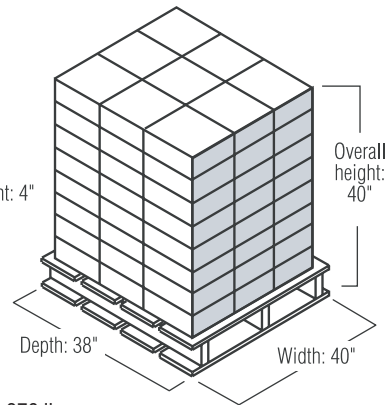
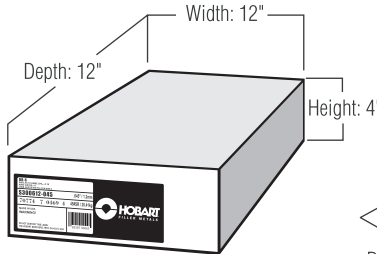
Weight: 3,240 lbs.
Stacking sequence: 3 wide, 3 deep and 8 high
Spools per pallet: 72

33-lb. & 45-lb. Steel Reels™

- Uses standard spool hub – no special adapters required
- Durable – designed to withstand most kinds of everyday wear and tear
- Recyclable – no need to separate from other steel scrap materials
- Available in: ☒ Quantum Arc



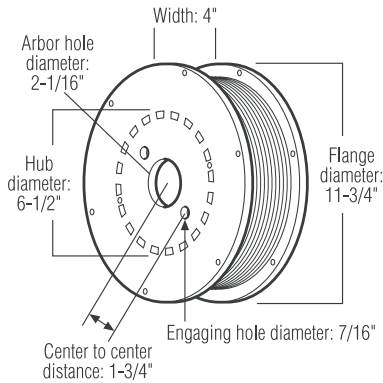
Steel Reel weight (empty): 1.1 lbs.



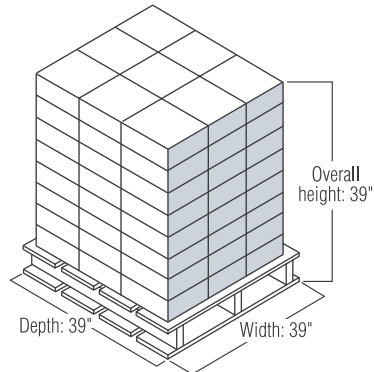
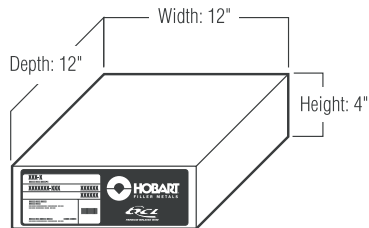
Weight: 33-lb Steel Reel 2,376 lbs.
45-lb Steel Reel 3,240 lbs.
Stacking sequence: 3 wide, 3 deep and 8 high
Spools per pallet: 72

45-lb. Fiber Spool

- Uses standard spool hub – no special adapters required
- Durable – designed to withstand most kinds of everyday wear and tear
- Convenient, easy to change over
- Available in: ☒ QCL



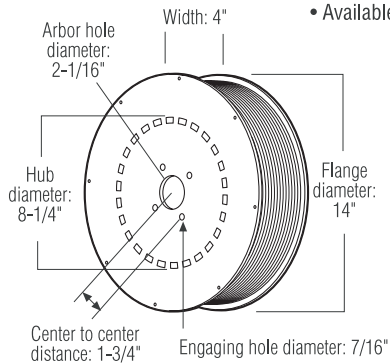
Spool weight (empty): 2.6 lbs.



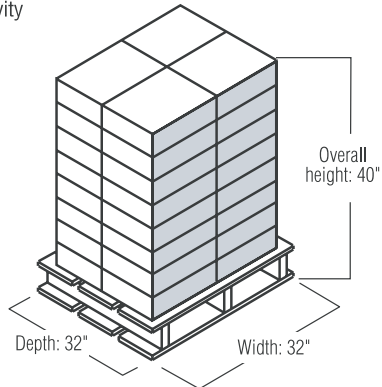
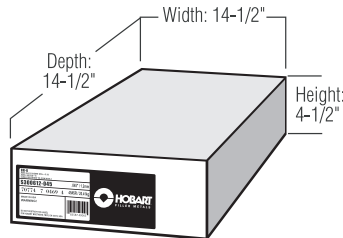
Weight: 3,240 lbs. net, 3,470 lbs. gross (est.)
Stacking sequence: 3 wide, 3 deep and 8 high
Spools per pallet: 72

60-lb. Fiber Spool

- Convenient, easy to changeover
- Simplicity reduces changeover time, increases productivity
- More wire on spool means fewer changeovers
- Available in: ☒ Quantum Arc ☒ QCL



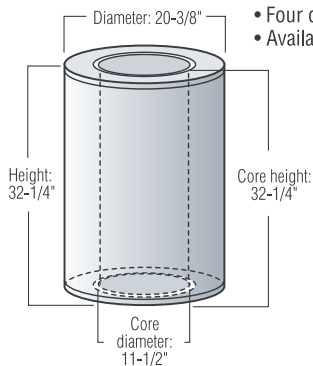
Spool weight (empty): 3 lbs.



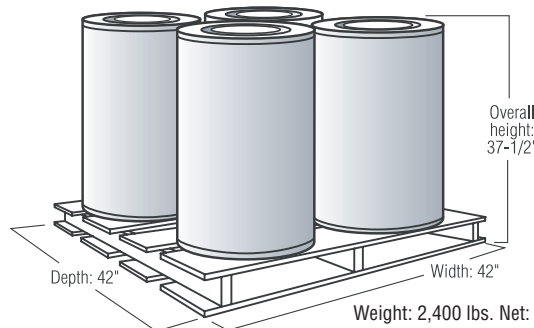
Weight: 1,920 lbs. net, 2,115 lbs. gross (est.)
Stacking sequence: 2 wide, 2 deep and 8 high
Spools per pallet: 32

600-lb. ROBOPAK®

- Tangle-free feeding, no wire flip
- Compact drum to reduce floor-space requirements
- ROBOPAK protects wire from manufacturing environment (dust, spatter, oil, etc.)
- Can be located away from the weld station for convenient change over
- Four drums per pallet reduces excess handling
- Available in: ☒ Quantum Arc ☒ QCL



Drum weight (empty): 19 lbs.

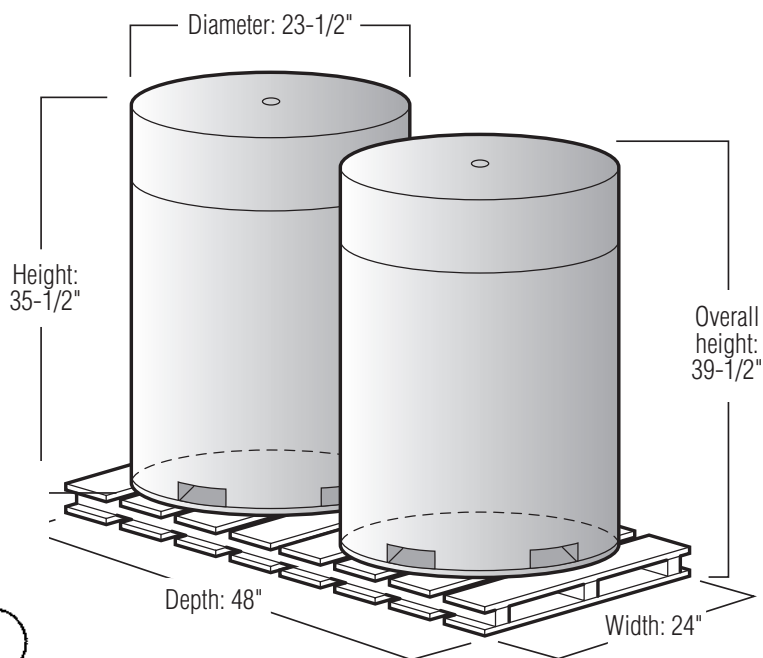
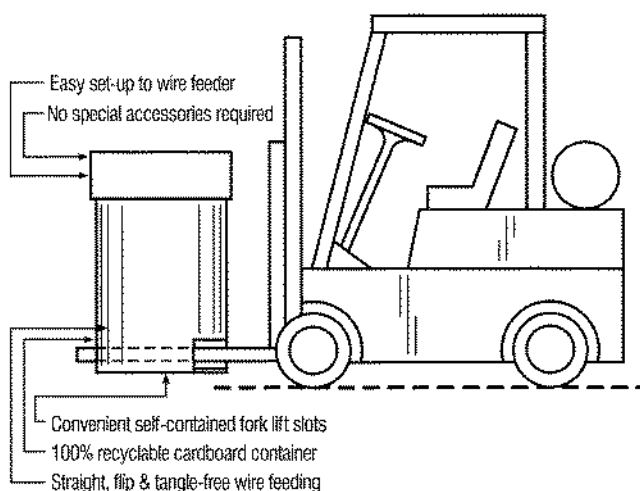


Weight: 2,400 lbs. Net: 2,519 lbs. gross (est.)
Drums per pallet: 4

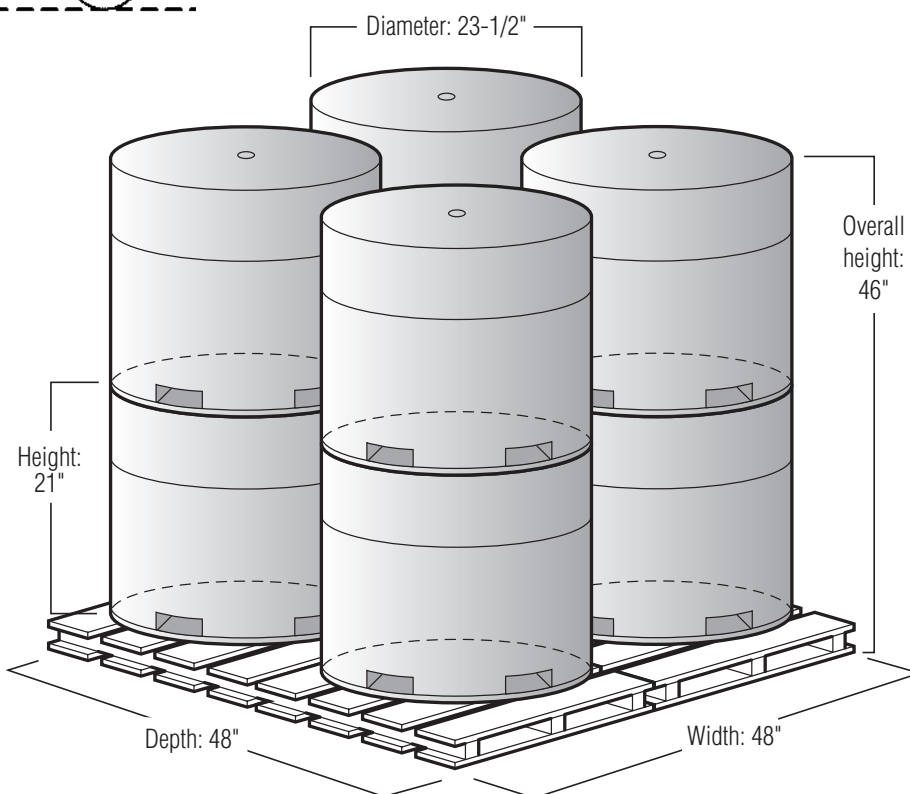
Steel Solid Wires

Recyclable ROBOPAK® 300/600/700/950

- Tangle-free feeding, no flip wire
- Compact drum to reduce floor-space requirements
- ROBOPAK protects wire from manufacturing environment (dust, spatter, oil, etc.)
- Can be located away from the weld station for convenient change over
- No payoff cone required, connectors and conduit attach directly to lid
- Available in: ☒ Quantum Arc ☒ QCL



950 Weight: 1900 lbs.
600 Weight: 2400 lbs.
700 Weight: 1400 lbs. (1/16 only)



300 Weight: 2400

How AWS Classifies Aluminum

ER4943

R=Rod

ER=Electrode or Rod

Specific Alloy

Modification of Alloy

Alloy Series

Alloy Series

- 1 - Pure Al
- 2 - Cu
- 3 - Mn
- 4 - Si
- 5 - Mg
- 6 - Mg₂Si
- 7 - Zn
- 8 - Other Elements

Aluminum Wires

MaxalMig ER1100

Benefits:

- highest ductility/formability
- higher electrical and thermal conductivity
- excellent corrosion resistance
- good hot cracking sensitivity in most applications

Typical Applications:

- electrical conductors
- chemical storage tanks
- piping and tubing for chemicals
- refrigeration

Typical Weld Metal Chemistry:

Silicon+Iron shall not exceed...	0.95
Copper	0.05-0.20
Manganese	0.05
Magnesium	—
Zinc	0.10
Titanium	—
Beryllium	< 0.0003
Others Total	0.15
Aluminum.....	99.0

Typical Mechanical Properties (AW):

Tensile Strength (psi)	13,500 (90 MPa)
Yield Strength (psi)	—
Elongation % in 2" (50mm)	40%

Suggested GMAW welding procedures:

Base Material		Wire Feed		
Diameter	Thickness	Amps	Volts	Speed (ipm)
0.030"/0.8 mm	1/16" (1.6mm)	90	20	260
	3/32" (2.4mm)	110	22	350
	1/8" (3.2mm)	130	23	450
	3/16" (4.8mm)	150	24	550
0.035"/0.9mm	1/4" (6.4mm)	175	24	650
	1/8" (3.2mm)	130	24	400
	1/4" (6.4mm)	170	25	500
	3/32" (2.4mm)	110	25	170
0.047"/1.2mm	1/8" (3.2mm)	150	26	270
	1/4" (6.4mm)	190	26	320
	3/8" (9.5mm)	220	27	390
	1/4" (6.4mm)	200	26	170
0.062"/1.6mm	3/8" (9.5mm)	230	27	200
	1/2" (12.7mm)	260	28	240
	3/4" (19.1mm)	280	29	260
	1.00" (25.4mm)	300	30	280

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER1100
- ASME SFA 5.10, ER1100
- AWS A5.01, Class S1, Schedule F
- CWB
- CE

MaxalMig ER4043

Benefits:

- moderate strength (28ksi/190Mpa typical)
- low melting temperature and high fluidity
- minimizes hot cracking and distortion
- clean, bright welds

Typical Applications:

- sport products - scooters/bicycles
- general repair and maintenance
- automotive/motorcycle frames and wheels
- welding 6XXX alloys

Typical Weld Metal Chemistry:

Silicon	4.5-6.0
Iron	0.80
Copper	0.30
Manganese	0.05
Magnesium	0.05
Chromium	—
Zinc	0.10
Titanium	0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum.....	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	28,000 (190 MPa)
Yield Strength (psi)	12,000 (80 MPa)
Elongation % in 2" (50mm)	24%

Suggested GMAW welding procedures:

Base Material		Wire Feed		
Diameter	Thickness	Amps	Volts	Speed (ipm)
0.030"/0.8 mm	1/16" (1.6mm)	90	20	260
	3/32" (2.4mm)	110	22	350
	1/8" (3.2mm)	130	23	450
	3/16" (4.8mm)	150	24	550
0.035"/0.9mm	1/4" (6.4mm)	175	24	650
	1/8" (3.2mm)	130	24	400
	1/4" (6.4mm)	170	25	500
	3/32" (2.4mm)	110	25	170
0.047"/1.2mm	1/8" (3.2mm)	150	26	270
	1/4" (6.4mm)	190	26	320
	3/8" (9.5mm)	220	27	390
	1/4" (6.4mm)	200	26	170
0.062"/1.6mm	3/8" (9.5mm)	230	27	200
	1/2" (12.7mm)	260	28	240
	3/4" (19.1mm)	280	29	260
	1.00" (25.4mm)	300	30	280

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER4043
- ASME SFA 5.10, ER4043
- AWS A5.01, Class S1, Schedule F
- CWB
- CE

MaxalMig ER4047

Benefits:

- low melting temperature and high fluidity
- excellent wetting action for joint sealing applications
- lowest shrinkage rate/reduced distortion
- minimizes hot cracking

Typical Applications:

- welding 6XXX alloys
- radiator and air conditioning components
- general repair and maintenance
- water and gas tight applications

Typical Weld Metal Chemistry:

Silicon	11.0-13.0
Iron	0.80
Copper	0.30
Manganese	0.15
Magnesium	—
Chromium	—
Zinc	0.10
Titanium	—
Beryllium	< 0.0003
Others Total	0.15
Aluminum.....	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	38,000 (260 MPa)
Yield Strength (psi)	20,000 (135 MPa)
Elongation % in 2" (50mm)	11%

Suggested GMAW welding procedures:

Base Material		Wire Feed		
Diameter	Thickness	Amps	Volts	Speed (ipm)
0.030"/0.8 mm	1/16" (1.6mm)	90	20	260
	3/32" (2.4mm)	110	22	350
	1/8" (3.2mm)	130	23	450
	3/16" (4.8mm)	150	24	550
0.035"/0.9mm	1/4" (6.4mm)	175	24	650
	1/8" (3.2mm)	130	24	400
	1/4" (6.4mm)	170	25	500
	3/32" (2.4mm)	110	25	170
0.047"/1.2mm	1/8" (3.2mm)	150	26	270
	1/4" (6.4mm)	190	26	320
	3/8" (9.5mm)	220	27	390
	1/4" (6.4mm)	200	26	170
0.062"/1.6mm	3/8" (9.5mm)	230	27	200
	1/2" (12.7mm)	260	28	240
	3/4" (19.1mm)	280	29	260
	1.00" (25.4mm)	300	30	280

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER4047
- ASME SFA 5.10, ER4047
- AWS A5.01, Class S1, Schedule F
- CE

MaxalMig ER4943

Benefits:

- 25% higher UTS and 50% higher yield strength than 4043 in as-welded condition
- moderate to high strength (35ksi/240mpa typical)
- low melting temperature and high fluidity
- heat treatable

Typical Applications:

- current 4043 and 4643 applications, 1XXX, 3XXX, 5XXX with less than 3.0% Mg (example 5052), and 6XXX
- post weld aged, post weld heatreat & age applications
- automotive/motorcycle frames and wheels
- ladders and furniture

Typical Weld Metal Chemistry:

Silicon	5.0-6.0
Iron	0.40
Copper	0.10
Manganese	0.05
Magnesium	0.30-0.50
Chromium	—
Zinc	0.10
Titanium	0.15
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	35,000 (240 MPa)
Yield Strength (psi)	18,000 (125 MPa)
Elongation % in 2" (50mm)	16%

Suggested GMAW welding procedures:

Diameter	Base Material		Wire Feed		
	Thickness	Amps	Volts	Speed (ipm)	
0.030"/0.8 mm	1/16" (1.6mm)	90	20	260	
	3/32" (2.4mm)	110	22	350	
	1/8" (3.2mm)	130	23	450	
	3/16" (4.8mm)	150	24	550	
	1/4" (6.4mm)	175	24	650	
0.035"/0.9mm	1/8" (3.2mm)	130	24	400	
	1/4" (6.4mm)	170	25	500	
0.047"/1.2mm	3/32" (2.4mm)	110	25	170	
	1/8" (3.2mm)	150	26	270	
	1/4" (6.4mm)	190	26	320	
0.062"/1.6mm	3/8" (9.5mm)	220	27	390	
	1/4" (6.4mm)	200	26	170	
	3/8" (9.5mm)	230	27	200	
	1/2" (12.7mm)	260	28	240	
	3/4" (19.1mm)	280	29	260	
	1.00" (25.4mm)	300	30	280	

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER4943
- ASME SFA 5.10, ER4943
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE

MaxalMig ER5183

Benefits:

- very high strength
- high ductility, fatigue strength and toughness
- very good color match after anodizing with 5XXX/6XXX base materials
- excellent corrosion resistance when welded to 5083 base metal

Typical Applications:

- applications using base metal with 40ksi (275 Mpa) minimum (5083)
- shipbuilding
- pressure vessels
- cryogenic tanks

Typical Weld Metal Chemistry:

Silicon	0.40
Iron	0.40
Copper	0.10
Manganese	0.50-1.0
Magnesium	4.3-5.2
Chromium	0.05-0.25
Zinc	0.25
Titanium	0.15
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	41,000 (280 MPa)
Yield Strength (psi)	22,000 (150 MPa)
Elongation % in 2" (50mm)	12%

Suggested GMAW welding procedures:

Diameter	Base Material		Wire Feed		
	Thickness	Amps	Volts	Speed (ipm)	
0.030"/0.8 mm	1/16" (1.6mm)	100	18	300	
	3/32" (2.4mm)	120	21	400	
	1/8" (3.2mm)	140	21	500	
	3/16" (4.8mm)	160	22	600	
	1/4" (6.4mm)	185	22	700	
0.035"/0.9mm	1/8" (3.2mm)	140	22	450	
	1/4" (6.4mm)	180	23	600	
0.047"/1.2mm	3/32" (2.4mm)	120	24	220	
	1/8" (3.2mm)	160	25	330	
	1/4" (6.4mm)	220	25	370	
0.062"/1.6mm	3/8" (9.5mm)	230	25	450	
	1/4" (6.4mm)	210	24	200	
	3/8" (9.5mm)	240	25	230	
	1/2" (12.7mm)	270	26	270	
	3/4" (19.1mm)	290	27	300	
	1.00" (25.4mm)	310	28	320	

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER5183
- ASME SFA 5.10, ER5183
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE
- VdTUV
- DB

MaxalMig ER5356

Benefits:

- high strength
- high ductility, fatigue strength and toughness
- very good color match after anodizing with 5XXX/6XXX base materials

Typical Applications:

- applications using base metal 5086
- truck frames
- shipbuilding
- railcar
- bus panels

Typical Weld Metal Chemistry:

Silicon	0.25
Iron	0.40
Copper	0.10
Manganese	0.05-0.20
Magnesium	4.5-5.5
Chromium	0.05-0.20
Zinc	0.10
Titanium	0.06-0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	38,000 (260 MPa)
Yield Strength (psi)	21,000 (145 MPa)
Elongation % in 2" (50mm)	13%

Suggested GMAW welding procedures:

Diameter	Base Material		Wire Feed		
	Thickness	Amps	Volts	Speed (ipm)	
0.030"/0.8 mm	1/16" (1.6mm)	100	18	300	
	3/32" (2.4mm)	120	21	400	
	1/8" (3.2mm)	140	21	500	
	3/16" (4.8mm)	160	22	600	
	1/4" (6.4mm)	185	22	700	
0.035"/0.9mm	1/8" (3.2mm)	140	22	450	
	1/4" (6.4mm)	180	23	600	
0.047"/1.2mm	3/32" (2.4mm)	120	24	220	
	1/8" (3.2mm)	160	25	330	
	1/4" (6.4mm)	220	25	370	
0.062"/1.6mm	3/8" (9.5mm)	230	25	450	
	1/4" (6.4mm)	210	24	200	
	3/8" (9.5mm)	240	25	230	
	1/2" (12.7mm)	270	26	270	
	3/4" (19.1mm)	290	27	300	
	1.00" (25.4mm)	310	28	320	

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER5356
- ASME SFA 5.10, ER5356
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- VdTUV
- CE
- DB

Aluminum Wires

MaxalMig ER5554

Benefits:

- moderate to high strength (33ksi/225 Mpa typical)
- developed for elevated temperature applications
- very good color match after anodizing with 5XXX/6XXX base materials
- excellent corrosion resistance

Typical Applications:

- applications using 5454 base metal
- automotive
- heat exchangers

Typical Weld Metal Chemistry:

Silicon	0.25
Iron	0.40
Copper	0.10
Manganese	0.50-1.0
Magnesium	2.4-3.0
Chromium	0.05-0.20
Zinc	0.25
Titanium	0.05-0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	33,000 (225 MPa)
Yield Strength (psi)	17,000 (115 MPa)
Elongation % in 2" (50mm)	15%

Suggested GMAW welding procedures:

Diameter	Base Material		Amps	Volts	Wire Feed Speed (ipm)
	Thickness				
0.030"/0.8 mm	1/16" (1.6mm)		100	18	300
	3/32" (2.4mm)		120	21	400
	1/8" (3.2mm)		140	21	500
	3/16" (4.8mm)		160	22	600
	1/4" (6.4mm)		185	22	700
0.035"/0.9mm	1/8" (3.2mm)		140	22	450
	1/4" (6.4mm)		180	23	600
	3/32" (2.4mm)		120	24	220
0.047"/1.2mm	1/8" (3.2mm)		160	25	330
	1/4" (6.4mm)		220	25	370
	3/8" (9.5mm)		230	25	450
	1/4" (6.4mm)		210	24	200
	3/8" (9.5mm)		240	25	230
0.062"/1.6mm	1/2" (12.7mm)		270	26	270
	3/4" (19.1mm)		290	27	300
	1.00" (25.4mm)		310	28	320

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER5554
- ASME SFA 5.10, ER5554
- AWS A5.01, Class S1, Schedule F
- CWB
- CE

MaxalMig ER5556

Benefits:

- very high strength
- high ductility, fatigue strength and toughness
- very good color match after anodizing with 5XXX/6XXX base materials
- excellent corrosion resistance when welded to 5456 base metal

Typical Applications:

- applications using base metal with 42ksi (275 Mpa) minimum 5456
- pressure vessels

Typical Weld Metal Chemistry:

Silicon	0.25
Iron	0.40
Copper	0.10
Manganese	0.50-1.0
Magnesium	4.7-5.5
Chromium	0.05-0.20
Zinc	0.25
Titanium	0.05-0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	43,000 (295 MPa)
Yield Strength (psi)	23,000 (155 MPa)
Elongation % in 2" (50mm)	12%

Suggested GMAW welding procedures:

Diameter	Base Material		Amps	Volts	Wire Feed Speed (ipm)
	Thickness				
0.030"/0.8 mm	1/16" (1.6mm)		100	18	300
	3/32" (2.4mm)		120	21	400
	1/8" (3.2mm)		140	21	500
	3/16" (4.8mm)		160	22	600
	1/4" (6.4mm)		185	22	700
0.035"/0.9mm	1/8" (3.2mm)		140	22	450
	1/4" (6.4mm)		180	23	600
	3/32" (2.4mm)		120	24	220
0.047"/1.2mm	1/8" (3.2mm)		160	25	330
	1/4" (6.4mm)		220	25	370
	3/8" (9.5mm)		230	25	450
	1/4" (6.4mm)		210	24	200
	3/8" (9.5mm)		240	25	230
0.062"/1.6mm	1/2" (12.7mm)		270	26	270
	3/4" (19.1mm)		290	27	300
	1.00" (25.4mm)		310	28	320

Shielding Gas: 100% Ar, 75% He/25% Ar

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.10, ER5556
- ASME SFA 5.10, ER5556
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE

MaxalTig R1100

Benefits:

- highest ductility/formability
- higher electrical and thermal conductivity
- excellent corrosion resistance
- good hot cracking sensitivity in most applications

Typical Applications:

- electrical conductors
- chemical storage tanks
- piping and tubing for chemicals
- refrigeration

Typical Weld Metal Chemistry:

Silicon+Iron shall not exceed ...	0.95
Copper	0.05-0.20
Manganese	0.05
Magnesium	—
Zinc	0.10
Titanium	—
Beryllium	< 0.0003
Others Total	0.15
Aluminum	99.0

Typical Mechanical Properties (AW):

Tensile Strength (psi)	13,500 (90 MPa)
Yield Strength (psi)	—
Elongation % in 2" (50mm)	40%

Suggested GTAW welding procedures:

Rod/Tungsten Diameter	Base Mat.		Gas Cup Diameter	Arc Travel Speed
	Thickness	Amps		
1/16" (1.6mm)	.062" (1.6mm)	60-100	3/8" (9.5mm)	8-10 ipm
3/32" (2.4mm)	.094" (2.4mm)	85-115	3/8" (9.5mm)	10-12 ipm
.125" (3.2mm)	.1875" (4.8mm)	155-190	7/16" (11.1mm)	10-12 ipm
.156" (4.0mm)	.250" (6.4mm)	190-275	1/2" (12.7mm)	8-10 ipm
.187" (4.8mm)	.375" (9.5mm)	240-375	5/8" (15.9mm)	14-32 ipm

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, ER1100
- ASME SFA 5.10, ER1100
- AWS A5.01, Class S1, Schedule F
- CWB
- CE

MaxalTig R4043

Benefits:

- moderate strength (28ksi/190Mpa typical)
- low melting temperature and high fluidity
- minimizes hot cracking and distortion
- clean, bright welds

Typical Applications:

- sport products - scooters/bicycles
- general repair and maintenance
- automotive/motorcycle frames and wheels
- welding 6XXX alloys

Typical Weld Metal Chemistry:

Silicon	4.5-6.0
Iron	0.80
Copper	0.30
Manganese	0.05
Magnesium	0.05
Chromium	—
Zinc	0.10
Titanium	0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	28,000 (190 MPa)
Yield Strength (psi)	12,000 (80 MPa)
Elongation % in 2" (50mm)	24%

Suggested GTAW welding procedures:

Rod/Tungsten	Base Mat.	Gas Cup	Arc Travel
Diameter	Thickness	Amps	Speed
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm) 8-10 ipm
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm) 10-12 ipm
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(0.4mm) 10-12 ipm
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm) 8-10 ipm
.187"(1.6mm)	.375"(9.5mm)	240-375	5/8"(15.9mm) 14-32 ipm

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, ER4043
- ASME SFA 5.10, ER4043
- AWS A5.01, Class S1, Schedule F
- CWB
- CE

MaxalTig R4047

Benefits:

- low melting temperature and high fluidity
- excellent wetting action for joint sealing applications
- lowest shrinkage rate/reduced distortion
- minimizes hot cracking

Typical Applications:

- welding 6XXX alloys
- radiator and air conditioning components
- general repair and maintenance
- water and gas tight applications

Typical Weld Metal Chemistry:

Silicon	11.0-13.0
Iron	0.80
Copper	0.30
Manganese	0.15
Magnesium	—
Chromium	—
Zinc	0.10
Titanium	—
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	38,000 (260 MPa)
Yield Strength (psi)	20,000 (135 MPa)
Elongation % in 2" (50mm)	11%

Suggested GTAW welding procedures:

Rod/Tungsten	Base Mat.	Gas Cup	Arc Travel
Diameter	Thickness	Amps	Speed
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm) 8-10 ipm
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm) 10-12 ipm
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(0.4mm) 10-12 ipm
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm) 8-10 ipm
.187"(1.6mm)	.375"(9.5mm)	240-375	5/8"(15.9mm) 14-32 ipm

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, ER4047
- ASME SFA 5.10, ER4047
- AWS A5.01, Class S1, Schedule F
- CE

MaxalTig R4943

Benefits:

- 25% higher UTS and 50% higher yield strength than 4043 in as-welded condition
- moderate to high strength (35ksi/240Mpa typical)
- low melting temperature and high fluidity
- heat treatable

Typical Applications:

- current 4043 and 4643 applications, 1XXX, 3XXX, 5XXX with less than 3.0% Mg (example 5052), and 6XXX
- post weld aged, post weld heatreat & age applications
- automotive/motorcycle frames and wheels
- ladders and furniture

Typical Weld Metal Chemistry:

Silicon	5.0-6.0
Iron	0.40
Copper	0.10
Manganese	0.05
Magnesium	0.30-0.50
Chromium	—
Zinc	0.10
Titanium	0.15
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	35,000 (240 MPa)
Yield Strength (psi)	18,000 (125 MPa)
Elongation % in 2" (50mm)	16%

Suggested GTAW welding procedures:

Rod/Tungsten	Base Mat.	Gas Cup	Arc Travel
Diameter	Thickness	Amps	Speed
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm) 8-10 ipm
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm) 10-12 ipm
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(0.4mm) 10-12 ipm
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm) 8-10 ipm
.187"(1.6mm)	.375"(9.5mm)	240-375	5/8"(15.9mm) 14-32 ipm

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, ER4943
- ASME SFA 5.10, ER4943
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE

Aluminum Wires

MaxalTig R5183

Benefits:

- very high strength
- high ductility, fatigue strength and toughness
- very good color match after anodizing with 5XXX/6XXX base materials
- excellent corrosion resistance when welded to 5083 base metal

Typical Applications:

- applications using base metal with 40ksi (275 Mpa) minimum (5083)
- shipbuilding
- pressure vessels
- cryogenic tanks

Typical Weld Metal Chemistry:

Silicon	0.40
Iron	0.40
Copper	0.10
Manganese	0.50-1.0
Magnesium	4.3-5.2
Chromium	0.05-0.25
Zinc	0.25
Titanium	0.15
Beryllium	< 0.0003
Others Total	0.15
Aluminum.....	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	41,000 (280 MPa)
Yield Strength (psi)	22,000 (150 MPa)
Elongation % in 2" (50mm)	12%

Suggested GTAW welding procedures:

Rod/Tungsten		Base Mat.		Gas Cup		Arc Travel	
Diameter	Thickness	Amps	Diameter	Speed			
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm)	8-10 ipm			
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm)	10-12 ipm			
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(12.7mm)	8-10 ipm			
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm)	8-10 ipm			
.187"(1.6mm)	.375"(9.5mm)	240-375	5/8"(15.9mm)	14-32 ipm			

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, R5183
- ASME SFA 5.10, R5183
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE

MaxalTig R5356

Benefits:

- high strength
- high ductility, fatigue strength and toughness
- very good color match after anodizing with 5XXX/6XXX base materials

Typical Applications:

- applications using base metal 5086
- truck frames
- shipbuilding
- railcar
- bus panels

Typical Weld Metal Chemistry:

Silicon	0.25
Iron	0.40
Copper	0.10
Manganese	0.05-0.20
Magnesium	4.5-5.5
Chromium	0.05-0.20
Zinc	0.10
Titanium	0.06-0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum.....	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	38,000 (260 MPa)
Yield Strength (psi)	21,000 (145 MPa)
Elongation % in 2" (50mm)	13%

Suggested GTAW welding procedures:

Rod/Tungsten		Base Mat.		Gas Cup		Arc Travel	
Diameter	Thickness	Amps	Diameter	Speed			
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm)	8-10 ipm			
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm)	10-12 ipm			
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(12.7mm)	8-10 ipm			
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm)	8-10 ipm			
.187"(1.6mm)	.375"(9.5mm)	240-375	5/8"(15.9mm)	14-32 ipm			

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, R5356
- ASME SFA 5.10, R5356
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE

MaxalTig R5554

Benefits:

- moderate to high strength (33ksi/225 Mpa typical)
- developed for elevated temperature applications
- very good color match after anodizing with 5XXX/6XXX base materials
- excellent corrosion resistance

Typical Applications:

- applications using 5454 base metal
- automotive
- heat exchangers

Typical Weld Metal Chemistry:

Silicon	0.25
Iron	0.40
Copper	0.10
Manganese	0.50-1.0
Magnesium	2.4-3.0
Chromium	0.05-0.20
Zinc	0.25
Titanium	0.05-0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum.....	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	33,000 (225 MPa)
Yield Strength (psi)	17,000 (115 MPa)
Elongation % in 2" (50mm)	15%

Suggested GTAW welding procedures:

Rod/Tungsten		Base Mat.		Gas Cup		Arc Travel	
Diameter	Thickness	Amps	Diameter	Speed			
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm)	8-10 ipm			
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm)	10-12 ipm			
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(12.7mm)	8-10 ipm			
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm)	8-10 ipm			
.187"(1.6mm)	.375"(9.5mm)	240-375	5/8"(15.9mm)	14-32 ipm			

Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

- AWS A5.10, ER5554
- ASME SFA 5.10, ER5554
- AWS A5.01, Class S1, Schedule F
- CWB
- CE

MaxalTig R5556

Benefits:

- very high strength
- high ductility, fatigue strength and toughness
- very good color match after anodizing with 5XXX/6XXX base materials
- excellent corrosion resistance when welded to 5456 base metal

Typical Applications:

- applications using base metal with 42ksi (275 MPa) minimum 5456
- pressure vessels

Typical Weld Metal Chemistry:

Silicon	0.25
Iron	0.40
Copper	0.10
Manganese	0.50-1.0
Magnesium	4.7-5.5
Chromium	0.05-0.20
Zinc	0.25
Titanium	0.05-0.20
Beryllium	< 0.0003
Others Total	0.15
Aluminum	remainder

Typical Mechanical Properties (AW):

Tensile Strength (psi)	43,000 (295 MPa)
Yield Strength (psi)	23,000 (155 MPa)
Elongation % in 2" (50mm)	12%

Suggested GTAW welding procedures:

Rod/Tungsten Diameter	Base Mat. Thickness	Amps	Gas Cup Diameter	Arc Travel Speed
1/16"(1.6mm)	.062"(1.6mm)	60-100	3/8"(9.5mm)	8-10 ipm
3/32"(2.4mm)	.094"(2.4mm)	85-115	3/8"(9.5mm)	10-12 ipm
.125"(3.2mm)	.1875"(4.8mm)	155-190	7/16"(11.1mm)	10-12 ipm
.156"(4.0mm)	.250"(6.4mm)	190-275	1/2"(12.7mm)	8-10 ipm
.187"(4.8mm)	.375"(9.5mm)	240-375	5/8"(15.9mm)	14-32 ipm

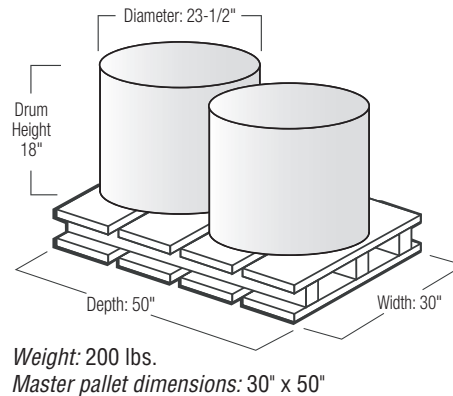
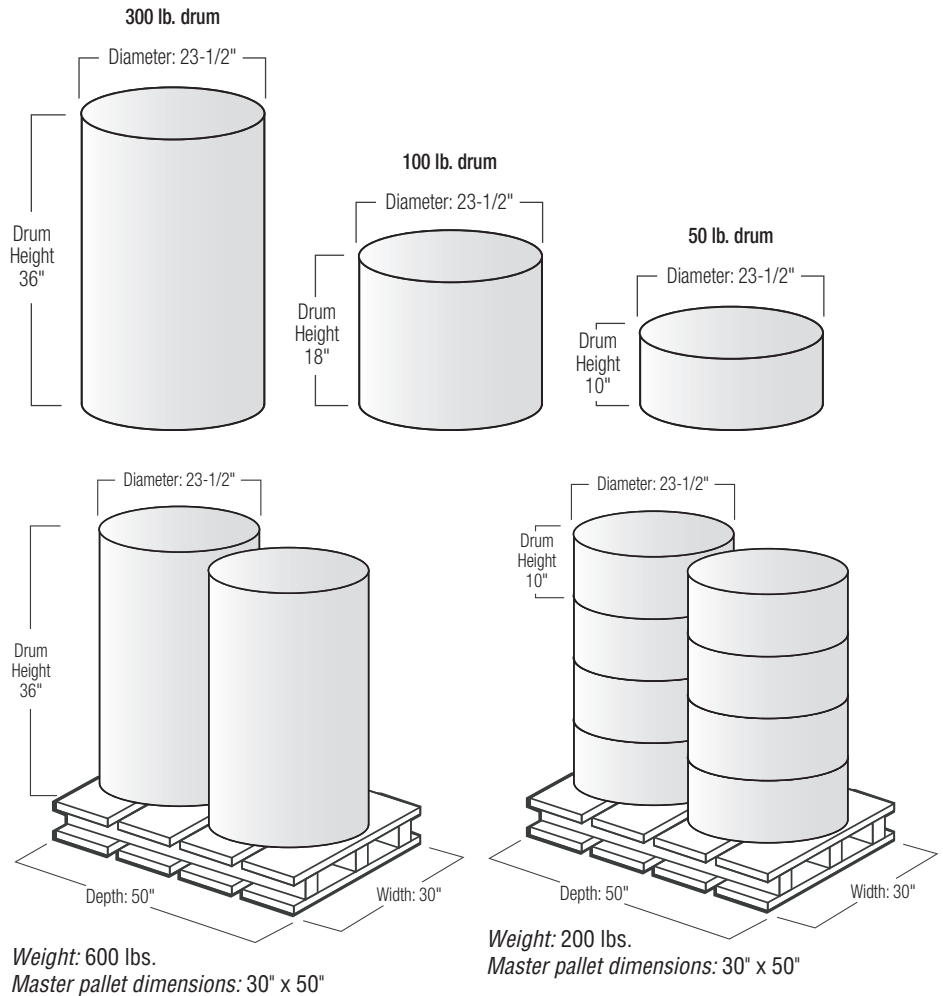
Shielding Gas: 100% Ar, 25% He/75% Ar

Type of Current: AC

Approvals and Conformances:

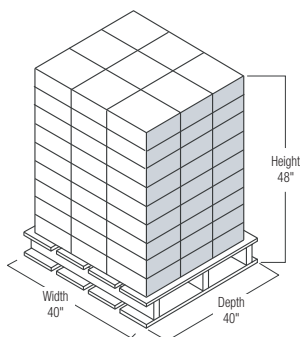
- AWS A5.10, R5556
- ASME SFA 5.10, R5556
- AWS A5.01, Class S1, Schedule F
- CWB
- ABS
- CE

Maxal PAC Drum

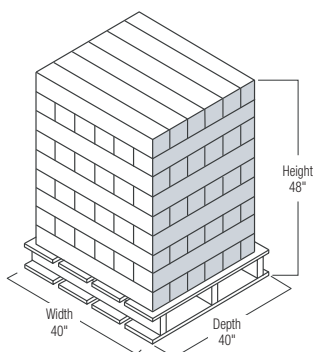


Aluminum Wires

Pallet Information

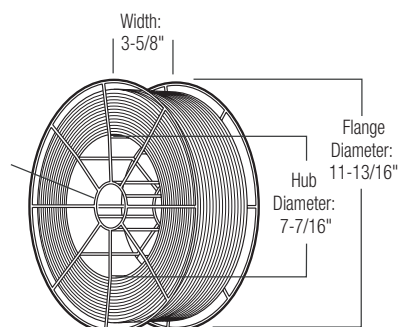


1-lb. Carton Weight: 1,658 lbs. gross; 1,458 lbs. net
 16-lb. Carton Weight: 1,496 lbs. gross; 1,296 lbs. net
 22-lb. Carton Weight: 1,982 lbs. gross; 1,782 lbs. net
 Stacking sequence: 3 wide, 3 deep and 9 high

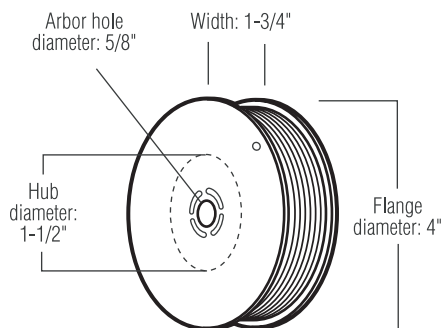


Weight: 2,360 lbs. gross; 2,160 lbs. net
 Stacking sequence: 6 wide, 1 deep and 9 high

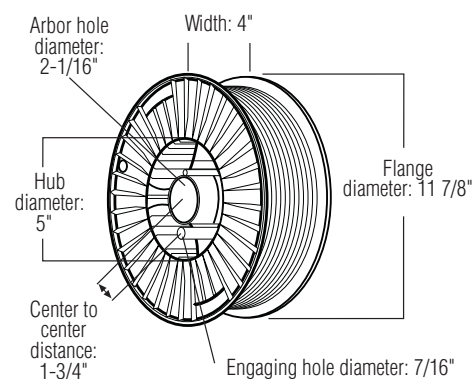
16-lb. Wire Basket & 1-lb., 5-lb., 16-lb., 22-lb. Plastic Spool



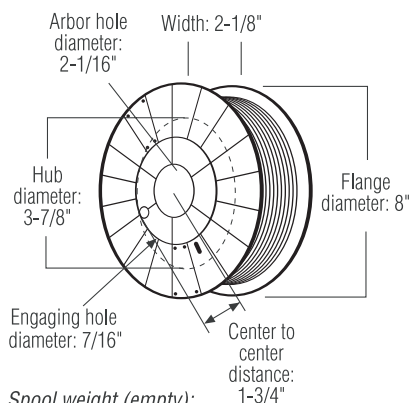
16-lb.



1-lb.

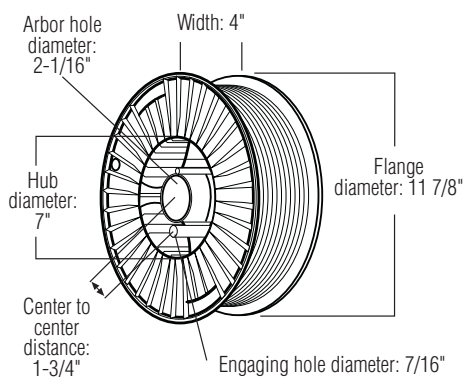


22-lb.



Spool weight (empty):
 0.8 lbs.

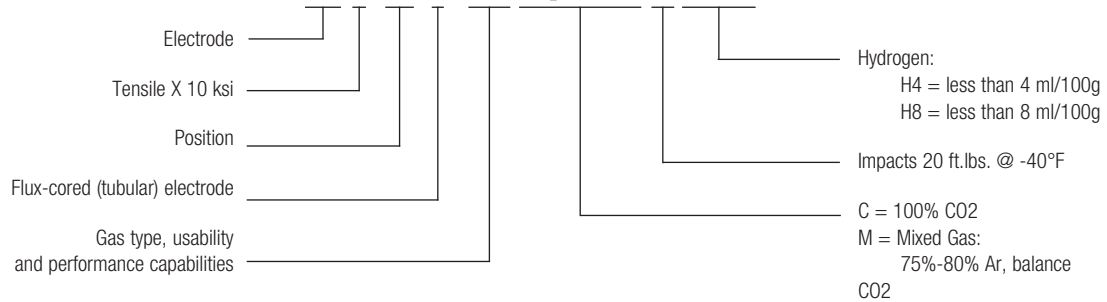
5-lb.



16-lb.

How AWS Classifies Mild Steel Flux-Cored (Tubular) Wires, FCAW Process (AWS A5.20)

E70T-1C/MJH8



Position of Welding, Shielding, Polarity, and Application Requirements

AWS Classification	Welding Position ^a	Shielding ^a	Current ^b	Application ^c	AWS Classification	Welding Position ^a	Shielding ^a	Current ^b	Application ^c
E70T-1C	H and F	CO ₂	DCEP	M	E70T-9C	H and F	CO ₂	DCEP	M
E70T-1M	H and F	75-80% Ar/bal CO ₂	DCEP	M	E70T-9M	H and F	75-80% Ar/bal CO ₂	DCEP	M
E71T-1C	H, F, VU, OH	CO ₂	DCEP	M	E71T-9C	H, F, VU, OH	CO ₂	DCEP	M
E71T-1M	H, F, VU, OH	75-80% Ar/bal CO ₂	DCEP	M	E71T-9M	H, F, VU, OH	75-80% Ar/bal CO ₂	DCEP	M
E70T-2C	H and F	CO ₂	DCEP	S	E70T-10	H and F	None	DCEN	S
E70T-2M	H and F	75-80% Ar/bal CO ₂	DCEP	S	E70T-11	H and F	None	DCEN	M
E71T-2C	H, F, VU, OH	CO ₂	DCEP	S	E71T-11	H, F, VD, OH	None	DCEN	M
E71T-2M	H, F, VU, OH	75-80% Ar/bal CO ₂	DCEP	S	E70T-12C	H and F	CO ₂	DCEP	M
E70T-3	H and F	None	DCEP	S	E70T-12M	H and F	75-80% Ar/bal CO ₂	DCEP	M
E70T-4	H and F	None	DCEP	M	E71T-12C	H, F, VU, OH	CO ₂	DCEP	M
E70T-5C	H and F	CO ₂	DCEP	M	E71T-12M	H, F, VU, OH	75-80% Ar/bal CO ₂	DCEP	M
E70T-5M	H and F	75-80% Ar/bal CO ₂	DCEP	M	E61T-13	H, F, VD, OH	None	DCEN	S
E71T-5C	H, F, VU, OH	CO ₂	DCEP or DCEN ^d	M	E71T-13	H, F, VD, OH	None	DCEN	S
E71T-5M	H, F, VU, OH	75-80% Ar/bal CO ₂	DCEP or DCEN ^d	M	E71T-14	H, F, VD, OH	None	DCEN	S
E70T-6	H and F	None	DCEP	M	EX0T-G	H and F	Not Specified	Not Specified	M
E70T-7	H and F	None	DCEN	M	EX1T-G	H, F, VD or VU, OH	Not Specified	Not Specified	M
E71T-7	H, F, VU, OH	None	DCEN	M	EX0T-GS	H and F	Not Specified	Not Specified	S
E70T-8	H and F	None	DCEN	M	EX1T-GS	H, F, VD or VU, OH	Not Specified	Not Specified	S
E71T-8	H, F, VU, OH	None	DCEN	M					

a. H = horizontal position; F = flat position; OH = overhead position; VD = vertical position with downward progression; VU = vertical position with upward progression

b. Properties of weld metal from electrodes that are used with external gas shielding (EX0T-1C, EX0T-1M, EX0T-2C, EX0T-2M, EX0T-5C, EX0T-5M, EX0T-9C, EX0T-9M, EX0T-12C, and EX0T-12M) vary according to the Shielding Gas employed. Electrodes classified with the specified Shielding Gas should not be used with other shielding gases without first consulting the manufacturer of the electrode.

c. The term "DCEP" refers to direct current electrode positive (dc, reverse polarity). The term "DCEN" refers to direct current electrode negative (dc, straight polarity).

d. M = single- or multiple-pass; S = single-pass only

e. Some E71T-5C and E71T-5M electrodes may be recommended for use on DCEN for improved out-of-position welding.

FabCO® RXR

FLAT & HORIZONTAL

AWS E70T-1C, E70T-9C

Benefits:

- outstanding welding performance results in excellent operator appeal
- smooth and stable arc produces an easy to control puddle
- easy slag removal reduces cleanup time
- very flexible amperage range promotes versatility

Typical Applications:

- storage vessels
- earthmoving equipment
- heavy fabrication
- railcar

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.66
Silicon	0.64
Phosphorus	0.012
Sulphur	0.009

Typical Mechanical Properties (AW):

Tensile Strength (psi)	86,000 (592 MPa)
Yield Strength (psi)	75,000 (518 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	30 ft.lb. (41J)
Avg. at -20°F (-30°C)	25 ft.lb. (34J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-250	25-29	3/4" (19 mm)
1/16" (1.6 mm)	200-375	25-29	3/4" (19 mm)
5/64" (2.0 mm)	250-400	26-33	1" (25 mm)
3/32" (2.4 mm)	350-550	26-36	1" (25 mm)
7/64" (2.8 mm)	500-700	30-36	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-1C, E70T-9C
- AWS A5.20M, E490T-1C, E490T-9C
- ASME SFA 5.20, E70T-1C, E70T-9C
- ABS, 100% CO₂, 2YSA H10
- CWB, 100% CO₂, E492T-9-H8 (1.2 mm - 2.4 mm diameter electrodes)
- AWS D1.8/D1.8M, 100% CO₂, 1/16" (1.6 mm) & 3/32" (2.4 mm) diameter electrodes
- EN17632-B: T55 2 T1 0 C A H10
- CE Marked per CPR 305/2011 (1.2 mm - 2.4 mm diameter electrodes)
- MIL-E-24403/1, MIL-70T-1C

FabCO® TR-70

FLAT & HORIZONTAL

AWS E70T-1C H8, E70T-9C H8

Benefits:

- low fume generation rates enhance welder appeal
- high deposition rates help increase productivity
- easy slag removal reduces cleanup time
- good bead contour assists in producing quality welds

Typical Applications:

- earthmoving equipment
- steel structures
- heavy fabrication
- railcar

Typical Weld Metal Chemistry:

Carbon	0.02
Manganese	1.62
Silicon	0.57
Phosphorus	0.013
Sulphur	0.006

Typical Diffusible Hydrogen: 6.3 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000 (579 MPa)
Yield Strength (psi)	77,000 (531 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	55 ft.lb. (75J)
Avg. at -20°F (-30°C)	44 ft.lb. (60J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-280	24-30	1/2" (13 mm)
.052" (1.4 mm)	150-350	24-32	3/4" (19 mm)
1/16" (1.6 mm)	170-350	25-34	1" (25 mm)
5/64" (2.0 mm)	250-550	26-34	1" (25 mm)
3/32" (2.4 mm)	350-650	27-40	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-1C H8, E70T-9C H8
- AWS A5.20M, E490T-1C H8, E490T-9C H8
- ASME SFA 5.20, E70T-1C H8, E70T-9C H8
- ABS, 100% CO₂, E70T-1CJ
- CWB, 100% CO₂, E492T-9-H8
- AWS D1.8 Conformance, 100% CO₂, (1/16-3/32" diameter electrodes)

FabCO® 70XHP

FLAT & HORIZONTAL

AWS E70T-1C/MJ H8, E70T-9C/MJ H8, E70T-12CJ H8

Benefits:

- high deposition rates increase productivity
- low fume generation rate improves welding environment and operator appeal
- maintains CVN toughness after stress relief: Exceeds 20 ft lbs (27J) CVN impact strength at -40F (-40C) after 2 hrs of stress relief at 1150F

Typical Applications:

- non-alloyed and fine grain steels
- earthmoving equipment
- shipbuilding
- storage vessels

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.04	0.03
Manganese	1.47	1.70
Silicon	0.52	0.52
Phosphorus	0.010	0.008
Sulphur	0.010	0.010

Typical Diffusible Hydrogen: 6.5 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000	85,000
	(558 MPa)	(586 MPa)
Yield Strength (psi)	68,000	72,000
	(469 MPa)	(496 MPa)
Elongation % in 2" (50mm)	28%	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	42 ft.lb. (57J)	40 ft.lb. (54J)
Avg. at -40°F (-40°C)	35 ft.lb. (47J)	30 ft.lb. (41J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	225-350	27-32	1" (25 mm)
5/64" (2.0 mm)	250-500	28-34	1" (25 mm)
3/32" (2.4 mm)	350-575	27-34	1" (25 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-1CJ H8, E70T-1MJ H8, E70T-9CJ H8, E70T-9MJ H8, E70T-12CJ H8
- AWS A5.20M, E490T-1CJ H8, E490T-1MJ H8, E490T-9CJ H8, E490T-9MJ H8, E490T-12CJ H8
- ASME SFA 5.20, E70T-1CJ H8, E70T-1MJ H8, E70T-9CJ H8, E70T-9MJ H8, E70T-12CJ H8
- CWB, 100% CO₂, E492T-12CJ-H8
- CWB, 75% Ar/25% CO₂, E492T-9MJ-H8
- EN17632-B: T55 2 T1 0 C/M A H10

FabCO® Premier 70

FLAT & HORIZONTAL

AWS E70T-1CJ H8, E70T-9CJ H8

Benefits:

- specially designed to weld over primer without porosity
- increased deposition rates compared to standard E70T-1 type products increase productivity
- minimal spatter and easy slag removal reduce or eliminate post-weld cleanup
- easy to set up and control

Typical Applications:

- structural steel
- shipbuilding
- heavy equipment
- general fabrication

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	1.24
Silicon	0.32
Phosphorus	0.013
Sulphur	0.012
Nickel.....	0.42

Typical Diffusible Hydrogen: 3.7 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000 (576 MPa)
Yield Strength (psi)	77,000 (528 MPa)
Elongation % in 2" (50mm)	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	111 ft.lb. (150J)
Avg. at -40°F (-40°C)	72 ft.lb. (98J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	175-300	25-32	3/4" (19 mm)
.052" (1.4 mm)	250-350	27-32	3/4" (19 mm)
1/16" (1.6 mm)	200-450	25-32	1" (25 mm)
5/64" (2.0 mm)	250-550	26-34	1" (25 mm)
3/32" (2.4 mm)	300-550	26-34	1-1/4" (32 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-1C H8, E70T-9CJ H8
- ASME SFA 5.20, E70T-1C, E70T-9CJ H8
- AWS A5.20M, E490T-1C H8, E490T-9CJ H8
- ABS, 100% CO₂, 3SA, 3YSA

FabCO® 72

FLAT & HORIZONTAL

AWS E70T-1C, E70T-9C

Benefits:

- excellent arc stability over entire current range increases operator appeal
- faster freezing slag and lower spatter when compared to TM-11, especially at lower amperage settings of current range
- fast freezing nature of slag facilitates welding on modestly inclined surfaces and girth welds
- surfaces are smooth and uniformly rippled, providing excellent bead appearance

Typical Applications:

- structural steel
- shipbuilding
- heavy equipment
- general fabrication

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.26
Silicon	0.62
Phosphorus	0.009
Sulphur	0.005

Typical Mechanical Properties (AW):

Tensile Strength (psi)	89,000 (612 MPa)
Yield Strength (psi)	78,000 (543 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	36 ft.lb. (49J)
Avg. at -20°F (-30°C)	26 ft.lb. (35J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	300-425	28-35	3/4" (19 mm)
5/64" (2.0 mm)	350-450	29-32	3/4" (19 mm)
3/32" (2.4 mm)	350-500	27-31	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-1C, E70T-9C
- AWS A5.20M, E490T-1C, E490T-9C
- ASME SFA 5.20, E70T-1C, E70T-9C
- ABS, 100% CO₂, E70T-1C
- Military Spec. MIL-E-24403/1, Class MIL-70T-1C
- CWB, 100% CO₂, E492T-9-H16

FabCO® 11

FLAT & HORIZONTAL

AWS E70T-1C

Benefits:

- better at higher amperage levels
- good weld bead geometry
- excellent at higher current levels
- slag freezes at a moderate rate, contributing to smooth, flat and uniformly rippled beads

Typical Applications:

- heavy equipment
- machinery
- structural components
- general fabrication

Typical Weld Metal Chemistry:

Carbon	0.08
Manganese	1.36
Silicon	0.78
Phosphorus	0.009
Sulphur	0.005

Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,000 (635 MPa)
Yield Strength (psi)	77,000 (532 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	29 ft.lb. (39J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	150-400	26-32	3/4" (19 mm)
5/64" (2.0 mm)	250-450	26-33	3/4" (19 mm)
3/32" (2.4 mm)	375-600	25-35	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-1C
- AWS A5.20M, E490T-1C
- ASME SFA 5.20, E70T-1C

FabCO® 85

FLAT & HORIZONTAL AWS E70T-5C/MJ H4

Benefits:

- basic slag system provides increased toughness
- low hydrogen weld deposit increases resistance to cracking
- excellent low temperature impacts allow use in critical applications

Typical Applications:

- non-alloyed and fine grain steels
- earthmoving equipment
- heavy fabrication
- severe service

Typical Weld Metal Chemistry:

	100% CO ₂	80% Ar/20% CO ₂
Carbon	0.04	0.05
Manganese	1.50	1.55
Silicon	0.85	0.88
Phosphorus	0.009	0.008
Sulphur	0.005	0.006

Typical Diffusible Hydrogen:

2.2 ml/100g	2.5 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	89,000	91,000
	(614 MPa)	(627 MPa)
Yield Strength (psi)	71,000	71,000
	(490 MPa)	(490 MPa)
Elongation % in 2" (50mm)	24%	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	51 ft.lb.(69J)	45 ft.lb.(61J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	200-350	25-28	3/4" (19 mm)
3/32" (2.4 mm)	300-450	26-31	1" (25 mm)

Shielding Gas: 100% CO₂,
75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-5CJ H4, E70T-5MJ H4
- AWS A5.20M, E490T-5CJ H4, E490T-5MJ H4
- ASME SFA 5.20, E70T-5CJ H4, E70T-5MJ H4
- ABS 100% CO₂, E70T-5CJ H4, 80% Ar/20% CO₂ E70T-5MJ H4
- CWB 75-80% Ar/Balance CO₂, E492T-5MJ H4, 100% CO₂ E492T-5J H4

FabCO® 73

FLAT & HORIZONTAL AWS E70T-2

Benefits:

- produces welds with good soundness and bead contour
- excellent arc stability across recommended current range resulting in excellent operator appeal
- low spatter and easy slag removal reduce cleanup time
- bead appearance has a smooth, uniform ripple with excellent tie-in in both flat and horizontal applications

Typical Applications:

- intended for single-pass weldments on rusted or scaled steel
- general fabrication
- machine bases

Typical Weld Metal Chemistry:

Not required

Typical Mechanical Properties (AW):

Tensile Strength (psi)	76,000 (523 MPa)
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Typical Charpy V-notch Impact Values (AW):

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	250-500	25-35	1" (25 mm)
7/64" (2.8 mm)	400-650	25-35	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-2C
- AWS A5.20M, E490T-2C
- ASME SFA 5.20, E70T-2C

FabCO® Excel Arc™ 71

ALL POSITION

AWS E71T-1C/M H8, E71T-9C/M H8

Benefits:

- low spatter and easy slag removal reduce cleanup time
- increased welder appeal and productivity
- good impact toughness at low temperatures resists cracking in severe applications

Typical Applications:

- non-alloyed and fine grain steels
- structural steel
- general fabrication
- heavy equipment

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.021	0.022
Manganese	1.30	1.60
Silicon	0.69	0.82
Phosphorus	0.015	0.014
Sulphur	0.011	0.01

Typical Diffusible Hydrogen:

3.8 ml/100g	4.8 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000	90,000
	(579 MPa)	(619 MPa)
Yield Strength (psi)	77,000	83,000
	(531 MPa)	(571 MPa)
Elongation % in 2" (50mm)	28%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	101 ft.lb. (137J)	91 ft.lb. (123J)
Avg. at -20°F (-30°C)	80 ft.lb. (108J)	69 ft.lb. (94J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	125-225	23-28	1/2" (13 mm)
.045" (1.2 mm)	170-300	23-29	3/4" (19 mm)
.052" (1.4 mm)	170-350	24-30	1" (25 mm)
1/16" (1.6 mm)	215-400	24-30	1" (25 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H8, E71T-1M H8, E71T-9C H8, E71T-9M H8
- AWS A5.20M, E491T-1C H8, E491T-1M H8, E491T-9C H8, E491T-9M H8
- ASME SFA 5.20, E71T-1C H8, E71T-1M H8, E71T-9C H8, E71T-9M H8
- ABS, 100% CO₂ S3YM HH (0.045" - 1/16" diameter electrodes)
- Bureau Veritas, 100% CO₂, S3YM HH (0.045" - 1/16" diameter electrodes)
- CWB, 100% CO₂ E491T-9-H8, 75-80% Ar/Balance CO₂, E491T-9M-H8 (1.2 mm - 1.6 mm diameter electrodes)
- DNV, 100% CO₂, Y40MS (H10)
- EN17632-A: T 46 3 P C/M 2 H10
- CE Marked per CPR 305/2011
- Lloyd's Register, 100% CO₂, 3YS H10
- AWS D1.8/D1.8M, 100% CO₂ & 75% Ar/25% CO₂, (0.045" [1.2 mm] & 1/16" [1.6 mm] diameter electrodes) (0.052" [1.4 mm] diameter 75% Ar/25% CO₂ only)

FabCO® Hornet

ALL POSITION

AWS E71T-1C/M H8, E71T-9C/M H8

Benefits:

- superior penetration profile promotes high-quality welds
- easy slag removal and low spatter levels reduces cleanup time and risk of inclusions
- good impact strength at low temperatures promotes crack resistance in severe applications
- low fume generation rate increases operator appeal and improves overall working environment

Typical Applications:

- structural steel
- general fabrication
- heavy equipment

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.03	0.02
Manganese	1.29	1.52
Silicon	0.30	0.40
Sulphur	0.005	0.004
Phosphorus	0.011	0.008

Typical Diffusible Hydrogen:

4.2 ml/100g	4.4 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	86,000	93,000
	(593 MPa)	(642 MPa)
Yield Strength (psi)	81,000	87,000
	(558 MPa)	(600 MPa)
Elongation % in 2" (50mm)	29%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -0°F (-20°C)	93 ft.lb.(126J)	80 ft.lb.(108J)
Avg. at -20°F (-30°C)	52 ft.lb.(71J)	75 ft.lb.(102J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	170-300	23-29	3/4" (19 mm)
.052" (1.4 mm)	170-350	24-30	3/4" (19 mm)
1/16" (1.6 mm)	215-400	24-30	1" (25 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H8, E71T-1M H8, E71T-9C H8, E71T-9M H8
- AWS A5.20M, E491T-1C H8, E491T-1M H8, E491T-9C H8, E491T-9M H8
- ASME SFA 5.20, E71T-1C H8, E71T-1M H8, E71T-9C H8, E71T-9M H8
- ABS, 100% CO₂, 3YSA H10, 80% Ar/20% CO₂, 3YSA H10
- CWB, 100% CO₂, E491T-9-H8, 80% Ar/20% CO₂, E491T-9M-H8
- AWS D1.8 Conformance: 0.045" (1.2 mm) & 1/16" (1.6 mm) diameter electrodes with 100% CO₂ or 75% Ar/25% CO₂ Shielding Gases
- DNV, 75% Ar/25% CO₂, IV Y40MS(H5)

FabCO® Triple 7

ALL POSITION

AWS E71T-1C/M H8

Benefits:

- excellent weldability with 100% CO₂ or 75-80% Ar/Balance CO₂
- fast freezing slag permits the welder to use higher current to increase travel speeds while maintaining flat bead contour in all positions
- easy slag removal, even from deep groove weldments

Typical Applications:

- shipbuilding
- railcar
- general plate fabrication
- pressure vessels

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.03	0.03
Manganese	1.27	1.52
Silicon	0.56	0.74
Phosphorus	0.013	0.013
Sulphur	0.009	0.009

Typical Diffusible Hydrogen:

4.6 ml/100g	5.4 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	90,000	93,000
	(617 MPa)	(643 MPa)
Yield Strength (psi)	79,000	79,000
	(547 MPa)	(544 MPa)
Elongation % in 2" (50mm)	27%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	76 ft.lb. (103J)	63 ft.lb. (85J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	100-325	23-34	3/4" (19 mm)
.052" (1.4 mm)	125-350	22-33	3/4" (19 mm)
1/16" (1.6 mm)	150-450	23-35	3/4" (19 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H8, E71T-1M H8
- AWS A5.20M, E491T-1C H8, E491T-1M H8
- ASME SFA 5.20, E71T-1C H8, E71T-1M H8
- ABS, 100% CO₂, 75% Ar/25% CO₂, 2YSA
- CWB, 100% CO₂, E491T-1-H8, 80% Ar/20% CO₂, E491T-1M-H8
- DNV II YMS

FabCO® Triple 8

ALL POSITION

AWS E71T-1CJ H8, E71T-9CJ H8

Benefits:

- excellent weldability with 100% CO₂
- fast-freezing slag permits welder to use higher current to deposit more metal faster and produce a flat bead in all positions
- easy slag removal and low spatter results in less time on post-weld cleaning activities and more time welding

Typical Applications:

- heavy equipment
- shipbuilding
- railcar
- pressure vessels

Typical Weld Metal Chemistry:

Carbon	0.02
Manganese	1.03
Silicon	0.45
Phosphorus	0.017
Sulphur	0.011

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000 (569 MPa)
Yield Strength (psi)	75,000 (519 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	103 ft.lb. (140J)
Avg. at -40°F (-40°C)	43 ft.lb. (58J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	100-340	23-35	3/4" (19 mm)
.052" (1.4 mm)	130-380	22-35	3/4" (19 mm)
1/16" (1.6 mm)	150-460	23-35	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1CJ H8, E71T-9CJ H8
- AWS A5.20M, E491T-1CJ H8, E491T-9CJ H8
- ASME SFA 5.20, E71T-1CJ H8, E71T-9CJ H8
- ABS, 100% CO₂, 4YSA H5
- CWB, 100% CO₂, E491T-9 H8
- DNV, 100% CO₂, IV YMS H5
- Lloyd's Register, 100% CO₂, 4YS H5

FabCO® Element™ 71T1C

ALL POSITION

AWS E71T-1C H8, E71T-9C H8

Benefits:

- enhanced out of position capability and low spatter/fume generation results in excellent operator appeal
- extremely low manganese emissions assist with conformance to environmental regulations
- easy slag release reduces cleanup time and the risk of inclusions

Typical Applications:

- shipbuilding
- heavy equipment
- structural steel
- general fabrication

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.20
Silicon	0.37
Phosphorus	0.010
Sulphur	0.012
Nickel	0.45

Typical Diffusible Hydrogen: 3.6 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	73,000 (503 MPa)
Yield Strength (psi)	64,000 (441 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	90 ft.lb. (122J)
Avg. at -20°F (-30°C)	75 ft.lb. (102J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	170-300	24-30	3/4" (19 mm)
.052" (1.4 mm)	180-350	24-30	1" (25 mm)
1/16" (1.6 mm)	215-400	24-31	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H8, E71T-9C H8
- AWS A5.20M, E491T-1C H8, E491T-9C H8
- ASME SFA 5.20, E71T-1C H8, E71T-9C H8
- ABS, 100% CO₂, 2YSA H10
- CWB, 100% CO₂, E491T-9-H8

FabCO® Element™ 71T1M

ALL POSITION

AWS E71T-1M H8, E71T-9M H8

Benefits:

- enhanced out of position capability and low spatter/fume generation results in excellent operator appeal
- extremely low manganese emissions assist with conformance to environmental regulations
- easy slag release reduces cleanup time and the risk of inclusions

Typical Applications:

- shipbuilding
- heavy equipment
- structural steel
- general fabrication

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.05
Manganese	0.21
Silicon	0.41
Phosphorus	0.011
Sulphur	0.012
Nickel	0.45

Typical Diffusible Hydrogen: 7.3 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	73,000 (503 MPa)
Yield Strength (psi)	62,000 (427 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	84 ft.lb. (114J)
Avg. at -20°F (-30°C)	65 ft.lb. (88J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	180-305	22-27	3/4" (19 mm)
.052" (1.4 mm)	170-350	23-29	1" (25 mm)
1/16" (1.6 mm)	225-405	22-29	1" (25 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1M H8, E71T-9M H8
- AWS A5.20M, E491T-1M H8, E491T-9M H8
- ASME SFA 5.20, E71T-1M H8, E71T-9M H8
- ABS, 75% Ar/25% CO₂, 2YSA H10
- CWB, 75-85% Ar/Balance CO₂, E491T-1M-H8

FabCO® 711M

ALL POSITION

AWS E71T-1C/M H8

Benefits:

- eliminates lack of fusion problems in all-position weldments
- higher deposition rates than GMAW wires in out of position welding
- stiff arc transfer for overhead welding
- can be used with straight CO₂ or 75-80% Ar/Balance CO₂

Typical Applications:

- shipbuilding
- ship repair
- general structural
- general fabrication

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.05	0.06
Manganese	1.08	1.33
Silicon	0.43	0.60
Phosphorus	0.007	0.008
Sulphur	0.013	0.014

Typical Diffusible Hydrogen:

4.9 ml/100g	7.4 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	86,000	92,000
	(593 MPa)	(635 MPa)
Yield Strength (psi)	74,000	80,000
	(514 MPa)	(554 MPa)
Elongation % in 2" (50mm)	26%	27%

Typical Charpy V-notch Impact Values

Avg. at 0°F (-20°C)	35 ft.lb.(48J)	25 ft.lb.(34J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	175-225	25-28	3/4" (19 mm)
.045" (1.2 mm)	200-320	25-32	3/4" (19 mm)
.052" (1.4 mm)	275-350	27-31	3/4" (19 mm)
1/16" (1.6 mm)	300-400	28-32	3/4" (19 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H8, E71T-1M H8
- AWS A5.20M, E491T-1C H8, E491T-1M H8
- ASME SFA 5.20, E71T-1C H8, E71T-1M H8
- ABS, 75% Ar/25% CO₂

FabCO® 712M

ALL POSITION

**AWS E71T-1MJ H4, E71T-9MJ H4,
E71T-12MJ H4**

Benefits:

- fast freezing slag makes 712M suitable for all position welding
- low levels of diffusible hydrogen equates to less needed preheating and a decreased chance of under-bead cracking
- excellent low temperature CVN impact properties makes 712M resistant to cracking in severe applications
- low moisture pickup helps to maintain low diffusible hydrogen levels after exposure

Typical Applications:

- offshore drilling rigs
- transmission and process piping
- jackup rig fabrication
- shipbuilding

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.05
Manganese	1.36
Silicon	0.26
Phosphorus	0.009
Sulphur	0.008
Nickel	0.46

Typical Diffusible Hydrogen: 3.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	79,000 (544 MPa)
Yield Strength (psi)	70,000 (482 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	100 ft.lb. (135J)
Avg. at -50°F (-45°C)	92 ft.lb. (124J)
Avg. at -76°F (-60°C)	75 ft.lb. (101J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	125-175	24	1/2" (13 mm)
.045" (1.2 mm)	125-250	24	3/4" (19 mm)
.052" (1.4 mm)	140-275	24-25	3/4" (19 mm)
1/16" (1.6 mm)	150-316	24-25	3/4" (19 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1MJ H4, E71T-9MJ H4, E71T-12MJ H4
- AWS A5.20M, E491T-1MJ H4, E491T-9MJ H4, E491T-12MJ H4
- ASME SFA 5.20, E71T-1MJ H4, E71T-9MJ H4, E71T-12MJ H4
- ABS, 75% Ar/25% CO₂, 4YSA H5, (0.035" - 0.052" [0.9mm - 1.4mm] diameters only)
- CWB, 75-80% Ar/Balance CO₂, E491T-1M, E491T-12MJ-H4, (0.035" - 0.052" [0.9mm - 1.4mm] diameters only)
- EN 17632-A: T 42 6 P M 2 H5
- CE Marked per CPR 305/2011
- DNV, 75% Ar/25% CO₂, IV Y40M5 (H5)

Formula XL®-550

ALL POSITION

**AWS E71T-1CJ H4, E71T-9CJ H4,
E71T-12CJ H4**

Benefits:

- high impact strengths at low temperatures resists cracking in severe applications
- low diffusible hydrogen weld deposit resists underbead cracking
- high-deoxidizer formulation reduces surface preparation requirements, increases productivity
- excellent arc characteristics assist in producing smooth weld beads with uniform fusion

Typical Applications:

- structural applications
- non-alloyed and fine grain steels
- earthmoving equipment
- shipbuilding

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	1.15
Silicon	0.20
Phosphorus	0.007
Sulphur	0.007
Nickel	0.42

Typical Diffusible Hydrogen: 3.6 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	83,000 (572 MPa)
Yield Strength (psi)	76,000 (524 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	90 ft.lb. (122J)
Avg. at -50°F (-45°C)	85 ft.lb. (115J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	225-275	24-26	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H4, E71T-12CJ H4
- AWS A5.20M, E491T-1C H4, E491T-12CJ H4
- ASME SFA 5.20, E71T-1C H4, E71T-12CJ H4
- ABS, 100% CO₂, 4YSA H10
- CWB, 100% CO₂, E491T-9-H8
- Lloyd's Register, 100% CO₂, 3Y40S H10

Formula XL®-550 H4

ALL POSITION

**AWS E71T-1CJ H4, E71T-9CJ H4,
E71T-12CJ H4**

Benefits:

- high impact strengths at low temperatures resists cracking in severe applications
- low diffusible hydrogen weld deposit resists underbead cracking
- high-deoxidizer formulation reduces surface preparation requirements, increases productivity
- excellent arc characteristics assist in producing smooth weld beads with uniform fusion

Typical Applications:

- structural applications
- non-alloyed and fine grain steels
- earthmoving equipment
- shipbuilding

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	1.15
Silicon	0.20
Phosphorus	0.007
Sulphur	0.007
Nickel	0.42

Typical Diffusible Hydrogen: 3.6 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	83,000 (572 MPa)
Yield Strength (psi)	76,000 (524 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	90 ft.lb. (122J)
Avg. at -50°F (-45°C)	85 ft.lb. (115J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-225	24-26	3/4" (19 mm)
.052" (1.4 mm)	225-250	24-27	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H4, E71T-12CJ H4
- AWS A5.20M, E491T-1C H4, E491T-12CJ H4
- ASME SFA 5.20, E71T-1C H4, E71T-12CJ H4
- ABS, 100% CO₂, 4YSA H5
- CWB, 100% CO₂, E491T-9-H4
- DNV, 100% CO₂, IV YMS H5 (1.2mm diameter electrode only)
- Lloyd's Register, 100% CO₂, 3Y40S H10

Formula XL®-525

ALL POSITION

AWS E71T-1M H8, E71T-9M H8, E71T-12MJ H8

Benefits:

- low levels of diffusible hydrogen conforms to MIL-E-24403/1D, and decreases chance of under-bead cracking
- excellent toughness at low temperatures
- outstanding weldability prevents worm tracks under normal welding conditions

Typical Applications:

- ship and barge construction
- general fabrication
- offshore structures
- pressure vessels

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.04
Manganese	1.24
Silicon	0.29
Phosphorus	0.010
Sulphur	0.015
Nickel	0.37

Typical Diffusible Hydrogen: 3.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000 (566 MPa)
Yield Strength (psi)	73,000 (503 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	100 ft.lb. (136J)
Avg. at -40°F (-40°C)	66 ft.lb. (90)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	130-250	23-29	1/2" (13 mm)
.045" (1.2 mm)	100-250	24-27	1/2" (13 mm)
.052" (1.4 mm)	175-400	23-35	3/4" (19 mm)
1/16" (1.6 mm)	250-475	24-29	3/4" (19 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1M H8, E71T-9M H8, E71T-12MJ H8
- AWS A5.20M, E491T-1M H8, E491T-9M H8, E491T-12MJ H8
- ASME SFA 5.20, E71T-1M H8, E71T-9M H8, E71T-12MJ H8
- ABS, 75-80% Ar/Balance CO₂, 3YSA H5
- CWB, 75-85% Ar/Balance CO₂, E491T-12MJ-H4
- DNV, 75-85% Ar/Balance CO₂, III Y40MS
- Lloyd's Register, 80% Ar/20% CO₂, 3YS H15
- MIL-E-24403/1, MIL-71T-1M, MIL-71T-1-HYM
- Bureau Veritas, 80% Ar/20% CO₂, S3YM

FabCO® 771

ALL POSITION

AWS E71T-1CJ H8, E71T-9CJ H8, E71T-12CJ H8

Benefits:

- excellent CVN toughness for critical applications
- low-hydrogen electrode minimizes risk of hydrogen embrittlement
- excellent arc characteristics provide consistent appearance and weld quality
- minimal spatter reduces post weld cleanup

Typical Applications:

- structural fabrication
- shipbuilding
- pressure vessels
- heavy equipment

Typical Weld Metal Chemistry:

Carbon	0.02
Manganese	0.88
Silicon	0.23
Phosphorus	0.013
Sulphur	0.005
Nickel	0.47

Typical Diffusible Hydrogen: 5.1 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000 (558 MPa)
Yield Strength (psi)	72,000 (496 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	108 ft.lb. (146J)
Avg. at -40°F (-40°C)	82 ft.lb. (111J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	24-31	3/4" (19 mm)
.052" (1.4 mm)	200-350	26-31	1" (25 mm)
1/16" (1.6 mm)	200-450	24-29	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1C H8, E71T-9C H8, E71T-12CJ H8
- AWS A5.20M, E491T-1C H8, E491T-9C H8, E491T-12CJ H8
- ASME SFA 5.20, E71T-1C H8, E71T-9C H8, E71T-12CJ H8
- ABS, 100% CO₂, 3YSA
- Bureau Veritas, 100% CO₂, S3YM
- CWB, 100% CO₂, E491T-9-H8
- Lloyd's Register, 100% CO₂, 3YS H15
- MIL-E-24403/1, MIL-71T-1C, MIL-71T-1-HYC

FabCO® 910

ALL POSITION

AWS E71T-1MJ, E71T-9MJ, E71T-12MJ

Benefits:

- excellent arc characteristics provide consistent appearance and weld quality
- excellent out-of-position capability
- enhanced slag release
- low spatter for reduced post weld cleanup

Typical Applications:

- shipbuilding
- railcar
- pressure vessels
- heavy equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	95% Ar/5% CO ₂
Carbon	0.04	0.07
Manganese	0.72	0.90
Silicon	0.35	0.47
Phosphorus	0.007	0.014
Sulphur	0.01	0.011
Nickel	0.44	0.48

Typical Mechanical Properties (AW):

Tensile Strength (psi)	80,000	84,800
	(550 MPa)	(585 MPa)
Yield Strength (psi)	66,000	77,100
	(456 MPa)	(532 MPa)
Elongation % in 2" (50mm)	29%	25.5%

Typical Charpy V-notch Impact Values (AW):

Avg. at -0°F (-20°C)	89 ft.lb.(121J)	109 ft.lb.(148J)
Avg. at -40°F (-40°C)	35 ft.lb.(47J)	47 ft.lb.(64J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-325	23-27	3/4" (19 mm)
.052" (1.4 mm)	150-300	23-27	1" (25 mm)
1/16" (1.6 mm)	200-350	23-26	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E71T-1M, E71T-9M, E71T-12MJ
- AWS A5.20M, E491T-1M, E491T-9M, E491T-12MJ
- ASME SFA 5.20, E71T-1M, E71T-9M, E71T-12MJ
- CWB, 75-92% Ar/Balance CO₂, E491T-12MJ
- MIL-E-24403/1, MIL-71T-1-HYR

Fabshield® 4

FLAT & HORIZONTAL

AWS E70T-4

Benefits:

- self-shielded; can be used outdoors without sheltering
- large diameter and high deposition rates help increase productivity
- easy slag removal reduces cleanup time
- desulfurizes weld metal to help minimize risk of cracking

Typical Applications:

- machine fabrication and repair
- industrial equipment
- heavy equipment
- foundry/steel mill

Typical Weld Metal Chemistry:

Carbon	0.27
Manganese	0.73
Phosphorus	0.011
Sulphur	0.005
Aluminum	1.42

Typical Mechanical Properties (AW):

Tensile Strength (psi)	93,000 (641 MPa)
Yield Strength (psi)	62,000 (427 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	250-375	28-31	2" (50 mm)
3/32" (2.4 mm)	250-500	28-34	2 1/2" (65mm)
.120" (3.0 mm)	450-675	28-37	2 3/4" (70mm)

Shielding Gas: None required

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-4
- AWS A5.20M, E490T-4
- ASME SFA 5.20, E70T-4

Fabshield® XLNT-6

FLAT & HORIZONTAL

AWS E70T-6

Benefits:

- large diameters with high deposition rates provide improved productivity
- good slag release reduces cleanup time and minimizes risk of inclusion
- optimized performance for flat & horizontal welding provides improved operator appeal
- self-shielded; can be used outdoors without sheltering

Typical Applications:

- structural steel fabrication
- AWS D1.8 Demand Critical welds
- ship and barge construction
- heavy equipment repair

Typical Weld Metal Chemistry:

Carbon	0.10
Manganese	1.34
Silicon	0.18
Phosphorus	0.010
Sulphur	0.004
Nickel	0.42
Aluminum	1.00

Typical Mechanical Properties (AW):

Tensile Strength (psi)	85,000 (586 MPa)
Yield Strength (psi)	64,000 (441 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	45 ft.lbs. (61J)
Avg. at -20°F (-30°C)	35 ft.lbs. (47J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	270-450	21-27	1" (25 mm)
3/32" (2.4 mm)	300-500	22-26	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-6
- AWS A5.20M, E490T-6
- ASME SFA A5.20, E70T-6
- AWS D1.8/D1.8M Conformance, [3/32" (2.4 mm) diameter]

Fabshield® 7027

FLAT & HORIZONTAL

AWS E70T-7

Benefits:

- large diameters with high deposition rates provide improved productivity
- excellent arc stability helps maintain consistent weld appearance and quality
- optimized performance for flat & horizontal welding provides improved operator appeal
- self-shielded; can be used outdoors without sheltering

Typical Applications:

- shipbuilding
- barge repair
- machine fabrication and repair
- general fabrication

Typical Weld Metal Chemistry:

Carbon	0.33
Manganese	0.28
Silicon	0.05
Phosphorus	0.014
Sulphur	0.005
Aluminum	1.30

Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,200 (6364 MPa)
Yield Strength (psi)	63,200 (434 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	250-450	23-30	1 3/4" (44 mm)
3/32" (2.4 mm)	250-550	27-32	1 3/4" (44 mm)
7/64" (2.8 mm)	325-600	24-32	1 3/4" (44 mm)

Shielding Gas: None required

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20, E70T-7
- AWS A5.20M, E490T-7
- ABS, E70T-7 (5/64" - 7/64" diameters)
- ASME SFA A5.20, E70T-7

Fabshield® XLR-8

ALL POSITION

AWS E71T-8JD H8

Benefits:

- welds out of position at high currents for high productivity
- excellent mechanical properties within a wide range of heat inputs
- self-shielded; can be used outdoors without sheltering
- excellent slag removal reduces cleanup time and risk of inclusion

Typical Applications:

- structural steel fabrication
- AWS D1.8 Demand Critical welds
- ship and barge construction
- heavy equipment repair

Typical Weld Metal Chemistry:

Carbon	0.19
Manganese	0.51
Silicon	0.17
Phosphorus	0.009
Sulphur	0.006
Aluminum	0.51

Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000 (579 MPa)
Yield Strength (psi)	68,000 (469 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	40 ft.lb. (54J)
Avg. at -40°F (-40°C)	30 ft.lb. (41J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	175-275	18-23	1" (25 mm)
.072" (1.8 mm)	175-315	18-23	1" (25 mm)
5/64" (2.0 mm)	200-340	18-24	1 1/4" (32 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.20, E71T-8JD H8
- AWS A5.20M, E491T-8JD H8
- ASME SFA 5.20, E71T-8JD H8
- ABS, 3YSA H10 (1/16" - 5/64" diameters)
- CWB, E491T-8J-H8 (1.6 - 2.0 mm diameters)
- EN 17632-A: T42 2 Y N 2 H10
- CE Marked per CPR 305/2011 (1.6 - 2.0 mm diameters)
- AWS D1.8/D1.8M Conformance [1/16" - 5/64" (1.6 - 2.0 mm) diameters]

Fabshield® 21B

ALL POSITION

AWS E71T-11

Benefits:

- self-shielded; can be used outdoors
- small diameters available for thin materials and light-duty power supplies
- excellent arc characteristics promote ease of use
- deoxidizer content provides quality welds on dirty, rusty, or coated materials

Typical Applications:

- general fabrication
- light structurals (under 3/4") & ancillary connections
- light-duty agricultural equipment repair
- galvanized sheet metal

Typical Weld Metal Chemistry:

Carbon	0.28
Manganese	0.34
Silicon	0.15
Phosphorus	0.008
Sulphur	0.003
Aluminum	1.72

Typical Mechanical Properties (AW):

Tensile Strength (psi)	91,000 (627 MPa)
Yield Strength (psi)	62,000 (427 MPa)
Elongation % in 2" (50mm)	22%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.030" (0.8 mm)	25-125	14-16	1/2" (13mm)
.035" (0.9 mm)	55-120	17-20	1/2" (13mm)
.045" (1.2mm)	115-200	15-18	1/2" (13mm)
1/16" (1.6 mm)	160-260	17-20	3/4" (19 mm)
.068" (1.8 mm)	145- 315	17-22	3/4" (19 mm)
5/64" (2.0 mm)	185-315	16-22	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.20, E71T-11
- AWS A5.20M, E491T-11
- ASME SFA 5.20, E71T-11
- ABS, E71T-11 (0.045" - 3/32" diameters)
- CWB, E491T-11 H8 (1.2 - 1.6 mm diameters)

Fabshield® 23

ALL POSITION

AWS E71T-14

Benefits:

- self-shielded; can be used outdoors
- small diameters available for thin materials and light-duty power supplies
- excellent operating characteristics suitable for hobbyist use
- very-high deoxidizer content provides quality welds on dirty, rusty, or coated materials

Typical Applications:

- single-pass welding ONLY
- automotive & galvanized sheet metal
- ornamental iron
- light-duty repairs

Typical Weld Metal Chemistry:

Carbon	0.18
Manganese	0.65
Silicon	0.40
Phosphorus	0.01
Sulphur	0.01
Aluminum	1.30

Typical Mechanical Properties (AW):

Tensile Strength (psi)	77,000 (531 MPa)
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Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	250-550	26-34	1" (25 mm)
3/32" (2.4 mm)	350-650	27-40	1" (25 mm)

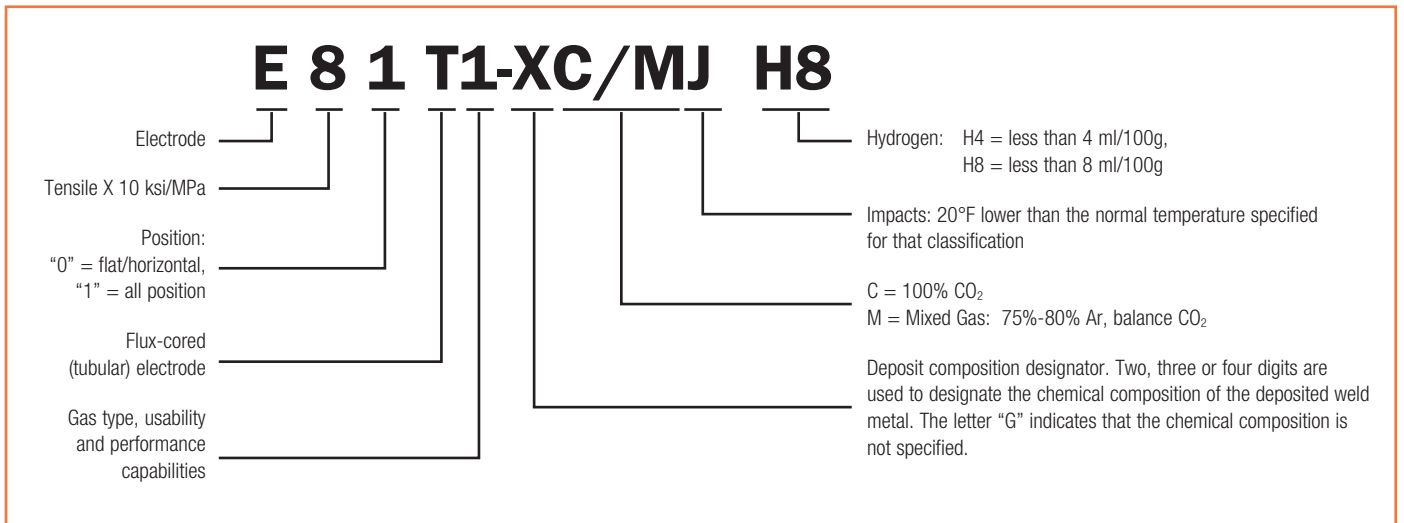
Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.20, E71T-14
- AWS A5.20M, E491T-14
- ASME SFA 5.20, E71T-14
- CWB, E491T-GS (1.2 mm diameter)

How AWS Classifies Low Alloy Flux Cored (Tubular) Wires, FCAW Process (AWS A5.29)



Low Alloy Flux Cored Designator Chart

Carbon-Molybdenum Weld Metal

A1 .12% Max Carbon, .40 - .65% Molybdenum

Chromium-Molybdenum Weld Metal

B2 1.00 - 1.50% Chromium, .40 - .65% Molybdenum
B3 2.00 - 2.50% Chromium, .90 - 1.20% Molybdenum
B6 4.00 - 6.00% Chromium, .45 - .65% Molybdenum
B9 8.00 - 10.50% Chromium, .85 - 1.20% Molybdenum, .15 - .30% Vanadium

Nickel Weld Metal

Ni1 .80 - 1.20% Nickel
Ni2 1.75 - 2.25% Nickel

Manganese-Molybdenum Weld Metal

D2 1.60 - 2.25% Manganese, .25 - .55% Molybdenum

Manganese-Nickel-Molybdenum Weld Metal

K2 .50 - 1.75% Manganese, 1.00 - 2.00% Nickel, .35% Max. Molybdenum
K3 .75 - 2.25% Manganese, 1.20 - 2.60% Nickel, .25 - .65% Molybdenum
K4 1.20 - 2.25% Manganese, 1.75 - 2.60% Nickel, .20 - .65% Molybdenum, .20 - .60% Chromium

Weld Metal for Weathering Steels

W2 Addition of Copper for Weathering Steels

FabCO® 81N1

FLAT & HORIZONTAL

AWS E80T1-Ni1C/MJ H8

Benefits:

- excellent CVN toughness for critical applications
- high deposition rates help increase productivity
- low hydrogen to minimize risk of hydrogen embrittlement
- 1% Nickel weld deposit provides atmospheric corrosion resistance

Typical Applications:

- structural fabrication
- bridge fabrication
- weathering steels
- heavy equipment

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.075	0.06
Manganese	1.26	1.40
Silicon	0.54	0.65
Phosphorus	0.011	0.007
Sulphur	0.008	0.011
Nickel	0.98	0.91

Typical Mechanical Properties (AW):

Tensile Strength (psi)	91,000	96,000
	(628 MPa)	(662 MPa)
Yield Strength (psi)	80,000	88,000
	(552 MPa)	(607 MPa)
Elongation % in 2" (50mm)	26%	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	37 ft.lb. (50J)	45 ft.lb. (61J)
Avg. at -40°F (-40°C)	22 ft.lb. (30J)	35 ft.lb. (48J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	170-350	24-31	1"(25 mm)
5/64" (2.0 mm)	240-520	26-31	1"(25 mm)
3/32" (2.4 mm)	400-650	27-35	1-1/4"(32 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E80T1-Ni1C H8, E80T1-Ni1M H8
- AWS A5.29M, E550T1-Ni1C H8, E550T1-Ni1M H8
- ASME SFA 5.29, E80T1-Ni1C H8, E80T1-Ni1M H8
- CWB, 100% CO₂, E550T-Ni1C H8
- CWB, 75-90% Ar/Balance CO₂, E550T-Ni1M-H8
- ABS, 100% CO₂, E80T1-Ni1CJ H8

FabCO® 811N1

ALL POSITION

AWS E81T1-Ni1C/MJ H4

Benefits:

- excellent CVN toughness for critical applications
- high deposition rates help increase productivity
- low hydrogen to minimize risk of hydrogen embrittlement
- 1% Nickel weld deposit provides atmospheric corrosion resistance

Typical Applications:

- structural fabrication
- bridge fabrication
- weathering steels
- heavy equipment

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.03	0.06
Manganese	1.09	1.39
Silicon	0.32	0.53
Phosphorus	0.007	0.009
Sulphur	0.005	0.008
Nickel	1.01	1.00

Typical Diffusible Hydrogen:

2.4 ml/100g	3.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	83,000	93,000
	(572 MPa)	(641 MPa)
Yield Strength (psi)	73,000	85,000
	(503 MPa)	(586 MPa)
Elongation % in 2" (50mm)	26%	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	65 ft.lb. (88J)	40 ft.lb. (54J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	125-250	24-28	3/4"(19 mm)
.052" (1.4 mm)	125-300	24-27	3/4"(19 mm)
1/16" (1.6 mm)	150-300	24-27	1"(25 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E71T1-Ni1CJ H4, E81T1-Ni1MJ H4
- AWS A5.29M, E551T1-Ni1CJ H4, E551T1-Ni1MJ H4
- ASME SFA 5.29, E81T1-Ni1CJ H4, E81T1-Ni1MJ H4
- CWB, 100% CO₂, E551T-Ni1C-JH8
- CWB, 75-80% Ar/Balance CO₂, E551T-Ni1M-JH8
- ABS, 100% CO₂, 3YSA
- AWS D1.8, 75% Ar/25% CO₂ (1/16" diameter electrode)

Formula XL®-8Ni1

ALL POSITION

AWS E81T1-Ni1MJ H8

Benefits:

- excellent wetting characteristics for uniform bead appearance
- excellent slag release for reduced post weld cleanup time
- low hydrogen to minimize risk of hydrogen embrittlement
- excellent deposition rates for increased productivity

Typical Applications:

- ship and barge construction
- pressure vessels
- structural applications
- heavy equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.08
Manganese	1.35
Silicon	0.40
Phosphorus	0.014
Sulphur	0.011
Nickel	1.06

Typical Diffusible Hydrogen: 4.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	96,000 (662 MPa)
Yield Strength (psi)	86,000 (593 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	93 ft.lb. (126J)
Avg. at -40°F (-40°C)	85 ft.lb. (115J)
Avg. at -60°F (-50°C)	63 ft.lb. (85J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	100-300	23-28	7/8"(22 mm)
1/16" (1.6 mm)	250-450	25-31	1"(25 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-Ni1MJ H8
- AWS A5.29M, E551T1-Ni1MJ H8
- ASME SFA 5.29, E81T1-Ni1MJ H8
- ABS, 75% Ar/25% CO₂, 3YSA H10
- DNV, 75% Ar/25% CO₂, IV YMS

FabCO® 803

ALL POSITION

AWS E81T1-Ni2C/MJ H4

Benefits:

- fast-freezing slag for excellent out-of-position performance
- low spatter for reduced post weld cleanup
- excellent arc characteristics for enhanced operator appeal
- high impact strengths at low temperatures for severe applications

Typical Applications:

- weathering steels
- offshore construction
- shipbuilding
- HSLA steels

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.04	0.05
Manganese	1.00	1.25
Silicon	0.20	0.40
Phosphorus	0.010	0.010
Sulphur	0.012	0.010
Nickel	1.84	2.00

Typical Diffusible Hydrogen:

2.6 ml/100g	2.7 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	88,000	96,000
	(609 MPa)	(660 MPa)
Yield Strength (psi)	81,000	86,000
	(535 MPa)	(596 MPa)
Elongation % in 2" (50mm)	27%	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	72 ft.lb. (98J)	55 ft.lb. (74J)
Avg. at -60°F (-50°C)	68 ft.lb. (92J)	44 ft.lb. (60J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	100-250	22-28	3/4"(19 mm)
.052" (1.4 mm)	200-300	25-28	3/4"(19 mm)
1/16" (1.6 mm)	150-300	25-27	1"(25 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-Ni2CJ H4, E81T1-Ni2MJ H4
- AWS A5.29M, E551T1-Ni2CJ H4, E551T1-Ni2MJ H4
- ASME SFA 5.29, E81T1-Ni2CJ H4, E81T1-Ni2MJ H4
- CWB, 100% CO₂, E551T1-Ni2C-JH4
- CWB, 75-80% Ar/Balance CO₂, E551T1-Ni2M-JH4
- DNV, 100% CO₂, III Y40MS
- DNV, 75% Ar/25% CO₂, III Y40MS
- ABS, 100% CO₂, 3YSA
- Lloyd's Register, 100% CO₂, 3YS H15
- Lloyd's Register, 75% Ar/25% CO₂, 3YS H15
- AWS D1.8, 100% CO₂ (1/16" diameter electrode)

FabCO® 911N2

ALL POSITION

AWS E91T1-Ni2C

Benefits:

- excellent wetting characteristics for uniform bead appearance
- excellent slag release for reduced post weld cleanup time
- fast freezing slag for excellent out-of-position capability
- excellent low temperature impact properties for critical applications

Typical Applications:

- 2% Nickel steels
- ASTM A203 Grade A & B steels
- offshore construction
- shipbuilding

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.18
Silicon	0.60
Phosphorus	0.012
Sulphur	0.021
Nickel	2.41

Typical Mechanical Properties (AW):

Tensile Strength (psi)	99,000 (683 MPa)
Yield Strength (psi)	86,000 (593 MPa)
Elongation % in 2" (50mm)	23%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	36 ft.lb. (49J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	150-425	21-31	1"(25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E91T1-Ni2C
- AWS A5.29M, E621T1-Ni2C
- ASME SFA 5.29, E91T1-Ni2C

FabCO® 881K2

ALL POSITION

AWS E81T1-K2C/MJ H8

Benefits:

- low spatter for decreased post weld cleanup
- excellent low temperature impact properties in both as welded and stress relieved conditions
- low hydrogen for increased resistance to hydrogen cracking

Typical Applications:

- HSLA steels
- offshore construction
- shipbuilding
- heavy equipment

Typical Weld Metal Chemistry:

	100% CO ₂	80% Ar/20% CO ₂
Carbon	0.04	0.06
Manganese	0.97	1.23
Silicon	0.19	0.29
Phosphorus	0.010	0.009
Sulphur	0.015	0.015
Molybdenum	0.01	0.01
Nickel	1.62	1.52

Typical Diffusible Hydrogen:

3.5 ml/100g	4.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	88,000	96,000
	(607 MPa)	(662 MPa)
Yield Strength (psi)	79,000	86,000
	(545 MPa)	(593 MPa)
Elongation % in 2" (50mm)	24%	21%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	82 ft.lb. (111J)	66 ft.lb. (89J)
Avg. at -76°F (-60°C)	—	53 ft.lb. (71J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	100-300	22-30	7/8"(22 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-K2CJ H8, E81T1-K2MJ H8
- AWS A5.29M, E551T1-K2CJ H8, E551T1-K2MJ H8
- ASME SFA 5.29, E81T1-K2CJ H8, E81T1-K2MJ H8
- ABS, 80% Ar/20% CO₂, E81T1-K2M
- Lloyd's Register, 80% Ar/20% CO₂, 4Y42S H10
- Bureau Veritas, 75-80% Ar/Balance CO₂, S5Y42M
- DNV, 75-80% Ar/Balance CO₂, V Y42MS (H10)
- EN17632-A: T 46 6 1.5Ni P M 2 H5
- CE Marked per CPR 305/2011

FabCO® 81K2-C

ALL POSITION

AWS E81T1-K2CJ H8

Benefits:

- fast freezing slag for superior out-of-position performance
- excellent operator appeal
- low spatter for reduced post weld cleanup
- excellent toughness at low temperatures

Typical Applications:

- HSLA steels
- offshore construction
- shipbuilding
- heavy equipment

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.13
Silicon	0.27
Phosphorus	0.015
Sulphur	0.014
Nickel	1.67

Typical Diffusible Hydrogen: 3.9 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	87,000 (600 MPa)
Yield Strength (psi)	78,000 (538 MPa)
Elongation % in 2" (50mm)	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	91 ft.lb. (123J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	23-30	1" (25 mm)
.052" (1.4 mm)	150-300	23-31	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-K2CJ H8
- AWS A5.29M, E551T1-K2CJ H8
- ASME SFA 5.29, E81T1-K2CJ H8
- ABS, 100% CO₂, 3YSA H10 (0.045" diameter electrode)
- ABS, 100% CO₂, 3Y400S H5

FabCO® 991K2

ALL POSITION

AWS E91T1-K2C/M H8

Benefits:

- low smoke and spatter
- fast freezing slag for enhanced out-of-position performance
- enhanced slag release

Typical Applications:

- HSLA or Q&T steels
- ideal for A514, A710, and HY-80 steels
- shipbuilding
- heavy equipment

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.05	0.06
Manganese	1.04	1.57
Silicon	0.19	0.35
Phosphorus	0.009	0.009
Sulphur	0.014	0.015
Nickel	1.92	1.69
Molybdenum	0.01	0.01

Typical Diffusible Hydrogen:

5.0 ml/100g	6.5 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,000 (635 MPa)	101,800 (702 MPa)
Yield Strength (psi)	80,000 (552 MPa)	93,400 (644 MPa)
Elongation % in 2" (50mm)	27%	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	63 ft.lb. (85J)	52 ft.lb. (71J)
Avg. at -60°F (-50°C)	—	26 ft.lb. (35J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	23-30	1/2" (13 mm)
1/16" (1.6 mm)	175-350	23-29	1/2" (13 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E91T1-K2C H8, E91T1-K2M H8
- AWS A5.29M, E621T1-K2C H8, E621T1-K2M H8
- ASME SFA 5.29, E91T1-K2C H8, E91T1-K2M H8
- CWB, 100% CO₂, E621T1-K2C-H8
- ABS, 100% CO₂, E91T1-K2C H8
- ABS, 75% Ar/25% CO₂, E91T1-K2M H8

FabCO® 95K2

FLAT & HORIZONTAL

AWS E90T5-K2C/M H4

Benefits:

- excellent fracture toughness
- outstanding resistance to cracking
- versatile chemistry

Typical Applications:

- HSLA or Q&T steels
- ideal for A514, A709 gd HPS70W, A710, and HY-80 steels
- shipbuilding
- offshore construction

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.05	0.05
Manganese	0.91	1.10
Silicon	0.45	0.60
Phosphorus	0.010	0.009
Sulphur	0.009	0.008
Molybdenum	0.19	0.19
Nickel	1.56	1.64

Typical Diffusible Hydrogen:

1.1 ml/100g	1.3 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	90,000 (637 MPa)	98,000 (673 MPa)
Yield Strength (psi)	78,000 (540 MPa)	88,000 (605 MPa)
Elongation % in 2" (50mm)	26%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	74 ft.lb. (100J)	75 ft.lb. (102J)
Avg. at -60°F (-50°C)	66 ft.lb. (90J)	63 ft.lb. (85J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	200-485	25-34	1" (25 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E90T5-K2C H4, E90T5-K2M H4
- AWS A5.29M, E620T5-K2C H4, E620T5-K2M H4
- ASME SFA 5.29, E90T5-K2C H4, E90T5-K2M H4

FabCO® 101K3

FLAT & HORIZONTAL

AWS E100T1-K3C

Benefits:

- 100 ksi tensile strength for critical applications
- versatile chemistry
- optimized for performance with 100% CO₂

Typical Applications:

- intended for HSLA and Q&T steels
- offshore construction
- shipbuilding

Typical Weld Metal Chemistry:

Carbon	0.043
Manganese	1.27
Silicon	0.74
Phosphorus	0.014
Sulphur	0.013
Molybdenum	0.43
Nickel	2.29
Vanadium	0.017

Typical Mechanical Properties (AW):

Tensile Strength (psi)	107,500 (741 MPa)
Yield Strength (psi)	96,700 (667 MPa)
Elongation % in 2" (50mm)	20%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	30 ft.lb. (41J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	200-400	24-32	1" (25 mm)
5/64" (2.0 mm)	250-500	25-35	1-1/4" (32 mm)
3/32" (2.4 mm)	300-600	26-37	1-1/4" (32 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E100T1-K3C
- AWS A5.29M, E690T1-K3C
- ASME SFA 5.29, E100T1-K3C

FabCO® 115K3

FLAT & HORIZONTAL

AWS E110T5-K3C/M H4

Benefits:

- extremely low hydrogen for improved crack resistance
- excellent low temperature impact properties
- versatile chemistry

Typical Applications:

- intended for HSLA and Q&T steels
- offshore construction
- shipbuilding

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.05	0.08
Manganese	1.49	2.04
Silicon	0.33	0.62
Phosphorus	0.011	0.014
Sulphur	0.017	0.012
Molybdenum	0.37	0.41
Nickel	2.24	1.84

Typical Diffusible Hydrogen:

2.1 ml/100g	2.3 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	112,000 (772 MPa)	126,800 (875 MPa)
Yield Strength (psi)	98,000 (676 MPa)	105,800 (730 MPa)
Elongation % in 2" (50mm)	22%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C)	57 ft.lb. (77J)	47 ft.lb. (64J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	200-425	25-34	1" (25 mm)
3/32" (2.4 mm)	300-600	26-35	1-1/4" (32 mm)

Shielding Gas: 100% CO₂,
75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E110T5-K3C H4, E110T5-K3M H4
- AWS A5.29M, E760T5-K3C H4, E760T5-K3M H4
- ASME SFA 5.29, E110T5-K3C H4, E110T5-K3M H4
- ABS, 100% CO₂, E110T5-K3C H4

FabCO® 110

ALL POSITION

AWS E111T1-K3MJ H8

Benefits:

- enhanced slag release
- fast freezing slag for enhanced out-of-position capability
- low hydrogen to reduce risk of hydrogen cracking

Typical Applications:

- intended for HSLA and Q&T steels
- offshore construction
- shipbuilding

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.06
Manganese	1.60
Silicon	0.40
Phosphorus	0.008
Sulphur	0.010
Chromium	0.05
Nickel	1.90
Molybdenum	0.30
Vanadium	0.02

Typical Diffusible Hydrogen: 4.2 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	120,000 (827 MPa)
Yield Strength (psi)	112,000 (772 MPa)
Elongation % in 2" (50mm)	21%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	30 ft.lb. (41J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	23-28	1" (25 mm)
.052" (1.4 mm)	200-350	25-30	1" (25 mm)
1/16" (1.6 mm)	175-400	23-32	1" (25 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E111T1-K3MJ H8
- AWS A5.29M, E761T1-K3MJ H8
- ASME SFA 5.29, E111T1-K3MJ H8
- CWB, 75-80% Ar/Balance CO₂, E761T1-K3MJ-H8

FabCO® 1101K3-C

ALL POSITION

AWS E111T1-K3CJ H8

Benefits:

- excellent arc stability for exceptional operator appeal
- low spatter helps reduce post weld cleanup
- low hydrogen to reduce risk of hydrogen cracking

Typical Applications:

- intended for HSLA and Q&T steels
- offshore construction
- shipbuilding

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.55
Silicon	0.34
Phosphorus	0.009
Sulphur	0.017
Chromium	0.03
Nickel.....	1.97
Molybdenum.....	0.37
Vanadium	0.02

Typical Diffusible Hydrogen: 2.9 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	117,000 (807 MPa)
Yield Strength (psi)	105,000 (724 MPa)
Elongation % in 2" (50mm)	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	34 ft.lb. (46J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	125-325	24-31	3/4" (19 mm)
.052" (1.4 mm)	150-375	24-32	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E111T1-K3CJ H8
- AWS A5.29M, E761T1-K3CJ H8
- ASME SFA 5.29, E111T1-K3CJ H8
- ABS, 100% CO₂, E111T1-K3CJ H8

FabCO® 110K3-M

ALL POSITION

AWS E111T1-K3MJ H4

Benefits:

- optimized for use with mixed gas
- low temperature impact properties for critical applications
- low hydrogen to reduce risk of hydrogen cracking

Typical Applications:

- intended for HSLA and Q&T steels
- offshore construction
- shipbuilding

Typical Weld Metal Chemistry:

75% Ar/25% CO ₂	
Carbon	0.05
Manganese	2.04
Silicon	0.26
Phosphorus	0.007
Sulphur	0.014
Chromium	0.12
Nickel.....	1.84
Molybdenum.....	0.37

Typical Diffusible Hydrogen: 2.2 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	128,000 (883 MPa)
Yield Strength (psi)	124,000 (854 MPa)
Elongation % in 2" (50mm)	15%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	32 ft.lb. (43J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	170-200	23-28	3/4" (19 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E111T1-K3MJ H4
- AWS A5.29M, E761T1-K3MJ H4
- ASME SFA 5.29, E111T1-K3MJ H4
- ABS, 75% Ar/25% CO₂, E111T1-K3MJ H4

FabCO® 115

FLAT & HORIZONTAL

AWS E110T5-K4C

Benefits:

- comparable to E11018M but with higher deposition rates
- increased weld toughness for critical welds at low temperatures
- produces a low hydrogen deposit with basic slag to minimize cracking

Typical Applications:

- mining equipment
- earthmoving equipment
- off-road vehicles
- single and multiple pass applications

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	1.50
Silicon.....	0.41
Phosphorus	0.012
Sulphur	0.014
Chromium	0.42
Nickel.....	2.37
Chromium	0.42
Molybdenum.....	0.42

Typical Mechanical Properties (AW):

Tensile Strength (psi)	126,000 (869 MPa)
Yield Strength (psi)	102,000 (701 MPa)
Elongation % in 2" (50mm)	18%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C)	48 ft.lb. (65J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	120-220	22-27	3/4" (19 mm)
1/16" (1.6 mm)	190-350	22-30	3/4" (19 mm)
3/32" (2.4 mm)	290-525	25-32	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E110T5-K4C
- ASME SFA 5.29, E110T5-K4C
- ABS 100% CO₂, E110T5-K4C
- CWB 100% CO₂, E7605-K4C H4

FabCO® 125K4

FLAT & HORIZONTAL
AWS E120T5-K4C H4

Benefits:

- designed for semi-automatic and automatic welding of high strength steels where minimum tensile of 120,000 psi is required
- good impact values at low temperatures, down to -60°F
- basic slag produces low diffusible hydrogen and promotes resistance to cracking
- high deposition rates and high efficiency

Typical Applications:

- casting repair
- single and multiple pass applications with 100% CO₂ Shielding Gas
- welding of quenched and tempered steels and HSLA steels

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.88
Silicon	0.42
Phosphorus	0.010
Sulphur	0.016
Chromium	0.52
Nickel	2.13
Molybdenum	0.61
Vanadium	0.01

Typical Diffusible Hydrogen: 1.5 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	133,000 (917 MPa)
Yield Strength (psi)	118,000 (814 MPa)
Elongation % in 2" (50mm)	20%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C) 57 ft.lb. (77J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	200-425	25-34	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E120T5-K4C H4
- AWS A5.29M, E831T5-K4C H4
- ASME SFA 5.29, E120T5-K4C H4

FabCO® 105D2

FLAT & HORIZONTAL
AWS E100T5-D2C

Benefits:

- excellent low temperature toughness
- low weld metal hydrogen
- wire composition is well suited for the repair of manganese-moly castings
- weld metal maintains strength after several hours of stress relieving

Typical Applications:

- manganese-moly casting repair
- single or multiple pass applications with 100% CO₂ Shielding Gas

Typical Weld Metal Chemistry:

Carbon	0.11
Manganese	2.00
Silicon	0.55
Phosphorus	0.009
Sulphur	0.010
Molybdenum	0.44

**Typical Mechanical Properties
(PWHT 1 Hr. @ 1150°F/621°C):**

Tensile Strength (psi)	111,000 (765 MPa)
Yield Strength (psi)	97,000 (669 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values (PWHT 1 Hr. @ 1150°F/621°C):

Avg. at -40°F (-40°C) 49 ft.lb. (66J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	200-425	25-34	3/4" (19 mm)
3/32" (2.4 mm)	300-600	26-35	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E100T5-D2C
- AWS A5.29M, E690T5-D2C
- ASME SFA 5.29, E100T5-D2C

FabCO® 811A1

ALL POSITION
AWS E81T1-A1C

Benefits:

- molybdenum content of weld metal deposit helps maintain tensile strength after stress relief
- good weldability in all positions
- fast-freezing slag removes easily

Typical Applications:

- boilers
- pressure vessels
- pressure piping
- single and multiple pass applications with 100% CO₂ Shielding Gas

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	0.83
Silicon	0.26
Phosphorus	0.014
Sulphur	0.016
Molybdenum	0.48

**Typical Mechanical Properties
(PWHT 1 Hr. @ 1150°F/621°C):**

Tensile Strength (psi)	94,000 (648 MPa)
Yield Strength (psi)	83,000 (572 MPa)
Elongation % in 2" (50mm)	26%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	115-325	20-30	1/2" (13 mm)
1/16" (1.6 mm)	150-425	21-31	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-A1C
- AWS A5.29M, E551T5-A1C
- ASME SFA 5.29, E81T1-A1C

FabCO® 811W

ALL POSITION

AWS E81T1-W2C H8

Benefits:

- meets D1.1 structural code to weld A242 and A588
- good properties in the 80,000-100,000 psi strength range and good impact values
- alloyed to provide a weld metal color match in the weathering conditions
- capable of welding in all positions

Typical Applications:

- weathering steels where the steel may be exposed to the environment
- single and multiple pass applications with 100% CO₂ Shielding Gas

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	1.30
Silicon	0.70
Phosphorus	0.008
Sulphur	0.014
Chromium	0.59
Nickel	0.74
Copper	0.38

Typical Diffusible Hydrogen: 2.7 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	99,000 (683 MPa)
Yield Strength (psi)	85,000 (586 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C) 25 ft.lb. (34J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	115-325	20-30	1/2" (13 mm)
1/16" (1.6 mm)	150-425	21-31	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1 W2C H8
- AWS A5.29M, E551T1-W2 H8
- ASME SFA 5.29, E81T1 W2C H8

FabCO® 811B2

ALL POSITION

AWS E81T1-B2C H8

Benefits:

- maintains tensile strength at high service temperature, provides good creep resistance
- suitable replacement for E8018-B2
- fast-freezing slag, suitable for all-position welding
- increases productivity

Typical Applications:

- P11 Pipe
- high temperature applications
- welding of 1.25% Cr and 0.5% Mo steels
- single or multiple pass applications with 100% CO₂

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.53
Silicon	0.38
Phosphorus	0.009
Sulphur	0.010
Chromium	1.28
Molybdenum	0.44

Typical Diffusible Hydrogen: 5.0 ml/100g

Typical Mechanical Properties

(PWHT 1 Hr. @ 1275°F/691°C):

Tensile Strength (psi)	95,000 (655 MPa)
Yield Strength (psi)	82,000 (565 MPa)
Elongation % in 2" (50mm)	22%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	175-300	24-30	5/8" (16 mm)
1/16" (1.6 mm)	200-400	24-33	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-B2C H8
- ASME SFA 5.29, E81T1-B2C H8
- AWS A5.29M, E551T1-B2C H8
- CWB 100% CO₂ E551T1-B2C

FabCO® XTREME™ B2

ALL POSITION

AWS E81T5-B2M H8

Benefits:

- basic slag system with the slag removal and spatter of a T1 electrode
- excellent toughness properties
- reduced chance of temper embrittlement
- minimizes crack susceptibility

Typical Applications:

- welding of 1.25 Cr and 0.5 Mo steels
- single and multiple pass applications with mixed gas
- high temperature service application where high tensile strength and creep resistance is required
- boiler and pressure vessel piping

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.10
Manganese	1.08
Silicon	0.10
Phosphorus	0.008
Sulphur	0.003
Nickel	0.04
Chromium	1.22
Molybdenum	0.50

Typical Diffusible Hydrogen: 5.2 ml/100g

Typical Mechanical Properties

(PWHT 1 Hr. @ 1275°F/691°C):

Tensile Strength (psi)	86,100 (594 MPa)
Yield Strength (psi)	68,800 (474 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values (PWHT

1 Hr. @ 1275°F/691°C):

Avg. at -40°F (-40°C) 91 ft.lb. (124J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	160-290	21-27	1/2" (13 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E81T5-B2M H8
- AWS A5.29M, E551T5-B2M H8
- ASME SFA 5.29, E81T5-B2M H8

FabCO® 91B3

FLAT & HORIZONTAL

AWS E90T1-B3C

Benefits:

- high temperature creep resistance and some oxidation resistance
- replaces E9018-B3 covered electrode in suitable applications
- excellent welder appeal with good bead geometry

Typical Applications:

- welding of 2.25 Cr and 1 Mo Steels
- single or multiple pass applications with 100% CO₂ shielding gas
- steam or chemical piping systems

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.64
Silicon	0.25
Phosphorus	0.010
Sulphur	0.013
Chromium	2.47
Molybdenum.....	1.06

Typical Mechanical Properties

(PWHT 1 Hr. @ 1275°F/691°C):

Tensile Strength (psi)	106,000 (731 MPa)
Yield Strength (psi)	93,000 (641 MPa)
Elongation % in 2" (50mm)	19%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	140-390	25-36	1-1/4" (32 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E90T1-B3C
- AWS A5.29M, E620T1-B3C
- ASME SFA 5.29, E90T1-B3C

FabCO® 911B3

ALL POSITION

AWS E91T1-B3C/M H8

Benefits:

- high temperature creep resistance and some corrosion resistance
- excellent welder appeal with good bead geometry in all positions
- can be used for all position welding

Typical Applications:

- welding of 2.25 Cr and 1 Mo steels
- single or multiple pass applications with 100% CO₂ or mixed gas

Typical Weld Metal Chemistry:

	100% CO ₂	80% Ar/20% CO ₂
Carbon	0.05	0.05
Manganese	0.64	0.92
Silicon	0.27	0.38
Phosphorus	0.011	0.010
Sulphur	0.013	0.011
Molybdenum	0.93	0.97
Chromium	2.04	2.30

Typical Diffusible Hydrogen:

2.8 ml/100g	3.1 ml/100g
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Typical Mechanical Properties

(PWHT 1 Hr. @ 1275°F/691°C):

Tensile Strength (psi)	100,000	109,000
	(689 MPa)	(752 MPa)
Yield Strength (psi)	86,000	86,000
	(593 MPa)	(593 MPa)
Elongation % in 2" (50mm)	20%	18%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	115-325	20-30	1/2" (13 mm)
1/16" (1.6 mm)	150-425	21-31	3/4" (19 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E91T1-B3C/M H8
- AWS A5.29M, E621T1-B3 C/M H8
- ASME SFA 5.29, E91T1-B3C/M H8

FabCO® XTREME™ B3

ALL POSITION

AWS E91T5-B3M H8

Benefits:

- excellent toughness properties
- minimizes crack susceptibility
- reduced chance of temper embrittlement
- slag removal and spatter similar to a T1 electrode

Typical Applications:

- welding 2.25 Cr and 1 Mo steels
- single and multiple pass applications with mixed gas
- high temperature piping systems

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.10
Manganese	1.05
Silicon	0.08
Phosphorus	0.007
Sulphur	0.003
Nickel.....	0.02
Chromium	2.30
Molybdenum.....	1.03

Typical Diffusible Hydrogen: 5.0 ml/100g

Typical Mechanical Properties

(PWHT 1 Hr. @ 1275°F/691°C):

Tensile Strength (psi)	105,600 (728 MPa)
Yield Strength (psi)	88,100 (607 MPa)
Elongation % in 2" (50mm)	21%

Typical Charpy V-notch Impact Values

(PWHT 1 Hr. @ 1275°F/691°C):

Avg. at -40°F (-40°C) 110 ft.lb. (149J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	160-290	21-26.5	3/4" (19 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E91T5-B3M H8
- AWS A5.29M, E621T5-B3M H8
- ASME SFA 5.29, E91T5-B3M H8

FabCO® B6

ALL POSITION

AWS E81T1-B6C/M

Benefits:

- fast freezing slag for out-of-position welding
- excellent arc stability with flat bead appearance
- low spatter level
- produces x-ray quality weld

Typical Applications:

- welding 5 Cr and 0.5 Mo steels
- single and multiple pass applications with 100% CO₂ or mixed gas
- high temperature and high pressure applications

Typical Weld Metal Chemistry:

	100% CO ₂	75% Ar/25% CO ₂
Carbon	0.05	0.06
Manganese	0.40	0.40
Silicon	0.54	0.51
Phosphorus	0.008	0.007
Sulphur	0.010	0.010
Nickel	0.02	0.02
Chromium	4.80	4.90
Molybdenum	0.49	0.50

Typical Mechanical Properties (PWHT 2 Hrs. @ 1375°F/746°C):

Tensile Strength (psi)	99,000	102,500
	(683 MPa)	(707 MPa)
Yield Strength (psi)	85,000	92,000
	(586 MPa)	(634 MPa)
Elongation % in 2" (50mm)	18%	18%

Typical Charpy V-notch Impact Values (PWHT 2 Hrs. @ 1375°F/746°C):

Avg. at 32°F (0°C)	25 ft.lb. (34J)	28 ft.lb. (38J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	115-325	20-30	1/2" (13 mm)
1/16" (1.6 mm)	150-425	21-31	3/4" (19 mm)

Shielding Gas: 100% CO₂, 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-B6C/M
- AWS A5.29M, E551T1-B6C/M
- ASME SFA 5.29, E81T1-B6C/M

FabCO® B9

ALL POSITION

AWS E91T1-B9M

Benefits:

- fast freezing slag for out-of-position welding
- excellent arc stability with flat bead appearance
- low spatter level
- x-ray quality weld

Typical Applications:

- welding of Grade 91 steels
- high temperature and high pressure applications
- single and multiple pass applications with mixed gas

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂
Carbon	0.12
Manganese	0.60
Silicon	0.15
Phosphorus	0.008
Sulphur	0.008
Nickel	0.70
Chromium	9.00
Molybdenum	1.00

Typical Mechanical Properties (PWHT 1 Hr. @ 1400°F/760°C):

Tensile Strength (psi)	116,000 (728 MPa)
Yield Strength (psi)	96,000 (607 MPa)
Elongation % in 2" (50mm)	16%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	170-260	24-26	3/4" (19 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E91T1-B9M
- AWS A5.29M, E621T1-B9M
- ASME SFA 5.29, E91T1-B9M

FabCO® Element™ 81K2C

ALL POSITION

AWS E81T1-GC H8

Benefits:

- extremely low manganese emissions
- low spatter and fume
- improved operator comfort and productivity
- enhanced out-of-position capability

Typical Applications:

- applications where compliance with OSHA regulations or NIOSH and ACGIH recommendations for Manganese could be a concern
- heavy equipment
- general fabrication
- shipbuilding
- railcar

Typical Weld Metal Chemistry:

Carbon	0.06
Manganese	0.25
Silicon	0.47
Phosphorus	0.010
Sulphur	0.009
Nickel	1.84
Chromium	0.02
Molybdenum	0.02
Vanadium	0.006

Typical Diffusible Hydrogen: 6.1 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000 (565 MPa)
Yield Strength (psi)	71,000 (490 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	81 ft.lb. (117J)
Avg. at -40°F (-40°C)	57 ft.lb. (83J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	165-320	24-30	3/4" (19 mm)
.052" (1.4 mm)	170-350	24-30	3/4" (19 mm)
1/16" (1.6 mm)	170-400	24-31	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-GC H8
- AWS A5.29M, E551T1-GC H8
- ASME SFA 5.29, E81T1-GC H8
- ABS, 100% CO₂ 3YSA-H10

FabCO® Element™ 81K2M FabCO® 107G

ALL POSITION

AWS E81T1-GM H8

Benefits:

- extremely low manganese emissions
- low spatter and fume
- improved operator comfort and productivity
- enhanced out-of-position capability

Typical Applications:

- applications where compliance with OSHA regulations or NIOSH and ACGIH recommendations for Manganese could be a concern
- heavy equipment
- general fabrication
- shipbuilding
- railcar

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	0.40
Silicon	0.56
Phosphorus	0.010
Sulphur	0.010
Nickel	1.89
Chromium	0.035
Molybdenum	0.004
Vanadium	0.007

Typical Diffusible Hydrogen: 6.2 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	84,000 (579 MPa)
Yield Strength (psi)	73,000 (503 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	76 ft.lb. (103J)
Avg. at -40°F (-40°C)	66 ft.lb. (89J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	170-300	22-27	3/4" (19 mm)
.052" (1.4 mm)	170-350	23-29	3/4" (19 mm)
1/16" (1.6 mm)	185-400	22-28	1" (25 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-GM H8
- AWS A5.29M, E551T1-GM H8
- ASME SFA 5.29, E81T1-GM H8
- ABS, 75% Ar/25% CO₂ 3YSA-H10

ALL POSITION

AWS E101T1-GC

Benefits:

- ideal for welding 4130 and 8630 steels with good impact toughness before and after PWHT
- ideal for welding A519, A514, A710, A517, EQ56 and other Q&T grades
- excellent weldability in all positions with low spatter levels
- low diffusible hydrogen levels

Typical Applications:

- offshore platforms
- structural applications
- single and multiple pass applications with 100% CO₂

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.40
Silicon	0.25
Phosphorus	0.009
Sulphur	0.010
Nickel	0.76
Chromium	0.05
Molybdenum	0.26

Typical Diffusible Hydrogen: 3.7 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	102,000 (703 MPa)
Yield Strength (psi)	94,000 (648 MPa)
Elongation % in 2" (50mm)	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	64 ft.lb. (87J)
Avg. at -40°F (-40°C)	52 ft.lb. (71J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	100-230	24-27	3/4" (19 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E101T1-GC
- AWS A5.29M, E691T1-GC
- ASME SFA 5.29, E101T1-GC
- ABS, 100% CO₂ E101T1-GC

FabCO® 101

ALL POSITION

AWS E101T1-GM

Benefits:

- provides excellent welder appeal through a smooth stable arc, low smoke generations and smooth bead profile
- exceptional low temperature impact toughness
- excellent all-position performance with low spatter
- low diffusible hydrogen

Typical Applications:

- welding of HSLA steels and Q&T steels
- single and multiple pass applications with mixed gas

Typical Weld Metal Chemistry:

75% Ar/25% CO ₂	
Carbon	0.06
Manganese	1.60
Silicon	0.38
Phosphorus	0.011
Sulphur	0.011
Nickel	1.95
Molybdenum	0.01

Typical Diffusible Hydrogen: 3.8 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	110,000 (758 MPa)
Yield Strength (psi)	102,000 (703 MPa)
Elongation % in 2" (50mm)	20%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	78 ft.lb. (106J)
Avg. at -20°F (-30°C)	70 ft.lb. (95J)
Avg. at -40°F (-40°C)	52 ft.lb. (71J)
Avg. at -60°F (-50°C)	35 ft.lb. (47J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	22-28	3/4" (19 mm)
1/16" (1.6 mm)	170-400	22-32	1" (25 mm)

Shielding Gas: 75-80% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E101T1-GM
- AWS A5.29M, E691T1-GM
- ASME SFA 5.29, E101T1-GM
- ABS, 75% Ar/25% CO₂, ISO-18276-B, T694T1-1MA-N3M1-UH5 (0.045")

FabCO® XTREME™ 120

ALL POSITION

AWS E121T5-GC H4

Benefits:

- unique fast-freezing slag provides out-of-position capability
- low-hydrogen to minimize risk of hydrogen-induced cracking
- excellent impact toughness to resist cracking in severe applications
- high strength deposit for joining high strength steels

Typical Applications:

- welding of HSLA steels and Q&T steels
- heavy equipment & machinery repair
- shipbuilding
- offshore platforms

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.35
Silicon	0.14
Phosphorus	0.008
Sulphur	0.005
Nickel.....	3.90
Chromium	0.33
Molybdenum.....	0.22
Aluminum.....	0.45

Typical Diffusible Hydrogen: 3.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	125,000 (862 MPa)
Yield Strength (psi)	110,000 (758 MPa)
Elongation % in 2" (50mm)	17%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	100 ft.lb. (136J)
Avg. at -76°F (-60°C)	90 ft.lb. (122J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	175-300	22-25	3/4" (19mm)

Shielding Gas: 100% CO₂

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E121T5-GC H4
- AWS A5.29M, E831T5-GC H4
- ASME SFA5.29, E121T5-GC H4
- ABS, E121T5-GC H4
- DNV, V Y69MS (H5)



Fabshield® 71T8

ALL POSITION

AWS E71T8-Ni1J H8

Benefits:

- self-shielded; can be used outdoors without sheltering
- 1/16" (1.6 mm) diameter electrode provides an additional option in procedure development
- excellent impact toughness minimizes risk of cracking in severe applications
- optimized performance for welding in the vertical-down position on pipe

Typical Applications:

- API 5L Grade X70 and below (with proper procedures)
- oil & gas transmission pipelines
- oil & gas distribution pipelines

Typical Weld Metal Chemistry:

Carbon	0.02
Manganese	1.44
Silicon	0.06
Phosphorus	0.01
Sulphur	0.004
Nickel	0.95
Aluminum	1.00

Typical Diffusible Hydrogen: 3.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	80,000 (552 MPa)
Yield Strength (psi)	71,000 (490 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	255 ft.lb. (346J)
Avg. at -40°F (-40°C)	135 ft.lb. (183J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	150-225	17-21	3/4" (19 mm)
5/64" (2.0 mm)	175-250	17-20	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E71T8-Ni1J H8
- AWS A5.29M, E491T8-Ni1J H8
- ASME SFA 5.29, E71T8-Ni1J H8

Fabshield® 81N1

ALL POSITION

AWS E71T8-Ni1J H8

Benefits:

- self-shielded; can be used outdoors without sheltering
- fast-freezing slag is suitable for welding in all positions, and optimized for vertical-down
- excellent impact toughness minimizes risk of cracking in severe applications
- low-hydrogen electrode helps minimize the risk of hydrogen-induced cracking

Typical Applications:

- API 5L transmission pipeline
- Grade X65 and below steels (with proper procedures)
- shipbuilding & offshore

Typical Weld Metal Chemistry:

Carbon	0.03
Manganese	0.87
Silicon	0.05
Phosphorus	0.01
Sulphur	0.004
Nickel	0.95
Aluminum	0.67

Typical Diffusible Hydrogen: 6.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	71,000 (490 MPa)
Yield Strength (psi)	60,000 (414 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	205 ft.lb. (278J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	175-250	17-20	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E71T8-Ni1J H8
- AWS A5.29M, E491T8-Ni1J H8
- ASME SFA 5.29, E71T8-NiJ H8
- ABS, E71T8-Ni1J (5/64" diameter)
- EN758 T 38 4 1Ni Y N 1 H10

Fabshield® X80

ALL POSITION

AWS E81T8-Ni2J H8

Benefits:

- high strength deposit suitable for welding a wide range of materials
- low-hydrogen electrode minimizes the risk of hydrogen-induced cracking
- formulated for optimal performance in pipe-welding applications
- good impact toughness to minimize risk of cracking in critical applications

Typical Applications:

- API 5L Grade X80 and below (with proper procedures)
- oil & gas transmission pipeline
- oil & gas storage tanks
- certain structural applications

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	1.37
Silicon	0.06
Phosphorus	0.011
Sulphur	0.002
Nickel	2.38
Aluminum	0.93

Typical Diffusible Hydrogen: 7.3 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	94,000 (648 MPa)
Yield Strength (psi)	84,000 (579 MPa)
Elongation % in 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	105 ft.lbs. (142J)
Avg. at -40°F (-40°C)	95 ft.lbs. (129J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	175-225	18-19	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E81T8-Ni2J H8
- AWS A5.29M, E551T8-Ni2J H8
- ASME SFA 5.29, E81T8-Ni2J H8

Fabshield® 71K6

ALL POSITION

AWS E71T8-K6J H8

Benefits:

- self-shielded; can be used outdoors without sheltering
- easy slag removal reduces cleanup time and minimizes risk of inclusion
- excellent impact toughness minimizes risk of cracking in severe application
- excellent welding characteristics improve operator appeal and promote consistent high-quality welds

Typical Applications:

- offshore drilling rigs
- shipbuilding
- piping
- structural fabrication

Typical Weld Metal Chemistry:

Carbon	0.035
Manganese	0.82
Silicon	0.07
Phosphorus	0.011
Sulphur	0.004
Nickel	0.89
Chromium	0.06
Molybdenum	0.03
Aluminum	0.95

Typical Diffusible Hydrogen: 5.5 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	76,000 (524 MPa)
Yield Strength (psi)	62,000 (427 MPa)
Elongation % in 2" (50mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -40°F (-40°C)	295 ft.lbs. (400J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	175-275	18-20	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E71T8-K6J H8
- AWS A5.29M, E491T8-K6J H8
- ASME SFA 5.29, E71T8-K6J H8
- ABS, E71T8-K6J (5/64" diameter, all position)
- EN17632-A T 38 4 1Ni Y 1 H10

Fabshield® Offshore 71Ni Fabshield® X90

ALL POSITION

AWS E71T8-K6J H8

Benefits:

- self-shielded; can be used outdoors without sheltering
- fast-freezing slag allows for welding in all positions
- good impact toughness minimizes risk of cracking in critical applications
- easy slag removal reduces cleanup time and minimizes risk of inclusion

Typical Applications:

- certain structural applications
- shipbuilding
- offshore drilling rigs
- construction

Typical Weld Metal Chemistry:

Carbon	0.05
Manganese	1.21
Silicon	0.07
Phosphorus	0.011
Sulphur	0.004
Nickel	0.85
Aluminum	0.90

Typical Diffusible Hydrogen: 5.6 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	75,000 (517 MPa)
Yield Strength (psi)	61,000 (421 MPa)
Elongation % in 2" (50mm)	29%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	240 ft.lbs. (325J)
Avg. at -40°F (-40°C)	115 ft.lbs. (156J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	175-225	18-20	1" (25 mm)

Shielding Gas: None required

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.29, E71T8-K6J H8
- AWS A5.29M, E491T8-K6J H8
- ASME SFA 5.29, E71T8-K6J H8
- ABS, E71T8-K6J (5/64" diameter, all position)
- EN17632-A T 38 4 1Ni Y 1 H10
- DNV, IV YMS (H10)
- Lloyd's Register, 4YS (H10)

ALL POSITION

AWS E91T8-G H8

Benefits:

- high strength deposit suitable for welding a wide range of materials
- self-shielded; can be used outdoors without sheltering
- optimized performance for pipe welding applications
- excellent impact toughness minimizes risk of cracking in severe applications

Typical Applications:

- overmatch of API 5L Grade X80
- oil & gas transmission pipelines
- oil & gas distribution pipelines

Typical Weld Metal Chemistry:

Carbon	0.04
Manganese	1.56
Silicon	0.09
Phosphorus	0.008
Sulphur	0.004
Nickel	2.92
Aluminum	1.05

Typical Diffusible Hydrogen: 6.2 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	101,000 (696 MPa)
Yield Strength (psi)	90,000 (621 MPa)
Elongation % in 2" (50mm)	24%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	120 ft.lbs. (163J)
Avg. at -20°F (-30°C)	105 ft.lbs. (142J)
Avg. at -40°F (-40°C)	85 ft.lbs. (115J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
5/64" (2.0 mm)	175-250	18-20	1" (25 mm)

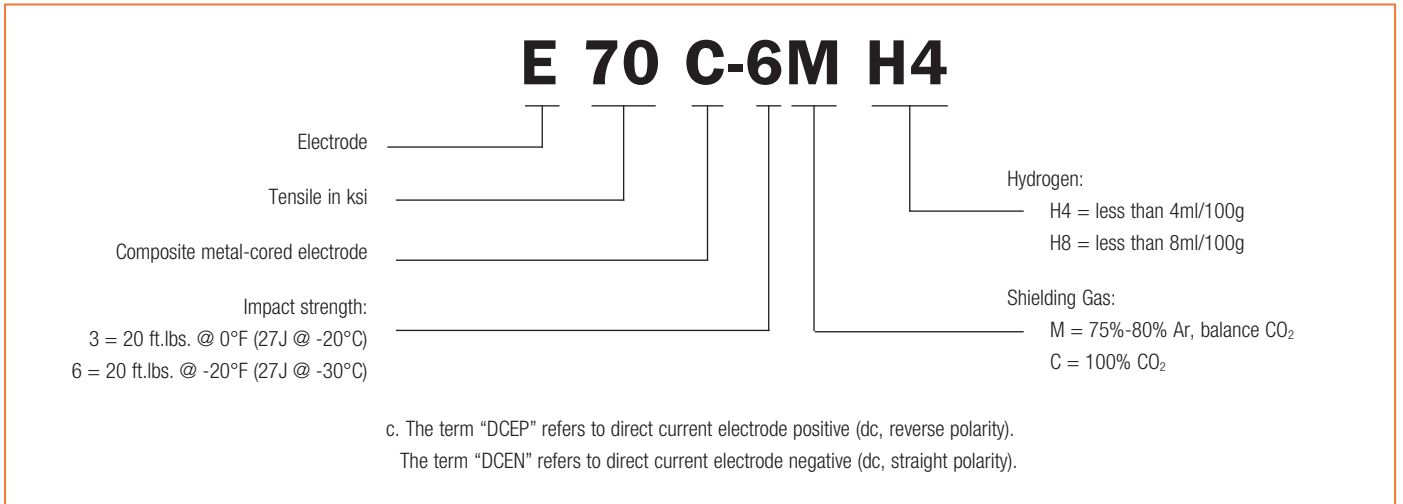
Shielding Gas: None required

Type of Current: DCEN

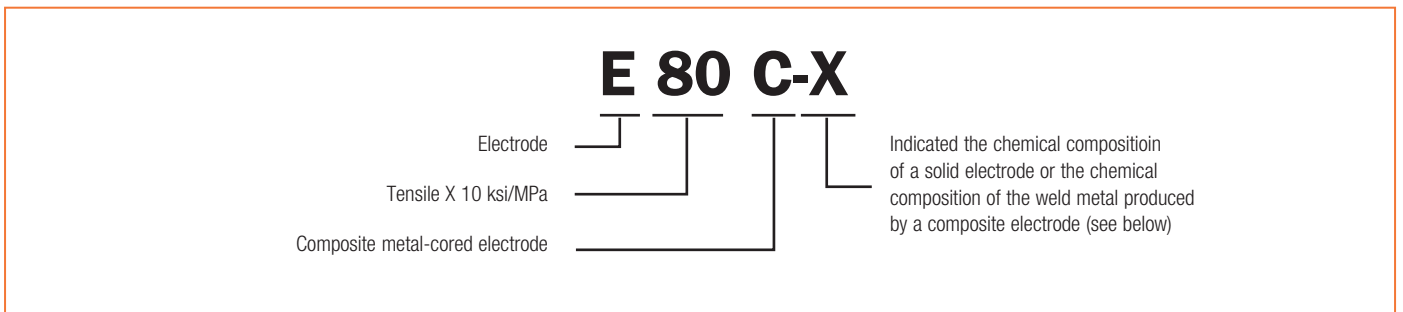
Approvals and Conformances:

- AWS A5.29, E91T8-G H8
- AWS A5.29M, E621T8-G H8
- ASME SFA 5.29, E91T8-G H8

How AWS Classifies Metal-Cored Wires, GMAW Process (AWS A5.18)



How AWS Classifies Low Alloy Metal-Cored (Composite) Wires, GMAW Process (AWS A5.28)



Composite Electrode Alloy Designator Chart

Chromium-Molybdenum Weld Metal

B2 1.00 - 1.50% Chromium, .40 - .65% Molybdenum

Nickel Weld Metal

Ni1 .80 - 1.20% Nickel

Ni2 1.75 - 2.25% Nickel

Manganese-Molybdenum Weld Metal

D2 1.60 - 2.25% Manganese, .25 - .55% Molybdenum

Manganese-Nickel-Molybdenum Weld Metal

K3 .75 - 2.25% Manganese, 1.20 - 2.60% Nickel, .25 - .65% Molybdenum

K4 1.20 - 2.25% Manganese, 1.75 - 2.60% Nickel, .20 - .65% Molybdenum, .20 - .60% Chromium

FabCOR® 86R

AWS E70C-6M H4

Benefits:

- high deposition rates and efficiencies improving productivity
- virtually no slag coverage and low spatter levels reduce cleanup time
- smooth arc characteristics improve operator appeal
- low diffusible hydrogen weld deposit minimizes risk of cracking

Typical Applications:

- railcar
- storage vessels
- steel structures
- earthmoving equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	95% Ar/5% CO ₂
Carbon	0.03	0.03
Manganese	1.44	1.68
Silicon	0.67	0.78
Phosphorus	0.008	0.002
Sulphur	0.015	0.009
Hydrogen.....	2.0 ml/100g	2.7 ml

Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000	85,000
	(558 MPa)	(586 MPa)
Yield Strength (psi)	69,000	75,000
	(476 MPa)	(517 MPa)
Elongation % in 2" (50mm)	30%	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	74 ft.lb. (101J)	50 ft.lb. (68J)
Avg. at -40°F (-40°C)	40 ft.lb. (54J)	32 ft.lb. (43J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	200-300	25-36	1/2" (13 mm)
.045" (1.2 mm)	200-400	27-36	3/4" (19 mm)
.052" (1.4 mm)	200-400	25-36	1" (25 mm)
1/16" (1.6 mm)	250-500	29-36	1" (25 mm)
5/64" (2.0 mm)	300-500	29-34	1 1/4" (31 mm)
3/32" (2.4 mm)	350-550	29-34	1 1/4" (31 mm)

Shielding Gas: 75-95% Ar/Balance CO₂, 95% Ar/5% O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- ABS, 80% Ar/20% CO₂, 3YSA H5 (0.035" - 1/16" diameters)
- Bureau Veritas, 80% Ar/20% CO₂, S3YMH5 (0.035" - 1/16" diameters)
- CWB, 75-95% Ar/Balance CO₂, E491C-6MJ-H4 (0.9 mm - 1.6 mm diameters)
- CWB, 95% Ar/5% O₂, E491C-6MJ-H4 (1.2 mm - 1.6 mm diameters)
- DNV, 80% Ar/20% CO₂, III Y40MS(H5)
- Lloyd's Register, 80% Ar/20% CO₂, 3Y40S H5
- AWS D1.8/D1.8M, 75% Ar/25% CO₂, [0.045" (1.2 mm), 1/16" (1.6 mm) diameter]
- EN17632-A: T 46 2 M 3 H5
- CE Marked per CPR 305/2011 (1.2 mm - 1.6 mm diameters)

FabCOR® Edge™

AWS E70C-6M H4

Benefits:

- higher deposition rates help increase travel speed and productivity
- excellent wetting characteristics and gap bridging capabilities
- virtually no silicon deposits at weld bead toe lines reduces cleanup time and minimizes risk of inclusions

Typical Applications:

- heavy equipment
- agriculture
- robotic and mechanized welding
- non-alloyed and fine grain steels

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.05	0.03
Manganese	1.33	1.50
Silicon	0.63	0.72
Phosphorus	0.006	0.001
Sulphur	0.007	0.012
Nickel.....	0.42	0.42
Hydrogen.....	1.5 ml/100g	2.1 ml

Typical Mechanical Properties (AW):

Tensile Strength (psi)	91,000	97,000
	(630 MPa)	(669 MPa)
Yield Strength (psi)	81,000	87,000
	(561 MPa)	(600 MPa)
Elongation % in 2" (50mm)	25%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -0°F (-20°C)	50 ft.lb. (68J)	56 ft.lb. (76J)
Avg. at -20°F (-30°C)	38 ft.lb. (52J)	47 ft.lb. (64J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-375	25-30	3/4" (19 mm)
.052" (1.4 mm)	250-400	24-30	3/4" (19 mm)
1/16" (1.6 mm)	250-450	25-32	3/4" (19 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- ABS, 80% Ar/20% CO₂, 3YSA H5 (0.045" - 1/16" diameters, flat position)
- ABS, 90% Ar/10% CO₂, 3YSA H5 (0.035" - 0.045" diameters, all position)
- AWS D1.8/D1.8M, 75% Ar/25% CO₂ [0.052" (1.4 mm) diameter]
- CWB, 75-95% Ar/Balance CO₂, E492C-6MJ-H4 (1.4 - 1.6 mm diameter)
- CWB, 75-95% Ar/Balance CO₂, E491C-6MJ-H4 (1.2 mm diameter)
- EN17632-A: T 46 3 M 3 H5
- CE Marked per CPR 305/2011 (0.9 - 1.6 mm diameter)

FabCOR® Edge™ MC

AWS E70C-6M H4

Benefits:

- higher deposition rate increases productivity compared to solid wire
- virtually no slag coverage helps reduce cleanup time
- smooth arc characteristics help to ensure consistent high-quality welds
- outstanding high-production performance for automation and mechanization

Typical Applications:

- robotic and mechanized welding
- general fabrication
- heavy equipment fabrication
- railcar

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	95% Ar/5% CO ₂
Carbon	0.04	0.04
Manganese	1.43	1.62
Silicon	0.62	0.77
Phosphorus	0.006	0.008
Sulphur	0.009	0.011
Hydrogen.....	2.8 ml/100g	2.9 ml

Typical Mechanical Properties (AW):

Tensile Strength (psi)	85,000	90,000
	(586 MPa)	(621 MPa)
Yield Strength (psi)	73,000	81,000
	(503 MPa)	(558 MPa)
Elongation % in 2" (50mm)	28%	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	45 ft.lb. (61J)	30 ft.lb. (41J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-400	25-36	3/4" (19 mm)
.052" (1.4 mm)	200-400	23-36	1" (25 mm)
1/16" (1.6 mm)	250-500	27-36	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO₂, E492C-6M-H4
- CWB, 95% Ar/5% O₂, E492C-6M-H4

FabCOR® Matrix™

AWS E70C-6M H4

Benefits:

- advanced feedability is suitable for high wire feed speeds, increases consumable life
- superior arc starting improves welding performance and consistency
- excellent wetting characteristics produces smooth weld beads with uniform fusion
- minimal silicon deposits reduces cleanup time, increases productivity
- superb manufacturing consistency provides repeatable welding performance and properties, suitable for automation

Typical Applications:

- heavy equipment
- high-production applications
- non-alloyed and fine grain steels
- robotic and mechanized welding

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.04	0.04
Manganese	1.30	1.38
Silicon	0.62	0.63
Phosphorus	0.008	0.010
Sulphur	0.022	0.023

Typical Diffusible Hydrogen:

2.2 ml/100g	1.4 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	71,000	85,000
	(490 MPa)	(586 MPa)
Yield Strength (psi)	67,000	73,000
	(462 MPa)	(503 MPa)
Elongation % in 2" (50mm)	24%	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	46 ft.lb. (62J)	40 ft.lb. (54J)
Avg. at -40°F (-40°C)	42 ft.lb. (57J)	38 ft.lb. (52J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-30	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-34	3/4" (19 mm)
1/16" (1.6 mm)	250-450	28-34	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO₂, E492C-6M-H4
- EN 17632-A: T46 4 M M 3 H5
- CE Marked per CPR 305/2011 (1.2 mm & 1.4 mm diameter electrodes)

Eclipse® Ultimet 716

AWS E70C-6M H4

Benefits:

- low fume generation rate increases welder appeal and improves the working environment
- excellent wetting characteristics assists in producing smooth weld beads with uniform fusion
- virtually no slag coverage reduces cleanup time and minimizes risk of inclusions
- low spatter reduces cleanup time, and increases productivity

Typical Applications:

- automotive
- railcars
- structural applications
- storage vessels

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.03	0.03
Manganese	1.48	1.67
Silicon	0.61	0.80
Phosphorus	0.013	0.013
Sulphur	0.009	0.012

Typical Diffusible Hydrogen:

2.5 ml/100g	3.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000	89,000
	(558 MPa)	(614 MPa)
Yield Strength (psi)	70,000	70,000
	(483 MPa)	(483 MPa)
Elongation % in 2" (50mm)	27%	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	75 ft.lb. (102J)	70 ft.lb. (95J)
Avg. at -20°F (-30°C)	60 ft.lb. (81J)	56 ft.lb. (76J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	150-250	25-29	5/8" (16 mm)
.045" (1.2 mm)	200-350	25-28	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-31	1" (25 mm)
1/16" (1.6 mm)	250-450	28-31	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO₂, E491C-6M-H4 (1.2 - 1.6 mm diameter electrodes only)

FabCOR® X-Cel™

AWS E70C-6M H4

Benefits:

- maximizes the benefits of using DCEN (straight) polarity
- provides a "soft arc" for reduced burn through and improved gap bridging capability
- deposition rates 30-40% higher than solid wire make the product ideally suited for semi-automatic, automatic and robotic welding on clean mild steel of thicknesses of 1/4" or less
- welds have exceptional bead appearance with minimal amounts of spatter

Typical Applications:

- non-alloyed and fine grain steels
- thin materials
- storage vessels
- automotive

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.06	0.06
Manganese	1.28	1.35
Silicon	0.65	0.70
Phosphorus	0.011	0.011
Sulphur	0.011	0.010

Typical Diffusible Hydrogen:

2.1 ml/100g	2.2 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	90,000	95,500
	(621 MPa)	(658 MPa)
Yield Strength (psi)	80,500	82,500
	(555 MPa)	(569 MPa)
Elongation % in 2" (50mm)	24%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	45 ft.lb. (61J)	42 ft.lb. (57J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	21-27	5/8" (16 mm)
.052" (1.4 mm)	250-400	24-29	5/8" (16 mm)
1/16" (1.6 mm)	300-450	26-30	3/4" (19 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEN

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4

FabCOR® 71

AWS E70C-6M H4

Benefits:

- higher deposition rate than solid wire electrodes
- excellent wetting and gap bridging capabilities
- maintains good mechanical properties following post-weld stress-relief up to three hours
- weld deposit contains less than 1% nickel and less than 248 HV10 hardness meeting NACE requirements demanded by many oil & gas applications

Typical Applications:

- single or multi-pass welds
- oil and gas industries
- pipe root, fill, and cap-pass welding
- storage and pressure vessels
- sour gas transmission and distribution pipe

Typical Weld Metal Chemistry:

80% Ar/25% CO ₂	
Carbon (C)	0.03
Manganese (Mn)	1.50
Silicon (Si)	0.30
Phosphorus (P)	0.008
Sulphur (S)	0.008
Nickel (Ni)	0.35
Chromium (Cr)	0.03
Molybdenum (Mo)	0.005
Vanadium (V)	0.005

Typical Diffusible Hydrogen: 3.3 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength	80,000 psi (552 MPa)
Yield Strength	71,000 psi (490 MPa)
Elongation % in 2" (50 mm)	28%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	85 ft-lbs (115J)
Avg. at -51°F (-46°C)	58 ft-lbs (77J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	26-35	5/8" (16mm)

Shielding Gas: 75-90% Ar/Balance CO₂,
35-50 cfh (17-24 l/min)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4

FabCOR® CVN

AWS E70C-6M H4

Benefits:

- excellent low-temperature impact toughness
- high deposition rates
- smooth arc characteristics improve operator appeal
- low diffusible hydrogen weld deposit
- capable of maintaining good mechanical properties after stress-relief

Typical Applications:

- heavy equipment
- general fabrication
- railcar
- oil and gas piping & storage vessels

Typical Weld Metal Chemistry:

75% Ar/25% CO ₂		90% Ar/5% CO ₂	
Carbon (C)	0.05	0.05	0.05
Manganese (Mn)	1.37	1.43	1.43
Silicon (Si)	0.18	0.23	0.23
Phosphorus (P)	0.008	0.007	0.007
Sulphur (S)	0.009	0.010	0.010
Nickel (Ni)	0.35	0.37	0.37

Typical Diffusible Hydrogen:

2.0 ml/100g	3.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength	77,000 psi (531 MPa)	86,000 psi (593 MPa)
Yield Strength	66,000 psi (455 MPa)	76,000 psi (524 MPa)
Elongation % in 2" (50 mm)	27%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	70 ft-lbs (95J)	95 ft-lbs (129J)
Avg. at -40°F (-40°C)	30 ft-lbs (41J)	80 ft-lbs (108J)
Avg. at -50°F (-45°C)	20 ft-lbs (27J)	75 ft-lbs (102J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-400	25-33	3/4" (19mm)
.052" (1.4 mm)	200-400	26-32	1" (25mm)
1/16" (1.6 mm)	250-500	26-34	1" (25mm)

Shielding Gas: 75-95% Ar/Balance CO₂,
35-50 cfh (17-24 l/min)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95 Ar/Balance CO₂, E492C-6MJ-H4

FabCOR® 702

AWS E70C-3C

Benefits:

- metal-cored wire producing high deposition rates and high travel speeds Increased productivity over solid wire
- excellent side wall and root penetration provides better fusion patterns than solid wire
- slag free welds reduce cleanup time compared to flux-core wire
- low hydrogen weld deposit results in high crack resistant welds

Typical Applications:

- steel structures
- storage vessels
- earthmoving equipment
- railcar

Typical Weld Metal Chemistry:

Carbon	0.09
Manganese	1.30
Silicon	0.56
Phosphorus	0.011
Sulphur	0.018

Typical Mechanical Properties (AW):

Tensile Strength (psi)	85,500 (590 MPa)
Yield Strength (psi)	69,600 (480 MPa)
Elongation % in 2" (50mm)	24.2%

Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	57 ft-lbs. (77J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	300-450	30-37	3/4" (19 mm)
3/32" (2.4 mm)	450-600	29-36	1" (25 mm)
7/64" (2.8 mm)	450-650	29-38	1" (25 mm)

Shielding Gas: 100% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-3C
- AWS A5.18M, E48C-3C
- ASME SFA 5.18, E70C-3C
- ABS, 100% CO₂, 3YSA H10 (0.045" - 1/16" diameter electrodes, all positions)

FabCOR® Element™ 70C6 FabCOR® F6

AWS E70C-6M H4

Benefits:

- extremely low manganese emissions assist with conformance to environmental regulations
- provides higher deposition rates than solid wires
- formulated for improved silicon removal
- balanced arc characteristics (smooth & penetrating)

Typical Applications:

- heavy equipment
- shipbuilding
- general fabrication
- railcar

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon (C).....	0.05	0.06
Manganese (Mn).....	0.53	0.58
Silicon (Si).....	0.80	0.76
Phosphorus (P).....	0.009	0.009
Sulphur (S).....	0.012	0.012
Nickel (Ni).....	0.45	0.49

Typical Diffusible Hydrogen:

2.0 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength	79,000 psi (545 MPa)	84,000 psi (579 MPa)
Yield Strength	68,000 psi (469 MPa)	71,000 psi (490 MPa)
Elongation % in 2" (50mm)	23%	23%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C) 35 ft-lbs (47J) 20 ft-lbs (27J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045"	200-350	25-30	3/4" (19mm)
.052"	250-400	26-30	3/4" (19mm)
1/16"	250-450	27-31	1" (25mm)

Shielding Gas: 75-90% Argon (Ar)/

Balance Carbon Dioxide (CO₂), 35-50 cfh (17-24 l/min)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, Ar + 5%-25% CO₂, E492C-6M-H4

AWS E70C-GS

Benefits:

- intended for single-pass joining applications using a wide range of thin-gauge carbon and HSLA steels
- higher deposition rates than solid wire increases productivity
- excellent gap-bridging capabilities suitable for automated and mechanized application
- formulated and intended for use with DCEN polarity minimizes risk of burn-through, improves deposition rate

Typical Applications:

- galvanized and zinc coated steels
- aluminized coated steels
- HVAC fabrication
- automotive and transportation
- thin-gauge steels

Typical Weld Metal Chemistry:

	80% Ar/20% CO ₂	90% Ar/10% CO ₂
Carbon.....	0.13	0.13
Manganese.....	1.55	1.64
Silicon.....	0.84	0.89
Phosphorus.....	0.009	0.010
Sulphur.....	0.016	0.012

Typical Mechanical Properties:

Tensile Strength (psi)	76,000 (524 MPa)	76,500 (527 MPa)
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Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	100-250	17-24	1/2" (13 mm)
.039" (1.0 mm)	150-300	18-24	5/8" (16 mm)
.045" (1.2 mm)	150-350	17-23	5/8" (16 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEN & DCEP

Approvals and Conformances:

- AWS A5.18, E70C-GS
- AWS A5.18M, E48C-GS
- ASME SFA 5.18, E70C-GS
- EN 17632-A: T3T Z Z M M 3
- EN 17632-B: T43 Z TG 0 M A
- CE Marked per CPR 305/2011

FabCOR® Edge™ Ni1

AWS E80C-Ni1 H4

Benefits:

- virtually no silicon deposits at weld bead toe lines reduces cleanup time, minimizes risk of inclusions
- excellent gap bridging capabilities minimizes burn-through, reduces part rejection
- higher deposition rates and travel speeds than solid wire increases productivity, more parts per hour
- high impact strengths at low temperatures helps resist cracking in severe applications

Typical Applications:

- high-strength low-alloy steels
- structural applications
- nickel-molybdenum steels
- weathering steel

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	95% Ar/5% O ₂
Carbon.....	0.05	0.04
Manganese.....	1.38	1.40
Silicon.....	0.65	0.57
Phosphorus.....	0.013	0.008
Sulphur.....	0.011	0.009
Nickel.....	1.00	1.01

Typical Diffusible Hydrogen:

2.1 ml/100g 3.4 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,000 (634 MPa)	85,000 (586 MPa)
Yield Strength (psi)	81,000 (558 MPa)	73,000 (503 MPa)
Elongation % in 2" (50mm)	25%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C) 44 ft.lb. (60J) 41 ft.lb. (56J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-29	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-31	1" (25 mm)
1/16" (1.6 mm)	250-450	25-30	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂,

95-99% Ar/Balance O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni1 H4
- AWS A5.28M, E55C-Ni1 H4
- ASME SFA 5.28, E80C-Ni1 H4
- CWB, 75-95% Ar/Balance CO₂, 95% Ar/5% O₂, E55C-Ni1-H4

FabCOR® 209

AWS E80C-Ni1 H4

Benefits:

- excellent gap bridging capability minimizes risk of burn-through, and part rejection
- higher deposition rates and travel speeds than solid wire increases productivity, more parts per hour
- high impact strengths at low temperatures help resist cracking in severe applications

Typical Applications:

- high-strength low-alloy steels
- structural applications
- single or multi-pass welding
- weathering steels

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	95% Ar/5% O ₂
Carbon	0.05	0.04
Manganese	1.38	1.40
Silicon	0.65	0.80
Phosphorus	0.013	0.008
Sulphur	0.011	0.009
Nickel	1.00	0.95

Typical Diffusible Hydrogen:

1.2 ml/100g	3.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,000	94,000
	(634 MPa)	(648 MPa)
Yield Strength (psi)	81,000	81,000
	(558 MPa)	(558 MPa)
Elongation % in 2" (50mm)	25%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C)	44 ft.lb. (60J)	61 ft.lb. (83J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-29	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-31	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂,
95% Ar/5% O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni1 H4
- AWS A5.28M, E55C-Ni1 H4
- ASME SFA 5.28, E80C-Ni1 H4
- CWB, 75-95% Ar/Balance CO₂, 95% Ar/5% O₂, E55C-Ni1-H4

FabCOR® 80N1

AWS E80C-Ni1 H8

Benefits:

- high deposition rates provide faster travel speed, higher productivity
- no slag covering reduces inter-pass cleanup
- good low temperature impacts reduces potential of weld bead cracking
- better penetration profile than solid wire reduces possibility of cold-lap and lack of fusion

Typical Applications:

- high-strength low-alloy steels
- heavy equipment
- weathering steel
- all position welding with pulse or short circuit

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.06	0.06
Manganese	0.80	1.05
Silicon	0.25	0.45
Phosphorus	0.006	0.006
Sulphur	0.011	0.012
Nickel	0.95	0.95
Copper	0.06	0.07
Molybdenum	0.14	0.14
Vanadium	< 0.01	< 0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000	86,000
	(565 MPa)	(593 MPa)
Yield Strength (psi)	74,000	77,000
	(510 MPa)	(531 MPa)
Elongation % in 2" (50mm)	24%	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C)	40 ft.lb. (54J)	30 ft.lb. (41J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-31	3/4" (19 mm)
.052" (1.4 mm)	250-400	26-32	3/4" (19 mm)

Shielding Gas: 75-95% Ar/Balance CO₂, 98% Ar/2% O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni1
- AWS A5.28M, E55C-Ni1
- ASME SFA 5.28, E80C-Ni1
- ABS, 80% Ar/20% CO₂, 3YSA
- CWB, 75-90% Ar/Balance CO₂, 95% Ar/5% O₂, E55C-Ni1-H8

FabCOR® 80N2

AWS E80C-Ni2 H4

Benefits:

- high deposition rates allow faster travel speed and higher productivity
- high Charpy-impacts toughness at sub-zero temperatures reduces potential of weld bead cracking
- higher nickel alloying content results in superior mechanical properties

Typical Applications:

- sub-zero temperature environments
- offshore
- shipbuilding

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.03	0.04
Manganese	0.77	1.09
Silicon	0.28	0.34
Nickel	2.23	2.26
Hydrogen	3.0 ml/100g	

Typical Mechanical Properties

(PWHT 1 Hr @ 1150°F/620°C):

Tensile Strength (psi)	78,200	90,000
	(539 MPa)	(621 MPa)
Yield Strength (psi)	65,800	77,000
	(454 MPa)	(531 MPa)
Elongation % in 2" (50mm)	30%	26%

Typical Charpy V-notch Impact Values

(PWHT 1 Hr @ 1150°F/620°C):

Avg. at -50°F (-45°C)	38 ft.lb. (52J)	—
Avg. at -80°F (-62°C)	—	48 ft.lb. (65J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-35	5/8" (16 mm)

Shielding Gas: 98% Ar/2% O₂, 75% Ar/25% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni2 H4
- AWS A5.28M, E55C-Ni2 H4
- ASME SFA 5.28, E80C-Ni2 H4

FabCOR® 90

AWS E90C-K3 H4

Benefits:

- excellent wetting characteristics assists in producing smooth weld beads with uniform fusion
- high tensile strength electrode suitable for quench and temper high-strength low-alloy steels
- high deposition rates possible at low heat inputs increasing productivity, minimizes Heat Affected Zone (HAZ)
- can be used with standard CV equipment promotes versatility, reduces equipment cost

Typical Applications:

- high-strength low-alloy steels
- quench and temper steels
- single or multi-pass welding
- heavy equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.06	0.06
Manganese	1.19	1.41
Silicon	0.25	0.31
Phosphorus	0.009	0.006
Sulphur	0.012	0.012
Nickel	1.84	1.83
Chromium	0.08	0.08
Molybdenum	0.34	0.34
Vanadium	0.00	0.01
Copper	0.06	0.06

Typical Diffusible Hydrogen:

2.3 ml/100g	4.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	102,000	110,000
	(703 MPa)	(758 MPa)
Yield Strength (psi)	94,000	104,000
	(648 MPa)	(717 MPa)
Elongation % in 2" (50mm)	23%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-50°C)	71 ft.lb. (96J)	23 ft.lb. (31J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-30	5/8" (16 mm)
.052" (1.4 mm)	250-400	27-31	3/4" (19 mm)
1/16" (1.6 mm)	300-450	29-31	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-K3 H4
- AWS A5.28M, E62C-K3 H4
- ASME SFA 5.28, E90C-K3 H4

FabCOR® 100

AWS E100C-K3

Benefits:

- higher deposition rates and travel speeds than solid wire increases productivity, more parts per hour
- high tensile strength deposit suitable for high strength materials
- excellent toughness helps minimize risk of cracking in severe applications
- maintains acceptable properties over a wide heat input range

Typical Applications:

- high-strength low-alloy steels
- quench and temper steels
- single or multi-pass welding
- structural applications

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.50
Silicon	0.38
Nickel	1.58
Molybdenum	0.34

Typical Mechanical Properties (AW):

Tensile Strength (psi)	113,300 (781 MPa)
Yield Strength (psi)	103,300 (712 MPa)
Elongation % in 2" (50mm)	21%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C)	49 ft.lb. (66J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-35	1/2" (13 mm)
.052" (1.4 mm)	250-400	28-34	1" (25 mm)
1/16" (1.6 mm)	300-450	28-34	1" (25 mm)

Shielding Gas: 90-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E100C-K3
- AWS A5.28M, E69C-K3
- ASME SFA 5.28, E100C-K3

FabCOR® 1100

AWS E110C-K4

Benefits:

- excellent wetting characteristics assist in producing smooth weld beads with uniform fusion
- high tensile strength electrode suitable for quench and temper high-strength low-alloy steels
- high deposition rates possible at low heat inputs increase productivity, minimize Heat Affected Zone (HAZ)
- can be used with standard CV equipment promoting versatility, reducing equipment cost

Typical Applications:

- high-strength low-alloy steels
- quench and temper steels
- single or multi-pass welding
- heavy equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.07	0.08
Manganese	1.52	1.50
Silicon	0.52	0.50
Phosphorus	0.004	0.003
Sulphur	0.007	0.005
Nickel	1.92	1.84
Chromium	0.18	0.24
Molybdenum	0.47	0.46

Typical Mechanical Properties (AW):

Tensile Strength (psi)	118,000	128,000
	(814 MPa)	(883 MPa)
Yield Strength (psi)	105,000	116,000
	(724 MPa)	(800 MPa)
Elongation % in 2" (50mm)	19%	17%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-50°C)	43 ft.lb. (58J)	28 ft.lb. (38J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-280	24-30	1/2" (13 mm)
1/16" (1.6 mm)	170-350	25-34	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E110C-K4
- AWS A5.28M, E76C-K4
- ASME SFA 5.28, E110C-K4
- CWB, 75-95% Ar/Balance CO₂, E76C-K4-H4

FabCOR® 80D2

AWS E90C-D2

Benefits:

- improved deposition rates compared to E80S-D2 solid wire increases productivity, produces more parts per hour
- good wetting characteristics assists in producing smooth weld beads with uniform fusion
- all-position capability with pulsed-spray transfer increases productivity, reduces cleanup time

Typical Applications:

- high-strength low-alloy steels
- single or multi-pass welding
- heavy equipment fabrication
- structural applications

Typical Weld Metal Chemistry:

	90% Ar/10% CO ₂	95% Ar/5% O ₂
Carbon	0.08	0.08
Manganese	1.80	1.34
Silicon	0.66	0.53
Phosphorus	0.005	0.003
Sulphur	0.008	0.006
Molybdenum	0.50	0.50
Copper	0.02	0.502

Typical Mechanical Properties (AW):

Tensile Strength (psi)	106,000	105,000
	(731 MPa)	(724 MPa)
Yield Strength (psi)	98,000	96,000
	(676 MPa)	(662 MPa)
Elongation % in 2" (50mm)	19%	17%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C) 42 ft.lb. (57J) 40 ft.lb. (54J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	150-250	26-28	5/8" (16 mm)
.045" (1.2 mm)	200-350	24-29	5/8" (16 mm)
.052" (1.4 mm)	250-400	25-30	3/4" (19 mm)
1/16" (1.6 mm)	250-450	24-29	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂,
95-99% Ar/Balance O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-D2
- AWS A5.28M, E62C-D2
- ASME SFA 5.28, E90C-D2

FabCOR® Edge™ D2

AWS E90C-D2

Benefits:

- virtually no silicon deposits at weld bead toe lines reduce cleanup time, minimize risk of inclusions
- excellent gap bridging capabilities minimize burn-through, reduce part rejection
- higher deposition rates and travel speeds than solid wire increase productivity, more parts per hour

Typical Applications:

- high-strength low-alloy steels
- single or multi-pass welding
- heavy equipment fabrication

Typical Weld Metal Chemistry:

	98% Ar/2% CO ₂	90% Ar/10% CO ₂
Carbon	0.05	0.05
Manganese	1.50	1.45
Silicon	0.50	0.45
Phosphorus	0.009	0.009
Sulphur	0.012	0.012
Molybdenum	0.50	0.45
Copper	0.05	0.05

Typical Mechanical Properties (AW):

Tensile Strength (psi)	98,000	107,000
	(676 MPa)	(738 MPa)
Yield Strength (psi)	90,000	95,000
	(621 MPa)	(655 MPa)
Elongation % in 2" (50mm)	25%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C) 55 ft.lb. (75J) 45 ft.lb. (61J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-28	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-29	3/4" (19 mm)
1/16" (1.6 mm)	300-450	26-29	1" (25 mm)

Shielding Gas: 95-98% Ar/Bal O₂,
75-95% Ar/Bal CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-D2
- AWS A5.28M, E62C-D2
- ASME SFA 5.28, E90C-D2

FabCOR® 80B2

AWS E80C-B2

Benefits:

- good wetting characteristics assists in producing smooth weld beads with uniform fusion
- excellent gap bridging capabilities helps minimize burn-through and part rejection rates
- suitable for welding 1/2 Cr-1/2 Mo, Cr-1/4 Mo and 1-1/4 Cr-1/2 Mo steels

Typical Applications:

- single or multi-pass welding of chrome-moly steels
- high temperature applications
- P11 pipe

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.06	0.07
Manganese	0.82	0.78
Silicon	0.29	0.42
Chromium	1.36	1.25
Molybdenum	0.50	0.47

Typical Mechanical Properties (PWHT 1 hr @ 1150°F/620°C):

Tensile Strength (psi)	83,300	96,900
	(574 MPa)	(668 MPa)
Yield Strength (psi)	69,600	83,700
	(480 MPa)	(577 MPa)
Elongation % in 2" (50mm)	23%	23%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	20-36	5/8" (16 mm)

Shielding Gas: 98% Ar/2% O₂,
75-90% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-B2
- AWS A5.28M, E55C-B2
- ASME SFA 5.28, E55C-B2

FabCOR® 90B3

AWS E90C-B3

Benefits:

- excellent arc characteristics improve operator appeal
- minimal number of silicon islands reduce cleanup time, increase productivity
- higher deposition rates than B3 solid wire increase productivity
- maintains high tensile strength at high service temperature
- designed with 2-1/4% Cr, 1% Mo for welding base materials with similar composition

Typical Applications:

- single or multi-pass applications
- 2-1/4% Cr & 1% Mo steels
- P22 pipe
- high service temperatures

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.07	0.09
Manganese	0.70	0.62
Silicon	0.35	0.39
Phosphorus	0.015	0.011
Sulphur	0.012	0.010
Chromium	2.30	2.07
Molybdenum	1.00	1.01

Typical Mechanical Properties

(PWHT 1 hr @ 1275°F/690°C):

Tensile Strength (psi)	94,000	103,000
	(648 MPa)	(710 MPa)
Yield Strength (psi)	80,000	91,000
	(552 MPa)	(627 MPa)
Elongation % in 2" (50mm)	23%	20%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-29	3/4" (19 mm)

Shielding Gas: 98% Ar/2% O₂,

75% Ar/25% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-B3
- AWS A5.28M, E62C-B3
- ASME SFA 5.28, E90C-B3

FabCOR® 4130 SR

AWS E90C-K3 H4

Benefits:

- higher deposition rate than solid wire electrodes
- specially formulated to maintain properties following extensive stress-relief hold time
- high-strength deposit with versatile chemistry
- weld deposit contains less than 1% nickel and less than 248 HV10 hardness meeting NACE requirements demanded by many oil & gas applications

Typical Applications:

- joining and repair of 4130 & 4140 steels
- oil and gas industries
- wellhead fabrication and repair
- high-strength low-alloy steels
- offshore industries

Typical Weld Metal Chemistry:

	80% Ar/20% CO ₂
Carbon (C)	0.07
Manganese (Mn)	1.62
Phosphorus (P)	0.010
Sulphur (S)	0.010
Silicon (Si)	0.25
Chromium (Cr)	0.04
Nickel (Ni)	0.90
Molybdenum (Mo)	0.43
Vanadium (V)	0.006
Copper (Cu)	0.032

Typical Diffusible Hydrogen: 2.0 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength	107,000 psi
	(738 MPa)
Yield Strength	98,000 psi
	(676 MPa)
Elongation % in 2" (50 mm)	18%

Typical Charpy V-notch Impact Values:

Avg. at -60°F (-50°C) 30 ft. lbs (41J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-32	5/8" (16mm)

Shielding Gas: 80% Ar/20% CO₂,

35-50 cfh (17-24 l/min)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-K3 H4
- AWS A5.28M, E62C-K3 H4
- ASME SFA 5.28, E90C-K3 H4

Tubular Wires

Carbon-Steel & Low-Alloy Gas-Shielded Flux-Cored Electrodes						
AWS Classification		Manufacturer				
		Hobart Filler Metals	Lincoln Electric	ESAB	Select Arc	
Carbon Steel	Flat & Horizontal	E70T-1C	FabCO® 11	—	Dual Shield 111-RB	Select Super 70
		E70T-1C/9C	FabCO® RXR, FabCO® RX7, FabCO® 72, FabCO® TR-70	Outershield® 70, Outershield® XLH-70, UltraCore® 70C	Dual Shield 700X	Select 71, Select 71A, Select 70TR
		E70T-1C/9C J	FabCO® Premier 70	—	—	—
		E70T-1C/9C/12C J	FabCO® 70XHP	—	Dual Shield R-70 Ultra®	—
		E70T-1M/9M	FabCO® 70XHP	—	Dual Shield 70 Ultra® Plus	Select 70TR, Select 97
		E70T-2C	FabCO® 73	—	—	Select 72, Select Super 72
	All Position	E70T-5CJ E70T-5MJ	FabCO® 85, FabCO® 55	UltraCore® 75C	Dual Shield T-75	Select 75
		E71T-1M	FabCO® Triple 7, FabCO® 711M	—	—	Select 710
		E71T-1M/9M	FabCO® Excel-Arc™ 71, FabCO® Hornet, FabCO® Element E71T1M	UltraCore® 71A75 Dual, UltraCore® 71A85, UltraCore HD-M	Dual Shield 7100 LC, Dual Shield 7100 Ultra®, Dual Shield 710X, Dual Shield 710X-M	Select 720A, Select 727, Select 717, Select 721
		E71T-1M/9M/12M	Formula XL-525, FabCO® 910	UltraCore® 712A80, UltraCore® HD-12M	Dual Shield II 712X, Dual Shield II 70 Ultra®	Select 737
		E71T-1M/9M/12M H4	FabCO® 712M	UltraCore® 712A80-H, UltraCore® SR-12	Dual Shield II 70T-12H4	—
		E71T-1C	FabCO® Triple 7, FabCO® 711M	—	Dual Shield 7100 Ultra®	Select 710
		E71T-1C/9C	FabCO® Excel-Arc™ 71, FabCO® Hornet, FabCO® Element E71T1C, FabCO® Triple 8	UltraCore® 71A75 Dual	Dual Shield 7100 LC, Dual Shield 710X, Dual Shield 710X-M	Select 720A, Select 727
		E71T-1C/9C/12C J	Formula XL-550, FabCO® 771	UltraCore® 712C, UltraCore® HD-12C	Dual Shield II 71 Ultra®, Dual Shield II 711X	—
Low-Alloy	Ni	E80T1-Ni1C E80T1-Ni1M	FabCO® 81N1	—	—	Select 81-Ni1
		E81T1-Ni1C	Formula XL-8Ni1, FabCO® 811N1	—	Dual Shield 810X-Ni1	Select 810-Ni1, Select 820-Ni1
		E81T1-Ni1C H4	FabCO® 811N1	UltraCore® 81Ni1C-H	—	—
		E81T1-Ni1M	Formula XL-8Ni1, FabCO® 811N1	—	Dual Shield 810X-Ni1	Select 810-Ni1, Select 820-Ni1
		E81T1-Ni1M H4	FabCO® 811N1	UltraCore® 81Ni1A75-H	Dual Shield 80-NiH4	—
		E81T1-Ni2C	FabCO® 811N2	UltraCore® 81Ni2C-H	Dual Shield 8000-Ni2	Select 810-Ni2, Select 820-Ni2
		E81T1-Ni2M	FabCO® 811N2	UltraCore® 81Ni2A75-H	—	Select 810-Ni2, Select 820-Ni2
		E91T1-Ni2C	FabCO® 911N2	—	Dual Shield 9000-C1	Select 910-Ni2
	K	E90T5-K2C	FabCO® 95K2	—	—	Select 95-K2
		E90T5-K2M	FabCO® 95K2	—	—	—
		E91T1-K2C	FabCO® 991K2	Outershield® 91K2-H	Dual Shield II 90-K2	Select 910-K2, Select 920-K2
		E91T1-K2M	FabCO® 991K2	—	—	Select 910-K2, Select 920-K2
		E100T1-K3C	FabCO® 101K3	—	—	Select 100-K3
		E110T5-K3C	FabCO® 115-K3	—	—	Select 115
		E110T5-K3M	FabCO® 115-K3	—	—	—
		E111T1-K3C	FabCO® 1101K3-C	—	—	Select 111-K3C
		E111T1-K3M	FabCO® 110K3-M, FabCO® 110	Pipelinier® G90M	Dual Shield II 110	Select 111-K3M
		E110T5-K4C	FabCO® 115	—	Dual Shield T-115	Select 115-K4
		E120T5-K4C	FabCO® 125K4	—	—	Select 125-K4
	B	E81T1-B2C	FabCO® 811B2	Cormet® 1	Dual Shield 8000-B2	Select 810-B2
		E81T5-B2M	FabCO® XTREME™ B2	—	—	—
		E90T1-B3C	FabCO® 91B3	—	—	Select 91-B3
		E91T1-B3C E91T1-B3M	FabCO® 911B3	Cormet® 2	Dual Shield 9000-B3	Select 910 B3
		E91T5-B3M	FabCO® XTREME™ B3	—	—	—
		E81T1-B6C	FabCO® B6	—	Dual Shield B6	—
		E81T1-B6M	FabCO® B6	—	Dual Shield B6	Select 810-B6
		E91T1-B9M	FabCO® B9	Supercore® F91	Dual Shield B9	Select 910-B9
	A	E81T1-A1C	FabCO® 811A1	—	Dual Shield 7000-A1	Select 810-A1
	W	E81T1-W2C	FabCO® 811W	—	—	Select 810-W

Carbon-Steel & Low-Alloy Self-Shielded Flux-Cored Electrodes

AWS Classification		Manufacturer			
		Hobart Filler Metals	Lincoln Electric	ESAB	Select Arc
Carbon Steel	E70T-4	Fabshield® 4	Innershield® NS-3M	Coreshield® 40	Select 74
	E70T-6	Fabshield® XLNT-6	Innershield® NR®-305	Coreshield® 6	—
	E70T-7	Fabshield® 7027	Innershield® NR®-311 Innershield® NR®-FAB 70	Coreshield® 7	—
	E71T1-8	Fabshield® XLR-8	Innershield® NR®-203 MP Innershield® NR®-232 Innershield® NR®-233	Coreshield® 8	—
	E71T-11	Fabshield® 21B	Innershield® NR®-211MP Innershield® NR®-212	Coreshield® 11	Select 701
	E71T-14	Fabshield® 23	Innershield® NR®-52	Coreshield® 14	Select 700GS
Low-Alloy	E71T8-Ni1	Fabshield® 71T8 Fabshield® 81N1	Innershield® NR®-203 Nickel (1%)	Coreshield® 8-Ni1 H5	—
	E81T8-Ni2	Fabshield® X80	Pipelinor® 81M	—	—
	E71T8-K6	Fabshield® 71K6 Fabshield® Offshore 71Ni	Innershield® NR®-207 Pipelinor® NR-207+	—	—
	E91T8-G	Fabshield® X90	Innershield® NR®-208 H	—	—

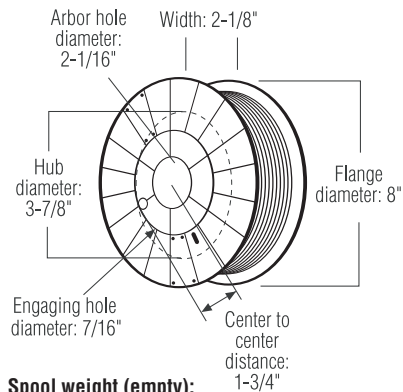
Carbon-Steel & Low-Alloy Metal-Cored Electrodes

AWS Classification		Manufacturer			
		Hobart Filler Metals	Lincoln Electric	ESAB	Select Arc
Carbon Steel	E70C-6M	FabCOR® 86R Matrix FabCOR® X-Cel	Metalshield® MC®-6 Metalshield® MC®-706 Metalshield® MC®-710XL®	Coreweld® 70 Coreweld® C6	Endurance Select 70C-6 Select 70C-8 Select 70C-10 Select 70C-T
	E70C-6M	FabCOR® Edge FabCOR® Edge MC	—	Coreweld® 77-HS	Select 70C-6LS
	E70C-6M	FabCOR® Ultimet 716	—	—	Select 70C-7
	E70C-3C	FabCOR® 702	—	—	—
	E70C-GS	FabCOR® F6	—	—	—
Low-Alloy	E80C-Ni1	FabCOR® 80N1 FabCOR® Vantage Ni1 FabCOR® 209	Metalshield® MC®-80Ni1	Coreweld® 80C-Ni1 Coreweld® 88HS Ni1	Select 80C-Ni1 Select 80C-Ni1LS
	E80C-Ni2	FabCOR® 80N2	—	—	Select 80C-Ni2
	E90C-K3	FabCOR® 90 FabCOR® 90	Metalshield® MC®-90	—	Select 90C-M2
	E110C-K3	FabCOR® 100	—	Coreweld® 110	—
	E110C-K4	FabCOR® 1100 FabCOR® 110	Metalshield® MC®-110	—	Select 110C-M2 Select 110C-K4
	E90C-D2	FabCOR® 80D2 FabCOR® Edge Vantage D2	—	—	Select 80C-D2
	E80C-B3	FabCOR® 80B2	—	—	—
	E90C-B3	FabCOR® 90B3	—	—	Select 90C-B3

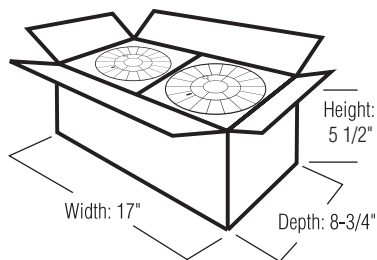
Tubular Wires

10-lb. Spool

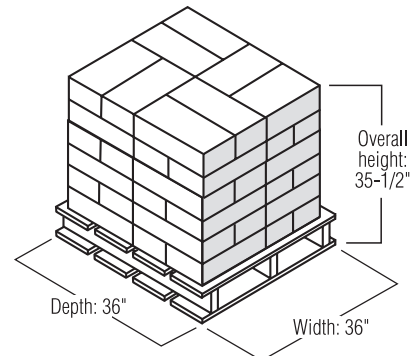
- Color-coded labels for easy wire identification
- Colorful packaging—great for P.O.P. displays
- Handy application and wire size reference chart on back
- Individually packed for increased portability and protection



Spool weight (empty):
0.8 lbs.



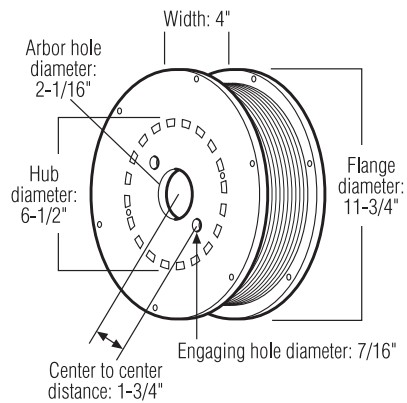
Weight: 40 lbs.
Spools per master carton: 4



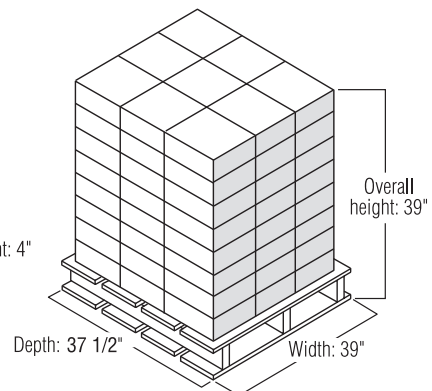
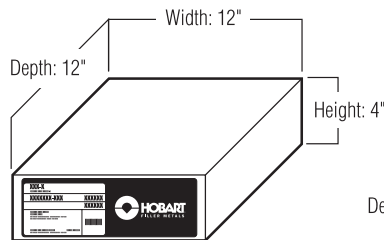
Weight: 1,920 lbs. net, 2,115 lbs. gross
Stacking sequence: 4 wide, 4 deep and 6 high
Master cartons per pallet: 48
Spools per pallet: 192

33-lb. Spool

- Uses standard spool hub – no special adapters required
- Durable – designed to withstand most kinds of everyday wear and tear
- Convenient, easy to change over



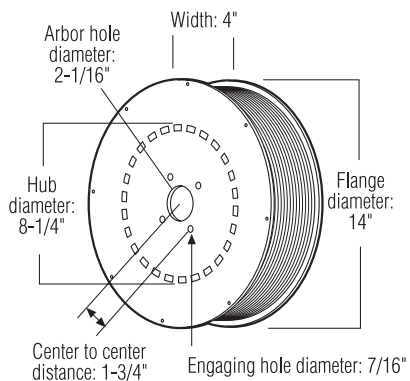
Spool weight (empty): 2.6 lbs.



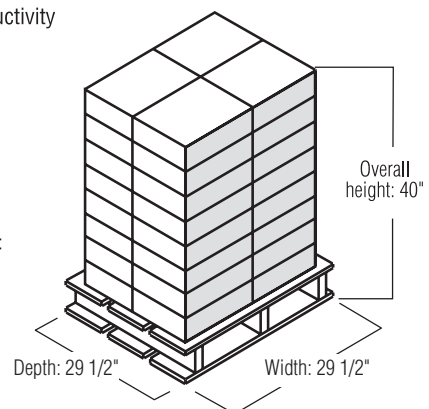
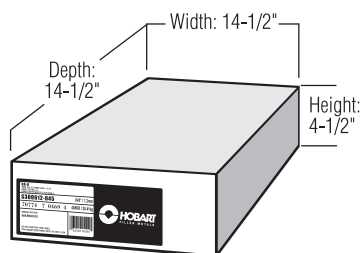
Weight: 2,376 lbs. net, 2,645 lbs. gross (est.)
Stacking sequence: 3 wide, 3 deep and 8 high
Spools per pallet: 72

50-lb. Spool

- Convenient, easy to change over
- Simplicity reduces change over time, increases productivity
- More wire on spool means fewer change overs



Spool weight (empty): 3 lbs.

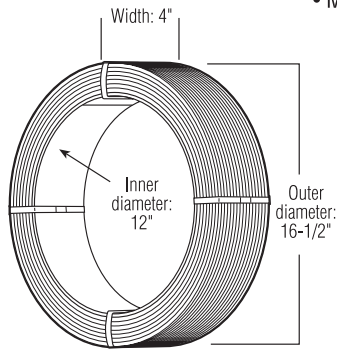


Weight: 1,600 lbs. net, 1770 lbs. gross (est.)
Stacking sequence: 2 wide, 2 deep and 8 high
Spools per pallet: 32

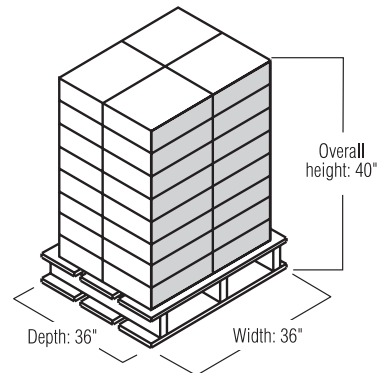
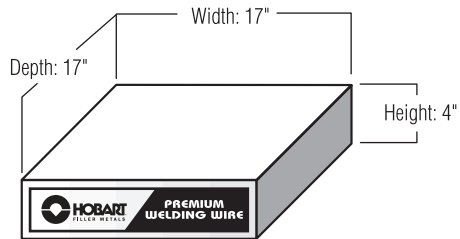
Tubular Wires

60-lb. Coil

- No spool to dispose of after wire is consumed
- Uses standard coil adapters
- More wire on coil means fewer changeovers



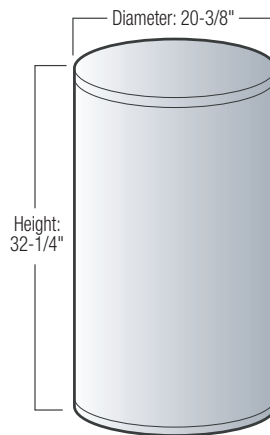
Coil weight (empty): 4 oz.



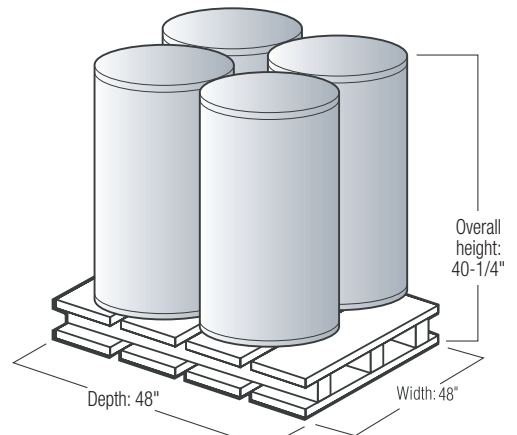
Weight: 1,920 lbs. net, 1,987 lbs. gross (est.)
Stacking sequence: 2 wide, 2 deep and 8 high
Spools per pallet: 32

500-lb. X-Pak™

- Precision straight wire payout for robotic & automatic welding
- Wire wander is essentially eliminated
- Requires cone/bonnet direct pull type (no arm recommended)
- Lazy susan not recommended



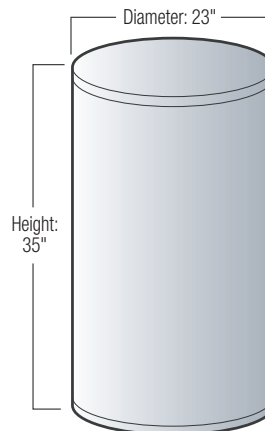
Drum weight (empty): 19 lbs.



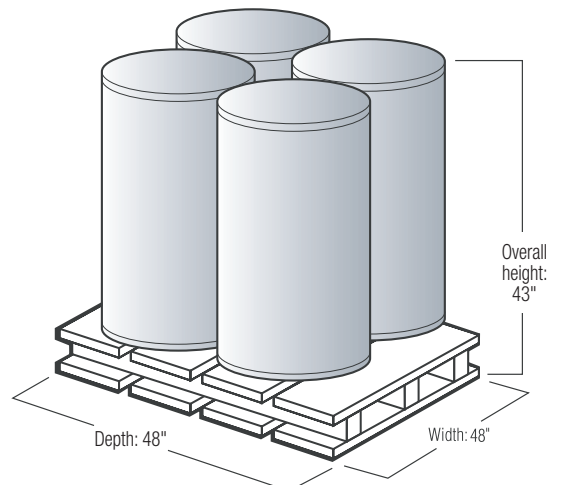
Weight: 2,000 lbs. net, 2,050 lbs. gross (est.)
Drums per pallet: 4

750-lb. X-Pak™

- Precision straight wire payout for robotic & automatic welding
- Wire wander is essentially eliminated
- Requires cone/bonnet direct pull type (no arm recommended)
- Lazy susan not recommended



Drum weight (empty): 20 lbs.



Weight: 3,000 lbs. net, 3,050 lbs. gross (est.)

How to Calculate

Use the tables below to estimate the quantity of filler metal required for horizontal fillet welds, and square groove and V-groove butt joints. In cases where joint information differs from the tables, simply substitute your numbers in the following formula:

$$W = D \\ (1-L)$$

Where:

W is the weight of the wire consumed

D is the weight of the steel deposited*

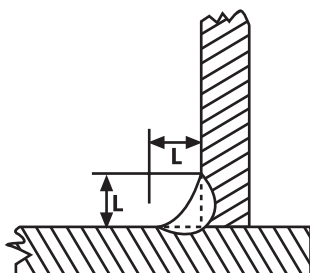
L is the total amount of wire losses

To determine D, calculate the area of the groove multiplied by the length; then multiply the result by 0.283, the volume-to-weight conversion factor for steel. If weld reinforcement is involved, be sure to add this amount into your calculation,

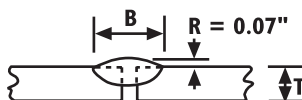
e.g., $D = [(Area\ of\ groove \times Length\ of\ groove \times 0.283) + Reinforcement\ (if\ applicable)]$

Table data for square and V-groove joints are based on the efficiency of stick electrodes. To calculate for flux-cored wires, divide D by .80; for solid wire, divide D by .90.

HORIZONTAL FILLET WELD

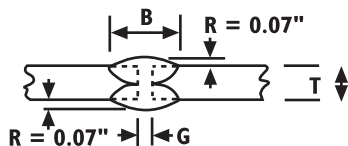


SQUARE GROOVE BUTT JOINT ...welded one side

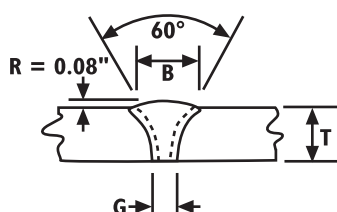


...welded two sides

If root of top weld is chipped or flame gouged and welded, add 0.07 lb. to steel deposited (equivalent to approx. 0.13 lb. of wires).



"V" GROOVE BUTT JOINT



Size of fillet L (in inches)	Steel deposited per linear foot of weld (lbs.)		Pounds of wires required per linear foot of weld (approx.)	
	Stick* (SMAW)	Flux-Cored (FCAW)	Solid (GMAW)	
1/8	0.027	.049	.034	.03
3/16	0.063	.114	.079	.07
1/4	0.106	.193	.133	.118
5/16	0.166	.302	.208	.184
3/8	0.239	.434	.298	.265
1/2	0.425	.773	.531	.472
5/8	0.663	1.205	.829	.737
3/4	0.955	1.736	1.194	1.061
1	1.698	3.087	2.123	1.890

Joint Dimensions (in inches)			Steel deposited per linear foot of weld (lbs.)		Pounds of wires required per linear foot of weld (approx.)	
Metal Thick T	Bead Width B	Root Open G	Without reinforcement	With reinforcement (R**=0.08")	Without reinforcement	With reinforcement (R**=0.08")
3/16	3/8	0	—	0.088	—	0.16
		1/16	0.020	0.109	0.04	0.20
1/4	7/16	1/16	0.027	0.129	0.05	0.23
		3/32	0.039	0.143	0.07	0.26
5/16	1/2	1/16	0.033	0.153	0.06	0.27
		3/32	0.050	0.170	0.09	0.30
1/8	1/4	0	—	0.119	—	0.21
		1/32	0.013	0.132	0.03	0.24
3/16	3/8	1/32	0.020	0.199	0.04	0.36
		1/16	0.040	0.218	0.07	0.39
1/4	7/16	1/16	0.053	0.261	0.10	0.47
		3/32	0.080	0.288	0.14	0.53

Joint Dimensions (in inches)			Steel deposited per linear foot of weld (lbs.)		Pounds of wires required per linear foot of weld (approx.)	
Metal Thick T	Bead Width B	Root Open G	Without reinforcement	With reinforcement (R**=0.08")	Without reinforcement	With reinforcement (R**=0.08")
1/4	0.207	1/16	0.085	0.143	0.15	0.25
5/16	0.311	3/32	0.173	0.258	0.31	0.46
3/8	0.414	1/8	0.282	.0394	0.50	0.70
1/2	0.558	1/8	0.489	0.641	0.87	1.15
5/8	0.702	1/8	0.753	0.942	1.35	1.68
3/4	0.847	1/8	1.088	1.320	1.94	2.35
1	1.138	1/8	1.930	2.240	3.45	4.00

*Includes scrap end and spatter loss. **R=Height of reinforcement.

Tubular Wires

Wire Diameter Inches (mm)	Solid Wire, in/lb	Flux-Cored, in/lb	Product Metal-Cored & Sub Arc, in/lb	Self-Shielded, in/lb
.030 (0.8 mm)	4,960	—	—	5,910
.035 (0.9 mm)	3,650	4,785	3,750	4,350
.045 (1.2 mm)	2,210	2,750	2,550	2,500
.052 (1.4 mm)	1,930	2,000	1,800	—
1/16 (1.6 mm)	1,160	1,450	1,300	1,300
5/64 (2.0 mm)	730	1,000	850	925
3/32 (2.4 mm)	520	625	590	615
7/64 (2.8 mm)	440	480	—	550
.120 (3.0 mm)	—	—	—	420
1/8 (3.2 mm)	350	355	320	—
5/32 (4.0 mm)	—	—	205	—

The inches per pound values may vary with each AWS class and wire type.

To Convert From	To	Multiply By
in	m	.0254
in	cm	2.54
in	mm	25.4
in ²	mm ²	645.2
mm ²	in ²	.00155
lb.	kg	.454
kg	lb.	2.2
ton (2,000 lbs.)	kg	907.2
kg	ton	.0011
metric ton (2,200 lbs.)	kg	998.8
kg	metric ton	.0010

To Convert From	To	Multiply By
lb./hr.	kg/hr.	.454
kg/hr.	lb./hr.	2.2
liters/min.	cu. ft./hr.	2.119
cu. ft./hr.	liters/min.	.4719
psi	kPa	6.895
kPa	psi	.145
MPa	psi	145
psi	MPa	.0069
ipm	mm/sec.	.423
ft. lbs.	Joule (J)	1.356
Joule (J)	ft. lbs.	.737

Wire Diameters	Approximate Equivalents in mm for Standard AWS Wire Diameters											
in	.024	.030	.035	.045	.052	1/16	5/64	3/32	7/64	1/8	5/32	
mm	.6	.8	.9	1.2	1.4	1.6	2.0	2.4	2.8	3.2	4.0	

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Tubular Wires

MEGAFIL 710M

FLAT & HORIZONTAL

AWS E70C-6M H4

EN 17632-A: T 46 6 M M 1 H5

Benefits:

- provides consistent chemical and mechanical properties
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- provides excellent low temp CVN (-50F)

Typical Applications:

- automatic & mechanized welding
- heavy equipment
- process piping
- root pass welding on pipe

Typical Weld Metal Chemistry:

80% Ar/20% CO ₂	
Carbon	0.04
Manganese	1.48
Silicon	0.65
Phosphorus	0.008
Sulphur	0.008

Typical Diffusible Hydrogen:

3.05 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	85,000
	(586 MPa)
Yield Strength (psi)	75,000
	(517 MPa)
Elongation % 2" (50mm)	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	85 ft.lb (115J)
Avg. at -40°F (-40°C)	65 ft.lb (88J)
Avg. at -50°F (-46°C)	65 ft.lb (88J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	200-375	25-30	5/8" (16 mm)
1/16" (1.6 mm)	250-500	27-34	1" (25 mm)

Shielding Gas: 75-95% Argon/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-80% Ar/Balance CO₂, E491C-6M H4
- DNV, 75-80% Ar/Balance CO₂, V Y46MS(H5), 100% CO₂, III Y40MS(H5)
- EN 17632-A: T 46 6 M M 1 H5
- Lloyd's Register, 82% Ar/18% CO₂, 5Y48S H5, 100% CO₂, 3Y40S H5

MEGAFIL 240M

FLAT & HORIZONTAL

AWS E80C-Ni1 H4

Benefits:

- provides consistent chemical and mechanical properties
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- great for root pass welding on higher strength pipe (x70)

Typical Applications:

- automatic & mechanized welding
- heavy equipment
- storage vessels

Typical Weld Metal Chemistry:

80% Ar/20% CO ₂		95% Ar/5% O ₂	
Carbon	0.04	Carbon	0.05
Manganese	1.23	Manganese	0.97
Silicon	0.50	Silicon	0.44
Phosphorus	0.005	Phosphorus	0.005
Sulphur	0.014	Sulphur	0.017

Typical Diffusible Hydrogen:

1.48 mL/100g 1.6 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	90,700	86,000
	(625 MPa)	(593 MPa)
Yield Strength (psi)	78,700	79,000
	(543 MPa)	(544 MPa)
Elongation % 2" (50mm)	27%	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C)	62 ft.lb (84J)	60 ft.lb (81J)
Avg. at -76°F (-60°C)	51 ft.lb (69J)	45 ft.lb (61J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	175-350	25-29	5/8" (16 mm)

Shielding Gas: 75-95% Argon (Ar)/Balance (CO₂), 95-99% Argon (Ar)/Balance Oxygen (O₂)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni1 H4
- AWS A5.28M, E55C-Ni1 H4
- ASME SFA 5.28, E80C-Ni1 H4

MEGAFIL 940M

FLAT & HORIZONTAL

AWS E80C-Ni2 H4

Benefits:

- provides consistent chemical and mechanical properties
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- minimizes risk of cracking in many critical applications with higher nickel alloying

Typical Applications:

- automatic & mechanized welding
- heavy equipment
- low service temperatures
- storage and pressure vessels

Typical Weld Metal Chemistry:

80% Ar/20% CO ₂		95% Ar/5% O ₂	
Carbon	0.06	Carbon	0.04
Manganese	1.43	Manganese	1.29
Silicon	0.54	Silicon	0.49
Phosphorus	0.006	Phosphorus	0.006
Sulphur	0.009	Sulphur	0.008

Typical Diffusible Hydrogen:

1.3 mL/100g 1.0 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	101,000	89,000
	(696 MPa)	(614 MPa)
Yield Strength (psi)	86,000	76,000
	(593 MPa)	(524 MPa)
Elongation % 2" (50mm)	21%	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-50°C)	50 ft.lb (68J)	-
Avg. at -80°F (-60°C)	42 ft.lb (56J)	42 ft.lb (57J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	100-325	17-29	3/4" (19 mm)

Shielding Gas: 75-95% Argon (Ar)/Balance (CO₂), 95-99% Argon (Ar)/Balance Oxygen (O₂)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni2 H4
- AWS A5.28M, E55C-Ni2 H4
- ASME SFA 5.28, E80C-Ni2 H4
- ABS, 82% Ar/18% CO₂, 5YQ690SA

MEGAFIL 1100M

FLAT & HORIZONTAL

AWS E120C-K4 H4

Benefits:

- provides consistent chemical and mechanical properties
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- suitable for many Quench & Temper (Q & T) and High-Strength Low-Alloy (HSLA) steels

Typical Applications:

- automatic & mechanized welding
- heavy equipment
- offshore
- Q & T and HSLA steels

Typical Weld Metal Chemistry:

80% Ar/20% CO₂

Carbon	0.07
Manganese	1.31
Silicon	0.29
Phosphorus	0.008
Sulphur	0.007

Typical Diffusible Hydrogen:

2.52 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	139,000 (958 MPa)
Yield Strength (psi)	128,000 (883 MPa)
Elongation % 2" (50mm)	18%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-50°C) 32 ft.lb (43J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	200-350	25-30	3/4" (19 mm)

Shielding Gas: 75-80% Argon (Ar)/Balance (CO₂)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E120C-K4 H4
- AWS A5.28M, E83C-K4 H4
- ASME SFA 5.28, E120C-K4 H4
- ISO 18276: T 89 4 Mn2NiCrMo M M 1 H5

MEGAFIL 713R

ALL POSITION

AWS E71T-1M J H4, E71T-1C H4, E71T-9M J H4, E71T-9C H4, E71T-12M J H4, E71T-12C H4, EN 17632-A: T 46 4 P M 1 H5, T 46 2 P C 1 H5

Benefits:

- provides consistent chemical and mechanical properties
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- excellent out of position performance
- very low moisture reabsorption after extended exposure

Typical Applications:

- automatic & mechanized welding
- process pipe / pipe shops
- non-alloyed and fine grain steel
- offshore/onshore pipe

Typical Weld Metal Chemistry:

80% Ar/20% CO ₂		100% CO ₂	
Carbon	0.02	Carbon	0.02
Manganese	1.18	Manganese	0.90
Silicon	0.46	Silicon	0.29
Phosphorus	0.012	Phosphorus	0.012
Sulphur	0.011	Sulphur	0.011

Typical Diffusible Hydrogen:

1.6 mL/100g 1.5 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	88,000 (607 MPa)	86,000 (593 MPa)
Yield Strength (psi)	81,000 (558 MPa)	79,000 (545 MPa)
Elongation % 2" (50mm)	26%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C) 65 ft.lb (89J) 25 ft.lb (34J)
Avg. at -40°F (-40°C) 60 ft.lb (81J) -

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	160-230	22-26	3/4" (19 mm)

Shielding Gas: 100% Carbon Dioxide (CO₂), 75-80% Argon (Ar)/Balance Carbon Dioxide (CO₂)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.20: E71T-1M J H4, E71T-1C H4, E71T-9M J H4, E71T-9C H4, E71T-12M J H4, E71T-12C H4E80C-Ni2 H4
- AWS A5.20M, E491T-1MJ H4, E491T-1C H4, E491T-9MJ H4 E491T-9C H4, E491T-12MJ H4, E491T-12C H4,
- ASME SFA 5.20, E71T-1M J H4, E71T-1C H4, E71T-9M J H4, E71T-9C H4, E71T-12M J H4, E71T-12C H4E80C-Ni2 H4
- CWB, 100% CO₂, E491T-9C-H4, 75-80% Ar/ Balance CO₂, E491T-9M-H4
- DNV, 100% CO₂, IV Y40MS(H5), 75-80% Ar/ Balance CO₂, IV Y40MS(H5)
- Lloyd's Register, 100% CO₂, 3Y40S H5, 82%Ar/18%CO₂, 3Y40S H5

MEGAFIL 821R

ALL POSITION

AWS E81T1-Ni1MJ H4, E81T1-Ni1 C H4

EN17632-A: T50 6 1Ni P M 1 H5

Benefits:

- provides consistent chemical and mechanical properties
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- weld deposit is able to absorb energy and resist crack formation and propagation
- allows out of position welding with a flat bead contour

Typical Applications:

- offshore/onshore pipe
- HSLA steels
- heavy equipment
- storage & pressure vessels

Typical Weld Metal Chemistry:

	80% Ar/ 20% CO ₂	100% CO ₂
Carbon	0.03	0.04
Manganese	1.32	0.93
Silicon	0.43	0.30
Phosphorus	0.011	0.011
Sulphur	0.010	0.010

Typical Diffusible Hydrogen:

1.6 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	86,000
	(593 MPa)
Yield Strength (psi)	77,000
	(531 MPa)
Elongation % 2" (50mm)	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	95 ft.lb (129J)
Avg. at -40°F (-40°C)	70 ft.lb (95J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	125-250	24-28	3/4" (19 mm)
1/16" (1.6 mm)	150-300	23-27	3/4" (19 mm)

Shielding Gas: 75-85% Argon (Ar) / Balance Carbon Dioxide (CO₂)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E81T1-Ni1MJ H4, E81T1-Ni1 C H4
- AWS A5.29M, E551T1-Ni1MJ H4, E551T1-Ni1 C H4
- ASME SFA 5.29, E81T1-Ni1MJ H4, E81T1-Ni1 C H4
- CWB, 75-80% Ar/Balance CO₂, E55T1-Ni1M-JH4
- DNV, 100% CO₂, IVY40MS (H5)
- Lloyd's Register, 82% Ar/18% CO₂, 5Y46S H5, 100% CO₂, 3Y40S H5

MEGAFIL 550R

ALL POSITION

AWS E91T1-K2 M J H4

EN17632-A: T55 6 Mn1Ni P M 1 H5

Benefits:

- very low moisture reabsorption after extended exposure
- minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- weld deposit is able to absorb energy and resist crack formation and propagation
- excellent out of position performance

Typical Applications:

- offshore/onshore pipe
- HSLA steels
- heavy equipment
- storage & pressure vessels
- structural fabrication

Typical Weld Metal Chemistry:

	80% Ar/ 20% CO ₂
Carbon	0.05
Manganese	1.47
Silicon	0.36
Phosphorus	0.010
Sulphur	0.010

Typical Diffusible Hydrogen:

2.89 mL/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	96,000
	(661 MPa)
Yield Strength (psi)	88,500
	(610 MPa)
Elongation % 2" (50mm)	25%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	96 ft.lb (130J)
Avg. at -40°F (-40°C)	84 ft.lb (114J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
0.045" (1.2 mm)	125-250	24-28	3/4" (19 mm)
0.052" (1.4 mm)	150-300	23-27	3/4" (19 mm)

Shielding Gas: 75-85% Argon (Ar) / Balance Carbon Dioxide (CO₂)

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.29, E91T1-K2 MJ H4
- AWS A5.29M, E621T1-K2 MJ H4
- ASME SFA 5.29, E91T1-K2 MJ H4
- ABS, 82% Ar/18% CO₂, 5YQ550SA H5
- DNV, 82% Ar/18% CO₂, V Y55MS
- Lloyd's Register, 82% Ar/18% CO₂, 5Y55S H5

SWX 110

EN ISO 14174: S A AB 1 67 AC H5

Benefits:

- carefully chosen formula provides excellent weldability and good bead appearance
- wide parameter window allows the use of high productivity procedures with optimal performance
- suitable for use in a wide range of industries and applications
- provides excellent slag removal, minimizing clean-up time and risk of inclusion
- moisture-proof packaging eliminates the need to re-dry unopened product

Typical Applications:

- general fabrication

Flux Type:

Agglomerated aluminate-basic flux

Basicity Index (Boniszewski): 1.4**Alloy Transfer:** Slightly Si & Mn Alloying**Density:** 1.2 kg/L**Grain Size:** 0.2 – 2.0 mm/ 10 – 70 mesh**Type of Current:** DCEP, AC**Typical Diffusible Hydrogen:**

<5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~35%
 CaO + MgO..... ~25%
 SiO₂ + TiO₂..... ~20%
 CaF₂..... ~15%

Packaging Available:

- 55 lb. (25 kg) EAE Bag
- 2200 lb. (1000 kg) DoubleBag™

Commonly Used With:

- SDX EM13K
- SDX S2
- SDX S2Si-EM12K
- SDX S3Si-EH12K
- SDX S2Mo-EA2
- SDX S3Ni1Mo0.2-ENi5
- SDX S2Ni1Cu
- SubCOR™ EM12K-S
- SubCOR™ EM13K-S
- SubCOR™ EM13K-S MOD
- SubCOR™ SL 731
- SubCOR™ SL 281 Cr

SWX 120

EN ISO 14174: S A AB 1 57 AC H5

Benefits:

- moderate basicity balances good weldability and mechanical properties
- high current carrying capacity allows the use of high productivity parameters
- formulation provides uniform deposit properties when welding thick sections
- excellent slag detachment is suitable for narrow and tubular joints
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- wind towers
- pressure vessels
- storage tanks
- heavy equipment

Flux Type:

Agglomerated aluminate-basic flux

Basicity Index (Boniszewski): 1.9**Alloy Transfer:** Slightly Mn Alloying**Density:** ~1.2 kg/L**Grain Size:** 0.2 – 2.0 mm/ 10 – 70 mesh**Type of Current:** DCEP, AC**Typical Diffusible Hydrogen:**

<5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~35%
 CaO + MgO..... ~25%
 SiO₂ + TiO₂..... ~20%
 CaF₂..... ~20%

Packaging Available:

- 55 lb. (25 kg) EAE Bag
- 2200 lb. (1000 kg) DoubleBag™

Commonly Used With:

- SDX EM13K
- SDX S2
- SDX S2Si-EM12K
- SDX S2Mo-EA2
- SDX S3Si-EH12K
- SubCOR™ EM12K-S
- SubCOR™ EM13K-S
- SubCOR™ EM13K-S MOD
- SubCOR™ 92-S
- SubCOR™ SL 731

SWX 130

EN ISO 14174: S A AB 1 67 AC H5

Benefits:

- specially formulated for high-current two-run and multi-wire welding (up to 5 wires)
- excellent slag removal (almost self-peeling) helps minimize clean-up time
- provides a consistent wide, flat bead contour to help minimize coating costs
- can be used with a wide range of wires to match mechanical properties of steel grades up to X100
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- longitudinal pipe seams
- circumferential pipe seams
- two-run welding
- pipe mills

Flux Type:

Agglomerated aluminate-basic flux

Basicity Index (Boniszewski): 1.5**Alloy Transfer:** Slightly Si & Mn Alloying**Density:** 1.2 kg/L**Grain Size:** 0.2 – 2.0 mm/ 10 – 70 mesh**Type of Current:** DCEP, AC**Typical Diffusible Hydrogen:**

<5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~30%
 CaO + MgO..... ~25%
 SiO₂ + TiO₂..... ~20%
 CaF₂..... ~15%

Packaging Available:

- 55 lb. (25 kg) EAE Bag
- 2200 lb. (1000 kg) DoubleBag™

Commonly Used With:

- SDX S2
- SDX S2Si-M12K
- SDX S3Si-EH12K
- SDX S2Mo-EA2
- SDX S3Mo-EA4
- SDX S3TiB
- SDX S3MoTiB
- SubCOR™ EM12K-S
- SubCOR™ EM13K-S
- SubCOR™ EM13K-S MOD
- SubCOR™ SL 735 1W-5W

SWX 135

EN ISO 14174: S A AB 1 67 AC H5

Benefits:

- specially formulated for high-current two-run and multi-wire welding (up to 3 wires)
- excellent slag removal (almost self-peeling) helps minimize clean-up time
- provides a consistent wide, flat bead contour to help minimize coating costs
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- spiral pipe seams
- pipe mills

Flux Type:

Agglomerated aluminate-basic flux

Basicity Index (Boniszewski): 1.3

Alloy Transfer: Slightly Si & Mn Alloying

Density: 1.2 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP, AC

Typical Diffusible Hydrogen:

<5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~35%
CaO + MgO ~20%
SiO₂ + TiO₂ ~25%
CaF₂ ~15%

Packaging Available:

- 55 lb. (25 kg) EAE Bag
- 2200 lb. (1000 kg) DoubleBag™

Commonly Used With:

- SDX S2
- SDX S2Si-EM12K
- SDX S2Mo-EA2
- SDX S3Mo-EA4
- SDX S3TiB
- SDX S3MoTiB
- SubCORT™ EM12K-S
- SubCORT™ EM13K-S
- SubCORT™ EM13K-S MOD
- SubCORT™ SL 735 1W-5W

SWX 140

EN ISO 14174: S A FB 1 57 AC H5

Benefits:

- moderate basicity balances good weldability and mechanical properties
- high current carrying capacity allows the use of high productivity parameters
- formulation provides uniform deposit properties when welding thick sections
- excellent slag detachment is suitable for narrow and tubular joints
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- offshore
- shipbuilding
- pressure vessels
- pipe double jointing

Flux Type:

Agglomerated fluoride-basic flux

Basicity Index (Boniszewski): 2.0

Alloy Transfer: Slightly Mn Alloying

Density: ~1.2 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP, AC

Typical Diffusible Hydrogen:

<5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~30%
CaO + MgO ~25%
SiO₂ + TiO₂ ~20%
CaF₂ ~20%

Packaging Available:

- 55 lb. (25 kg) EAE Bag
- 2200 lb. (1000 kg) DoubleBag™

Commonly Used With:

- SDX EM13K
- SDX S2
- SDX S2Si-EM12K
- SDX S2Mo-EA2
- SubCORT™ EM12K-S
- SubCORT™ EM13K-S
- SubCORT™ EM13K-S MOD
- SubCORT™ 92-S
- SubCORT™ 100F3-S
- SubCORT™ SL 735 1W-5W
- SubCORT™ SL 840 HC
- SubCORT™ SL 741

SWX 150

EN ISO 14174: S A FB 1 55 AC H5

Benefits:

- formulated to provides uniform deposit properties when welding thick sections
- high basicity performance provides excellent toughness for demanding applications
- suitable for use with many wires intended for high-strength low-alloy steels
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- offshore structures
- offshore wind towers
- civil construction
- boiler & pressure vessels
- nuclear applications
- double-jointing
- high-strength high-toughness applications

Flux Type:

Agglomerated fluoride-basic flux

Basicity Index (Boniszewski): 3.3

Alloy Transfer: None

Density: 1.1 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP, AC

Typical Diffusible Hydrogen:

<5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~20%
CaO + MgO ~35%
SiO₂ + TiO₂ ~15%
CaF₂ ~25%

Packaging Available:

- 50 lb. (22 kg) EAE Bag

Commonly Used With:

- SDX
 - EM13K, S2Si-EM12K, S3Si-EH12K, S4-EH14, S2Mo-EA2, S2Ni1-ENi1, S2Ni2-ENi2, S3Ni1Mo0.2-ENi5, S3Ni1Mo-EF3, S3Ni2.5CrMo, CrMo1-EB2R, CrMo2-EB3R
- SubCORT™
 - EM12K-S, EM13K-S, EM13K-S MOD, 92-S, F2-S, 100F3-S, 120-S, N1-S, B2-S
- SubCORT™ SL
 - 731, 741, 742, P1, P1 MOD, P11, P12 MOD, P36, P22, P24, P5, P9, P91, P92

SWX 160

SWX 160

EN ISO 14174: S A FB 1 55 AC H5

Benefits:

- specially formulated for low residual (tramp) element content; excellent for applications requiring low X-factor
- high-basicity flux offers very high impact toughness; suitable for use in demanding applications
- intended for use with a wide variety of Hobart low-alloy wires.
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- pressure vessels
- nuclear applications
- high-strength low-alloy steels
- chrome-moly steels
- offshore fabrication

Flux Type:

Agglomerated fluoride-basic flux

Basicity Index (Boniszewski): 2.7

Alloy Transfer: None

Density: ~1.1 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP, AC

Typical Diffusible Hydrogen: <5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~20%
 CaO + MgO ~35%
 SiO₂ + TiO₂ ~15%
 CaF₂ ~25%

Commonly Used With:

- SDX S3Si-EH12K
- SDX CrMo1-EB2R
- SDX CrMo2-EB3R
- SDX S3Ni2.5CrMo
- SubCOR™ 120-S
- SubCOR™ SL 742
- SubCOR™ SL P91

Packaging Available:

- 55 lb. (25 kg) EAE Bag

HA-495

Benefits:

- active flux formulation provides excellent bead appearance and wetting action, even when welding at very high travel speeds
- active flux formula provides excellent resistance to porosity caused by rust or mill scale
- excellent slag removal helps reduce clean up time to improve productivity

Typical Applications:

- single or double-pass fillet welds
- multi-pass welding [1" (25 mm) max.]
- thin-wall tanks & pressure vessels
- light structural
- railcar

Flux Type:

Agglomerated active flux

Basicity Index (Boniszewski): ~0.8

Alloy Transfer: Si & Mn Alloying

Grain Size: 0.2 – 1.6 mm/ 12 – 65 mesh

Type of Current: DCEP, AC

Typical Composition:

Al₂O₃ + TiO₂ ~60%
 CaO + MgO + CaF ~20%
 SiO₂ ~5%
 MnO + FeO ~15%

Packaging Available

- 55 lb. (25 kg) Bag

Commonly Used With:

- SubCOR™ EM12K-S
- SubCOR™ EM13K-S

HN-511

Benefits:

- highly basic flux provides very good weld metal toughness for demanding service
- provides very good weldability and slag removal compared to other high-basicity fluxes

Typical Applications:

- structural & bridge fabrication
- offshore structures
- shipbuilding
- heavy equipment

Flux Type:

Agglomerated basic flux

Basicity Index (Boniszewski): ~4

Alloy Transfer: Slightly Si & Mn Alloying

Grain Size: 0.2 – 1.6 mm/ 12 – 65 mesh

Type of Current: DCEP, AC

Typical Composition:

Al₂O₃ + TiO₂ ~20%
 CaO + MgO + CaF ~68%
 SiO₂ ~7%
 MnO + FeO <1%

Packaging Available

- 55 lb. (25 kg) Bag

Commonly Used With:

- SubCOR™ EM13K-S
- SubCOR™ EM13K-S MOD
- SubCOR™ N1-S
- SubCOR™ 92-S
- SubCOR™ B2-S
- SubCOR™ B3-S
- SubCOR™ F2-S
- SubCOR™ 4130 SR
- SubCOR™ 100F3-S
- SubCOR™ 120-S

HN-590

Benefits:

- moderate basicity balances good mechanical properties and good welding characteristics
- provides good slag removal for reduced clean-up time, and minimized risk of inclusion in narrow-groove applications
- provides good resistance to cracking and porosity to help minimize risk of part rework during welding or in service.

Typical Applications:

- structural & bridge fabrication
- high-strength low-alloy (HSLA) steels
- quench & tempered (Q&T) steels

Flux Type:

Agglomerated basic flux

Basicity Index (Boniszewski): ~1.7

Alloy Transfer: Slightly Si & Mn Alloying

Grain Size: 15 – 60 mesh

Type of Current: DCEP, AC

Typical Composition:

Al₂O₃ + TiO₂ ~35%
CaO + MgO + CaF ~38%
SiO₂ ~10%
MnO + FeO ~15%

Packaging Available

- 55 lb. (25 kg) Bag

Commonly Used With:

- SubCOR™ EM12K-S
- SubCOR™ EM13K-S
- SubCOR™ EM13K-S MOD
- SubCOR™ W-S
- SubCOR™ N1-S
- SubCOR™ 92-S
- SubCOR™ F2-S
- SubCOR™ 100F3-S

SWX 010

Benefits:

- a backing powder intended for use with copper supports
- specially formulated to allow one-sided welding with consistent and smooth root pass reinforcement profile
- excellent slag detachability
- non-alloying: has no influence on weld metal properties
- supplied in re-sealable moisture-proof cans

Typical Applications:

- single-sided welding
- shipbuilding
- spiral pipe mills

Flux Type:

Agglomerated backing flux

Alloy Transfer: None

Density: ~1.1 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Primary Flux Composition:

Al₂O₃ + MnO ~15%
CaO + MgO ~50%
SiO₂ + TiO₂ ~30%
CaF₂ ~0%

Packaging Available:

- 44 lb. (20 kg) Steel Can

Wire/Flux Combination Classifications (AWS A5.17)

Wire Trade Name	Flux Trade Name								
	SWX 110	SWX 120	SWX 130	SWX 135	SWX 140	SWX 150	HA-495	HN-511	HN-590
SDX EM13K	F7A4-EM13K	F7A4-EM13K	-	-	F7A4-EM13K	F7A4-EM13K	-	-	-
SDX S2Si-EM12K	F7A4-EM12K	F7A6-EM12K	F7A4-EM12K	F7A4-EM12K	F7A6-EM12K	F7A6-EM12K	-	-	-
SDX S3Si-EH12K	F7A6-EH12K	-	F7A6-EH12K	-	-	F7A8-EH12K	-	-	-
SDX S3Si-EH12K	F7P6-EH12K	-	-	-	-	F7P8-EH12K	-	-	-
SubCOR™ EM12K-S	F7A4-EC1	F7A6-EC1	F7A6-EC1	F7A4-EC1	-	F7A4-EC1	F7A2-EC1	-	F7A6-EC1
SubCOR™ EM13K-S	F7A6-EC1	F7A8-EC1	F7A6-EC1	F7A6-EC1	F7A8-EC1	F7A8-EC1	F7A4-EC1	F7A10-EC1	F7A8-EC1
SubCOR™ EM13K-S	F7P6-EC1	F7P8-EC1	F7P6-EC1	F7P6-EC1	-	F6P8-EC1	-	F7P10-EC1	F7P8-EC1
SubCOR™ EM13K-S MOD	F7A6-EC1	F7A8-EC1	F7A6-EC1	F7A6-EC1	F7A10-EC1	F7A8-EC1	-	F7A8-EC1	F7A8-EC1
SubCOR™ EM13K-S MOD	F7P6-EC1	F7P8-EC1	F7P8-EC1	F7P8-EC1	F7P8-EC1	F7P8-EC1	-	F7P4-EC1	F7P4-EC1

Wire/Flux Combination Classifications (EN ISO 14171-A)

Wire Trade Name	Flux Trade Name					
	SWX 110	SWX 120	SWX 130	SWX 135	SWX 140	SWX 150
SDX S2	S 38 4 AB S2	S 38 5 AB S2	S 38 4 AB S2	S 38 4 AB S2	S 38 5 FB S2	-
SDX S2Si-EM12K	S 38 4 AB S3Si	S 38 5 AB S2Si	S 38 4 AB S2Si	S 38 4 AB S2Si	S 38 5 FB S2Si	S 38 5 FB S2Si
SDX S3Si-EH12K	S 42 4 AB S3Si	-	S 46 6 AB S3Si	-	-	S 46 6 FB S3Si
SDX S3Si-EH12K	S 3T 2 AB S3Si	-	-	-	-	-
SDX S4-EH14	-	-	-	-	-	S 50 4 FB S4
SubCOR™ SL 731	S 46 4 AB T3	S 46 4 AB T3	-	-	-	S 46 4 FB T3
SubCOR™ SL 840 HC	-	-	-	-	S 46 6 FB T3Ni1	-

Approval Summary: Carbon Steel Wires										
Wire	Flux	ABS	BV	DNV	GL	LR	CWB	DB	TüV	CE
SDX EM13K	SWX 150	4YM								
SDX S1-EL12	SWX 110									X
SDX S2	SWX 110				4YM				X	X
SDX S2	SWX 120							X	X	X
SDX S2	SWX 135									X
SDX S2	SWX 140				4YTM				X	X
SDX S2	SWX 150	3YM	A3YM	III YM	3YM	BF 3YM NR			X	X
SDX S2Mo-EA2	SWX 120						F8A6-EA2-A4			X
SDX S2Mo-EA2	SWX 135									X
SDX S2Si-EM12K	SWX 110	4Y400M	4Y40M	IVY40M	4YM	4Y40M	F49A4-EM12K	X	X	X
SDX S2Si-EM12K	SWX 120						F49A4-EM12K	X	X	X
SDX S2Si-EM12K	SWX 135									X
SDX S2Si-EM12K	SWX 140					-				X
SDX S2Si-EM12K	SWX 150					BF 5Y46M H5	F49A6-EM12K			X
SDX S3-EH10K	SWX 150								X	
SDX S3Si-EH12K	SWX 110						F49A6-EH12K			X
SDX S3Si-EH12K	SWX 120						F49A6-EH12K			X
SDX S3Si-EH12K	SWX 150	5YQ460	A 5Y46M H5	V Y46(H5)	6Y46MH5	BF 5Y46M H5	F49A6-EH12K		X	X
SubCOR™ EM13K-S	SWX 110									
SubCOR™ EM13K-S	SWX 150	4YM								
SubCOR™ EM13K-S MOD	SWX 110						F49A6-EC1			X
SubCOR™ EM13K-S MOD	SWX 120						F49A6-EC1			
SubCOR™ EM13K-S MOD	SWX 150	4YM								
SubCOR™ SL 731	SWX 110									X
SubCOR™ SL 731	SWX 150	3YM H5	3YM	III YM	3YM	5Y46 H5		X	X	X
SubCOR™ SL 840 HC	SWX 140			3YM	6YM					X

Please consult product datasheets for a complete list of product approvals, as well as part numbers for standard packaging, and typical mechanical properties. Product data sheets, as well as Hobart's comprehensive submerged arc welding handbook, can be found online at <http://HobartBrothers.com/Products/Submerged-Arc>

SDX S1-EL12**AWS A5.17: EL12****EN ISO 14175: S1****Benefits:**

- low manganese and silicon content is well suited for use with manganese and silicon-alloying fluxes
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- general fabrication
- structural & bridge fabrication
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 110

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm)

SDX S2Si-EM12K**AWS A5.17: EM12K****EN ISO 14171: S2Si****Benefits:**

- moderate manganese and silicon levels provide improved resistance to porosity, improved mechanical properties, and allow faster travel speeds
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- general fabrication
- structural & bridge fabrication
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140, SWX 150

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX EM13K****AWS A5.17: EM13K****Benefits:**

- high silicon content helps to increased travel speeds while maintaining good bead appearance and contour
- manganese and silicon content provides suitable mechanical properties for welding low to medium tensile-strength (non-alloyed/carbon) steels
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- general fabrication
- structural & bridge fabrication
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 110, SWX 120, SWX 140, SWX 150

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX S2****EN ISO 14171: S2****Benefits:**

- low manganese and silicon content is well suited for use with manganese and silicon-alloying fluxes, and welding low to medium tensile-strength steels
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- general fabrication
- structural & bridge fabrication
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX S3Si-EH12K****AWS A5.17: EH12K****EN ISO 14171: S3Si****Benefits:**

- suitable for use with a wide variety of Hobart fluxes, making it easier to choose the optimal combination for unique applications
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- general fabrication
- structural & bridge fabrication
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140, SWX 150

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX S4-EH14****AWS A5.17: EH14****EN ISO 14171: S4****Benefits:**

- elevated manganese content is suited for welding moderate-tensile strength non-alloyed/carbon steels
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- general fabrication
- structural & bridge fabrication
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 150

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ EM12K-S

AWS A5.17: EC1

Benefits:

- composite metal-cored wire offers improved deposition rates—and productivity—compared to solid wire
- the weld deposit chemistry is specially formulated to be similar to EM12K solid wire to provide a higher-productivity alternative in nearly all of the same applications
- suitable for use with a wide variety of Hobart fluxes, making it easier to choose the optimal combination for unique applications
- composite metal-cored wires offer broader penetration profiles than solid wires at comparable welding parameters, helping to prevent burn-through when welding at high currents on root passes, joints with poor fit-up, and relatively thin materials

Typical Applications:

- general fabrication
- structural fabrication
- storage tanks
- railcar

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140, SWX 150, HA-495, HN-511, HN-590

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ SL 731

EN ISO 14171: S 46 4 AB T3

Benefits:

- specially formulated to offer enhanced impact toughness than can be achieved by carbon steel solid wires such as EM13K, EH12K, etc.
- seamless wire design virtually eliminates moisture absorption and produces low diffusible-hydrogen weld deposit for a continually minimized risk of hydrogen-induced cracking
- unique manufacturing process provides unmatched product consistency for excellent uniformity of chemical properties, mechanical properties, and arc characteristics

Typical Applications:

- general fabrication
- structural fabrication
- storage tanks
- railcar

Recommended Fluxes:

SWX 110, SWX 120, SWX 150

Standard Diameters:

1/16" (1.6 mm), 5/64" (2.0 mm),
3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SubCOR™ EM13K-S

AWS A5.17: EC1

Benefits:

- the weld deposit chemistry is specially formulated to be similar to EM13K solid wire to provide a higher-productivity alternative in nearly all of the same applications
- suitable for use with a wide variety of Hobart fluxes, making it easier to choose the optimal combination for unique applications
- composite metal-cored wires offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity
- composite metal-cored wires offer broader penetration profiles than solid wires at comparable welding parameters, helping to prevent burn-through when welding at high currents on root passes, joints with poor fit-up, and relatively thin materials

Typical Applications:

- general fabrication
- structural fabrication
- storage tanks
- railcar

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140, SWX 150, HA-495, HN-511, HN-590

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ SL 840 HC

EN ISO 14171: S 46 6 FB T3Ni1

Benefits:

- provides excellent impact toughness in both the as-welded, stress-relieved, and even normalized conditions; suitable for service in many demanding service conditions
- seamless wire design virtually eliminates moisture absorption and produces low diffusible-hydrogen weld deposit for a continually minimized risk of hydrogen-induced cracking
- unique manufacturing process provides unmatched product consistency for excellent uniformity of chemical properties, mechanical properties, and arc characteristics

Typical Applications:

- offshore construction
- pressure vessels
- pipeline double jointing

Recommended Fluxes:

SWX 140

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ EM13K-S MOD

AWS A5.17: EC1

Benefits:

- specially formulated to maintain good mechanical properties when welding at high (>80 kJ/in) heat inputs
- the weld deposit chemistry is specially formulated to be similar to EM13K solid wire to provide a higher-productivity alternative in nearly all of the same applications
- suitable for use with a wide variety of Hobart fluxes, making it easier to choose the optimal combination for unique applications
- composite metal-cored wires offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity
- composite metal-cored wires offer broader penetration profiles than solid wires at comparable welding parameters, helping to prevent burn-through when welding at high currents on root passes, joints with poor fit-up, and relatively thin materials

Typical Applications:

- general fabrication
- structural fabrication
- storage tanks
- railcar

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140, SWX 150, HN-511, HN-590

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

Wire/Flux Combination Classifications (AWS)									
Wire Trade Name	Flux Trade Name								
	SWX 110	SWX 120	SWX 130	SWX 135	SWX 140	SWX 150	SWX 160	HN-511	HN-590
SDX S2Mo-EA2	F7A4-EA2-A4	F7A6-EA2-A4	F7A4-EA2-A4	F7A4-EA2-A4	F7A6-EA2-A4	F7A6-EA2-A4		-	-
SDX S2Mo-EA2	F7P4-EA2-A4	F7P6-EA2-A4	F7P4-EA2-A4	F7P4-EA2-A4	F7P6-EA2-A4	F7P6-EA2-A4		-	-
SDX CrMo1-EB2R	-	-	-	-	-	F8P2-EB2R-B2	F8P2-EB2R-B2R	-	-
SDX CrMo2-EB3R	-	-	-	-	-	F8P0-EB3R-B3	F8P2-EB3R-B3R	-	-
SDX S2Ni1-ENi1	-	-	-	-	-	F7A8-ENi1-Ni1		-	-
SDX S2Ni1-ENi1	-	-	-	-	-	F7P8-ENi1-Ni1		-	-
SDX S2Ni2-ENi2	-	-	-	-	-	F8A10-ENi2-Ni2		-	-
SDX S2Ni2-ENi2	-	-	-	-	-	F8P10-ENi2-Ni2		-	-
SDX S2Ni1Cu	-	-	-	-	-	-		-	-
SDX S3Ni1Mo0.2-ENi5	F8A6-ENi5-Ni5	-	-	-	-	F8A8-ENi5-Ni5		-	-
SDX S3Ni1Mo0.2-ENi5	-	-	-	-	-	F8P6-ENi5-Ni5		-	-
SDX S3NiMo-EF3	-	-	-	-	-	F10A8-EF3-F3		-	-
SDX S3Ni2.5CrMo	-	-	-	-	-	-		-	-
SubCOR™ B2-S	-	-	-	-	-	F9P2-ECB2-B2		F8P2-ECB2-B2	-
SubCOR™ B3-S	-	-	-	-	-	P9P2-ECB3-B3		F10P0-ECB3-B3	-
SubCOR™ 92-S	-	F8A10-ECM1-M1	-	-	F8A10-ECM1-M1	F8A10-ECM1-M1		F8A8-ECM1-M1	F8A8-ECM1-M1
SubCOR™ 92-S	-	F8P8-ECM1-M1	-	-	F8P8-ECM1-M1	F8P8-ECM1-M1		F8P8-ECM1-M1	F8P8-ECM1-M1
SubCOR™ F2-S	-	-	-	-	-	F10A10-ECF2-F2		F9A8-ECF2-F2	F9A8-ECF2-F2
SubCOR™ F2-S	-	-	-	-	-	F10P10-ECF2-F2		F9P6-ECF2-F2	F9P6-ECF2-F2
SubCOR™ 100F3-S	-	-	-	-	F10A10-ECF3-F3	F10A10-ECF3-F3		F10A8-ECF3-F3	F10A6-ECF3-F3
SubCOR™ 100F3-S	-	-	-	-	F10P8-ECF3-F3	F10P10-ECF3-F3		F10P8-ECF3-F3	F10P2-ECF3-F3
SubCOR™ 4130 SR	-	-	-	-	-	F10A4-ECF3-F3		F10A4-ECF3-F3	-
SubCOR™ 4130 SR	-	-	-	-	-	F10P4-ECF3-F3		F10P4-ECF3-F3	-
SubCOR™ 120-S	-	-	-	-	-	F11A10-ECM4-M4	F11A6-ECN4-M4	F11A10-ECM4-M4	-
SubCOR™ Ni1-S	-	-	-	-	-	F7A8-ECNi1-Ni1		F7A8-ECNi1-Ni1	F7A8-ECNi1-Ni1
SubCOR™ Ni1-S	-	-	-	-	-	F7P10-ECNi1-Ni1		F6P10-ECNi1-Ni1	F6P10-ECNi1-Ni1
SubCOR™ W-S	-	-	-	-	-	F7A6-ECW		-	F7A4-ECW-W

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Wire/Flux Combination Classifications (EN ISO)								
Wire Trade Name	Specification	Flux Trade Name						
		SWX 110	SWX 120	SWX 130	SWX 135	SWX 140	SWX 150	
SDX S2Mo-EA2	14171-A	-	S 46 4 AB S2Mo	S 46 2 AB S2Mo	S 46 2 AB S2Mo	S 46 4 FB S2Mo	S 46 4 FB S3Si	-
SDX S2Mo-EA2	14171-A	-	S 4T 3 AB S2Mo	-	-	-	-	-
SDX S3Mo-EA4	14171-A	-	-	S 50 2 AB S3Mo	S 50 2 AB S3Mo	-	-	-
SDX CrMo1-EB2R	24598-A	-	-	-	-	-	S S CrMo1 FB	S S CrMo1 FB
SDX CrMo2-EB3R	24598-A	-	-	-	-	-	S S CrMo2 FB	S S CrMo2 FB
SDX S2Ni1-ENi1	14171-A	-	-	-	-	-	S 42 4 FB S2Ni1	-
SDX S2Ni2-ENi2	14171-A	-	-	-	-	-	S 46 7 FB S2Ni2	-
SDX S2Ni1Cu	14171-A	S 46 3 AB S2Ni1Cu	-	-	-	-	-	-
SDX S3Ni1Mo0.2-ENi5	14171-A	S 50 4 AB S3Ni1Mo0.2	-	-	-	-	S 46 6 FB S2Ni1Mo0.2	-
SDX S3NiMo-EF3	14171-A	-	-	-	-	-	S 62 6 FB S3Ni1Mo	-
SDX S3Ni2.5CrMo	26304-A	-	-	-	-	-	S 69 6 FB S3Ni2.5CrMo	S 79 6 FB S3Ni2.5CrMo
SubCOR™ SL 735 1W-5W	14171-A	-	-	-	-	S 46 4 FB T3	-	-
SubCOR™ SL 741	26304-A	-	-	-	-	S 55 6 FB T3 Ni1Mo	S 55 6 FB T3 Ni1Mo	-
SubCOR™ SL 742	26304-A	-	-	-	-	-	S 69 6 FB T3 Ni2.5CrMo	S69 6FB T3 Ni2.5CrMo
SubCOR™ SL 745	16304-A	-	-	-	-	-	S 89 4 FB T3Ni2.5Cr1Mo	-
SubCOR™ SL 281 Cr	14171-A	S 46 4 AB TZ	-	-	-	-	-	-
SubCOR™ SL P1	24598-A	-	-	-	-	-	S T Mo FB	-
SubCOR™ SL P1 MOD	24598-A	-	-	-	-	-	S T MoV FB	-
SubCOR™ SL P11	24598-A	-	-	-	-	-	S T CrMo1 FB	-
SubCOR™ SL P12 MOD	24598-A	-	-	-	-	-	-	-
SubCOR™ SL P36	24598-A	-	-	-	-	-	S T Z FB	-
SubCOR™ SL P22	24598-A	-	-	-	-	-	S T CrMo2 FB	-
SubCOR™ P24	24598-A	-	-	-	-	-	S T Z FB	-
SubCOR™ SL P5	24598-A	-	-	-	-	-	S T CrMo5 FB	-
SubCOR™ SL P9	24598-A	-	-	-	-	-	S T CrMo9 FB	-
SubCOR™ SL P91	24598-A	-	-	-	-	-	S T CrMo 91 FB	S T CrMo1 FB
SubCOR™ SL P92	24598-A	-	-	-	-	-	S T CrMoWV12 FB	-

Low-Alloy Wires Approval Summary										
Wire	Flux	ABS	BV	DNV	GL	LR	CWB	DB	TüV	CE
SDX S2Mo-EA2	SWX 110		3YTM	IIIYTM	3Y46T/4Y46M	3YTM	F8A6-EA2-A4		X	X
SDX S2Mo-EA2	SWX 120						F8A6-EA2-A4			X
SDX S2Mo-EA2	SWX 130									X
SDX S2Mo-EA2	SWX 135									X
SDX S2Mo-EA2	SWX 140	4Y 400 T		IV Y 40 T						X
SDX S2Mo-EA2	SWX 150						F55A5-EA2-A2		X	X
SDX S2Ni1Cu	SWX 110									X
SDX S2Ni2-ENi2	SWX 150									X
SDX S3Ni1Mo-EF3	SWX 150	4YQ550M		IVY55M						X
SDX S3Ni2.5CrMo	SWX 150									X
SDX S3NiMo0.2-ENi5	SWX 150	4YQ460M		IVY46M						X
SubCOR™ 120-S	SWX 150	F11A10-ECM4-M4								
SubCOR™ 92-S	SWX 150									
SubCOR™ SL 281 Cr	SWX 110									X
SubCOR™ SL 735 1W	SWX 140			III YTM	4YTM	3YM, 3YT				X
SubCOR™ SL 735 1W	SWX 150			III YTM	3YTM	3YM, 3YT				X
SubCOR™ SL 735 2W+SDX S2	SWX 140			III YTM	4YTM	3YM, 3YT				X
SubCOR™ SL 735 2W+SDX S2	SWX 150	3YTM		III YTM	3YTM	3YM, 3YT				X
SubCOR™ SL 741	SWX 150									X
SubCOR™ SL 742	SWX 150	5YQ690M H5	A 5Y69M H5	V Y69MS H5	6Y69 H5	BF 5Y69M H5			X	X
SubCOR™ SL P1	SWX 150									X
SubCOR™ SL P1 MOD	SWX 150									X
SubCOR™ SL P11	SWX 150									X
SubCOR™ SL P12	SWX 150									X
SubCOR™ SL P22	SWX 150									X
SubCOR™ SL P24	SWX 150									X
SubCOR™ SL P36	SWX 150									X
SubCOR™ SL P5	SWX 150									X

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SDX S2Mo-EA2

AWS A5.23: EA2

EN ISO 14171: S2Mo

EN ISO 24598: SMnMo

Benefits:

- nominal composition helps maintain good strength and toughness in high-dilution (single-pass or two-run) welding applications
- nominal 0.5% Mo composition provides good creep resistance and helps maintain tensile strength following post-weld stress relief
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- pressure vessels
- pipe mills
- high-dilution two-run welding

Recommended Fluxes:

SWX 110, SWX 120, SWX 130, SWX 135, SWX 140, SWX 150

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SDX S3TiB

AWS A5.23: EG

EN ISO 14171: SZ

Benefits:

- titanium and boron alloyed to maintain good mechanical properties when welding with multiple wires in high-dilution applications
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- pipe mills
- high-dilution two-run welding
- multi-wire welding in combination with SDX S2Mo-EA2 wires

Recommended Fluxes:

SWX 130, SWX 135

Standard Diameters:

5/32" (4.0 mm)

SDX CrMo1-EB2R

AWS A5.23: EB2R

EN ISO 24598: S CrMo1

Benefits:

- nominal 1% Cr/0.5% Mo wire chemistry is suitable for use on creep-resistant steels of similar composition
- wire chemistry is low in impurities/tramp elements (typical X factor <12) as required in many step-cooling applications to minimize the risk of temper embrittlement
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- 1% Cr/0.5% Mo creep-resistant steels
- elevated service temperatures
- step-cooling applications
- boiler & pressure vessel components
- power generation industry

Recommended Fluxes:

SWX 150, SWX 160

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX S3Mo-EA4

AWS A5.23: EA4

EN ISO 14171: S3Mo

EN ISO 24598: SMnMo

Benefits:

- nominal 1.5% Mn/0.5% Mo composition helps maintain good strength and toughness in high-dilution (single-pass or two-run) welding applications
- nominal 0.5% Mo composition provides good creep resistance and helps maintain tensile strength following post-weld stress relief
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- pressure vessels
- pipe mills
- high-dilution two-run welding

Recommended Fluxes:

SWX 130, SWX 135

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SDX S3MoTiB

AWS A5.23: EG

EN ISO 14171: SZ

Benefits:

- molybdenum, titanium, and boron alloyed to maintain good mechanical properties when welding with multiple wires in high-dilution applications
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- pipe mills
- high-dilution two-run welding
- multi-wire welding in combination with SDX S2Mo-EA2 wires

Recommended Fluxes:

SWX 130, SWX 135

Standard Diameters:

5/32" (4.0 mm)

SDX CrMo2-EB3R

AWS A5.23: EB3R

EN ISO 24598: S CrMo2

Benefits:

- nominal 2.5% Cr/1% Mo wire chemistry is suitable for use on creep-resistant steels of similar composition
- wire chemistry is low in impurities/tramp elements (typical factor <12), as required in many step-cooling applications to minimize the risk of temper embrittlement
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- 2.5% Cr/1% Mo creep-resistant steels
- Cr-Mo castings
- elevated service temperatures
- step-cooling applications
- boiler & pressure vessel fabrication
- power generation industry

Recommended Fluxes:

SWX 150, SWX 160

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX S2Ni1-ENi1**AWS A5.23: ENi1****EN ISO 14171: S2Ni1****Benefits:**

- nominal 1% nickel composition provides very good impact toughness for low-temperature or demanding service environments
- nominal 1% nickel composition provides atmospheric corrosion resistance required when multi-pass welding many weathering steels
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- structural & bridge fabrication
- weathering steels
- heavy equipment
- storage & pressure vessels

Recommended Fluxes:

SWX 150

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX S2Ni1Cu****EN ISO 14171: S2Ni1Cu****Benefits:**

- nominal wire chemistry is similar to that of many weathering steels, providing both atmospheric corrosion resistance and weld color matching
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- structural & bridge fabrication
- weathering steels
- ASTM A709 50W

Recommended Fluxes:

SWX 110

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX S3Ni1Mo-EF3****AWS A5.23: EF3****EN ISO 14171: S3Ni1Mo****Benefits:**

- nominal 1% Ni/0.5% Mo composition is suitable for welding a wide range of High-Strength Low-Alloy (HSLA) steels of similar composition
- provides good low-temperature temperature toughness required in many demanding service conditions
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- offshore structures
- heavy equipment
- storage & pressure vessels
- welding HSLA steels with impact toughness requirements down to -60°C (-76°F)

Recommended Fluxes:

SWX 150

Standard Diameters:3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)**SDX S2Ni2-ENi2****AWS A5.23: ENi2****EN ISO 14171: S2Ni2****Benefits:**

- nominal 2% nickel composition provides excellent impact toughness (improved compared to 1% Ni wires) for low-temperature or very demanding service environments
- nominal 1% nickel composition provides atmospheric corrosion resistance required when multi-pass welding many weathering steels
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- structural & bridge fabrication
- weathering steels
- heavy equipment
- offshore
- storage & pressure vessels

Recommended Fluxes:

SWX 150

Standard Diameters:5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)**SDX S3Ni1Mo0.2-ENi5****AWS A5.23: ENi5****EN ISO 14171: S3Ni1Mo0.2****Benefits:**

- nominal 1% Ni/0.25% Mo composition is suitable for welding a wide range of high-strength low-alloy steels, and provides good impact toughness for demanding service conditions
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- offshore structures
- heavy equipment
- welding HSLA steels with impact toughness requirements down to -60°C (-76°F)

Recommended Fluxes:

SWX 150

Standard Diameters:3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)**SDX S3Ni2.5CrMo****EN ISO 26304: S3Ni2.5CrMo****Benefits:**

- nominal 2.25% Ni/0.5% Cr/0.5% Mo composition is suitable for welding a wide range of high-strength low-alloy steels, and provides good mechanical properties for demanding service conditions
- copper coated for optimal consistency of electrode feeding and electrical transfer

Typical Applications:

- welding HSLA steels with yield strengths of up to 690 MPa (100 KSI)
- heavy equipment
- offshore

Recommended Fluxes:

SWX 150, SWX 160

Standard Diameters:3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SubCOR™ N1-S

AWS A5.23: ECNi1

Benefits:

- a higher-productivity alternative in virtually all applications currently using ENi1 solid wire; weld deposit chemistry requirements are identical
- provides excellent low-temperature toughness without excessive tensile strength; suitable for welding a range of non-alloyed steels in low-temperature or critical service environments
- nominal 1% nickel weld deposit provides atmospheric corrosion resistance to welds made on weathering steels
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- structural & bridge fabrication
- weathering steels
- non-alloyed and fine grain steels
- storage tanks
- shipbuilding
- offshore
- heavy equipment

Recommended Fluxes:

SWX 150, HN-511, HN-590

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm)
5/32" (4.0 mm)

SubCOR™ W-S

AWS A5.23: ECNi1

Benefits:

- nominal weld deposit chemistry is similar to many weathering steels, and will provide both atmospheric corrosion resistance AND color matching
- provides good toughness with recommended fluxes; suitable for use in many demanding applications using weathering steels
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- structural & bridge fabrication
- weathering steels
- architectural details

Recommended Fluxes:

SWX 150, HN-590

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ 92-S

AWS A5.23: ECM1

Benefits:

- a higher-productivity alternative in virtually all applications currently using EM1 solid wire; weld deposit chemistry requirements are identical
- provides very good low-temperature toughness in both the as-welded and stress-relieved conditions for good performance in critical applications & harsh service environments
- suitable for use with a wide variety of Hobart fluxes, making it easier to choose the optimal combination for unique applications
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- High-Strength Low-Alloy (HSLA) steels
- structural & bridge fabrication
- heavy equipment
- offshore
- wind tower
- shipbuilding

Recommended Fluxes:

SWX 120, SWX 150, HN-511, HN-590

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm)
5/32" (4.0 mm)

SubCOR™ F2-S

AWS A5.23: ECF2

Benefits:

- a higher-productivity alternative in virtually all applications currently using EF2 solid wire; weld deposit chemistry requirements are identical
- weld deposit chemistry consists of less than 1% Ni, suitable for use in applications where stress-corrosion cracking caused by H₂S is a concern
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- High-Strength Low-Alloy (HSLA) steels
- ~ 90 KSI (620 MPa) Q&T steels
- oil & gas pipe double jointing
- sour gas applications
- heavy equipment

Recommended Fluxes:

SWX 150, HN-511, HN-590

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm)
5/32" (4.0 mm)

SubCOR™ 100F3-S

AWS A5.23: ECF3

Benefits:

- a higher-productivity alternative in virtually all applications currently using EF3 solid wire; weld deposit chemistry requirements are identical
- weld deposit chemistry consists of less than 1% Ni, suitable for use in applications where stress-corrosion cracking caused by H₂S is a concern
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- High-Strength Low-Alloy (HSLA) steels
- ~ 100 KSI (620 MPa) Q&T steels
- oil & gas pipe double jointing
- sour gas applications
- storage tanks & vessels
- heavy equipment

Recommended Fluxes:

SWX 150, HN-511, HN-590

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm)

SubCOR™ 4130 SR

AWS A5.23: ECF3

Benefits:

- specially formulated to maintain good mechanical properties after stress-relief of up to 12 hours
- high strength deposit with versatile chemistry is suitable for welding a wide range of high-strength materials, including AISI 4130 & 4140
- weld deposit chemistry consists of less than 1% Ni and hardness is less than 248 HV10 hardness; suitable for use in applications where stress-corrosion cracking caused by H₂S is a concern
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- wellhead fabrication and repair
- oil & gas industries
- joining and repair of 4130 & 4140 steels
- high-strength low-alloy steels
- offshore industries

Recommended Fluxes:

SWX 150, HN-511

Standard Diameters:

1/8" (3.2 mm)

SubCOR™ 120-S

AWS A5.23: ECM4

Benefits:

- a higher-productivity alternative in virtually all applications currently using EM4 solid wire; weld deposit chemistry requirements are identical
- very tough, high-strength weld deposit for welding a wide variety of 110+ KSI (760+ MPa) HSLA and Q&T steels
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- High-Strength Low-Alloy (HSLA) steels
- ~ 110 KSI (760 MPa) Q&T steels
- ASTM A514 [$<2.5"$ (63mm)]
- jack-up rig fabrication
- heavy equipment
- shipbuilding
- structural & bridge fabrication

Recommended Fluxes:

SWX 150, HN-511, SWX 160

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm)
5/32" (4.0 mm)

SubCOR™ B3-S

AWS A5.23: ECB3

Benefits:

- nominal 2.25% chromium/1% molybdenum weld deposit chemistry suitable for welding creep-resistant steels of a similar composition, and in virtually all applications currently using EB3 solid wires
- maintains good tensile strength and oxidation resistance up to 800°F (425°C) to help provide good service life in elevated-temperature service
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- 1.25% Cr/0.5% Mo Steels
- Cr-Mo castings
- elevated service temperatures
- power generation
- process piping
- boiler & pressure vessels

Recommended Fluxes:

SWX 150, HN-511

Standard Diameters:

3/32" (2.4 mm)

SubCOR™ B2-S

AWS A5.23: ECB2

Benefits:

- nominal 1.25% chromium/0.5% molybdenum weld deposit chemistry suitable for welding creep-resistant steels of a similar composition, and in virtually all applications currently using EB2 solid wires
- composite metal-cored wires can offer improved deposition rates than solid wires at comparable welding parameters, allowing for increased travel speeds and productivity

Typical Applications:

- 1.25% Cr/0.5% Mo Steels
- Cr-Mo castings
- elevated service temperatures
- power generation
- process piping
- boilers & pressure vessels

Recommended Fluxes:

SWX 150, HN-511

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm)



SubCOR™ SL 281 Cr

Benefits:

- nominal weld deposit chemistry is similar to many weathering steels, and will provide both atmospheric corrosion resistance AND color matching
- specially formulated to provide improved weld toughness and ductility than solid wire alternatives for enhanced performance in demanding applications
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- structural & bridge fabrication
- storage & pressure vessels
- heavy equipment
- cranes

Recommended Fluxes:

SWX 150

Standard Diameters:

5/32" (4.0 mm)

Recommended Fluxes:

SWX 150

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ SL 742

Benefits:

- provides good toughness and high strength in the as-welded condition, making it a good candidate for welding fine-grain structural and cryogenic steels with yield strengths up to 690 MPa (100 ksi)
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- cranes
- structural fabrication
- heavy equipment
- transportation frames
- pipelines
- casting repair

Recommended Fluxes:

SWX 150, SWX 160

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL P1

Benefits:

- maintains creep resistance at temperatures up to 500°C (930°F) for predictable component lifespan in elevated-temperature service
- nominal 0.5% Mo weld deposit composition is suitable for welding creep-resistant steels of similar composition
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- storage vessels
- pipeline double jointing
- industrial machinery

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL 741

Benefits:

- provides good toughness and high strength in both the as-welded and stress-relieved conditions, making it a suitable candidate for welding fine-grain structural steels with a yield strength up to 550 MPa (80 ksi)
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- casting repair
- pipeline double jointing
- heavy equipment
- cranes
- industrial machinery

Recommended Fluxes:

SWX 140, SWX 150

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ SL 745

Benefits:

- provides VERY high strength in the as-welded and stress-relieved conditions, making it a suitable candidate for welding HSLA, Q&T, and cryogenic fine-grain structural steels with yield strengths up to 890 MPa (120 ksi)
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- cranes
- transport vehicle frames
- industrial machinery
- pipelines
- HSLA/Q&T casting repair

Recommended Fluxes:

SWX 150

Standard Diameters:

5/64" (2.0 mm), 3/32" (2.4 mm),
1/8" (3.2 mm), 5/32" (4.0 mm)

SubCOR™ SL P1 MOD

Benefits:

- maintains creep and scale resistance at temperatures up to 550°C (1020°F) for predictable component lifespan in elevated-temperature service
- nominal 0.5% Cr/0.5% Mo/V weld deposit composition is suitable for welding creep-resistant steels of similar composition
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- pipeline double jointing
- industrial machinery
- power generation components
- storage vessels

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL P11**Benefits:**

- maintains creep and scale resistance at temperatures up to 550°C (1020°F) for predictable component lifespan in elevated-temperature service
- nominal 1% Cr/0.5% Mo weld deposit composition is suitable for welding creep-resistant steels of similar composition
- seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- pipeline double jointing
- industrial machinery
- power generation components
- storage vessels

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL P36**Benefits:**

- maintains creep resistance at temperatures up to 500°C (930°F) for predictable component lifespan in elevated-temperature service
- seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- storage vessels
- pipeline double jointing
- industrial machinery
- power generation components
- Cr-Mo casting repair

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL P24**Benefits:**

- nominal 2.5% Cr/1% Mo/V weld deposit composition is suitable for welding creep-resistant steels of similar composition
- meets requirements for many step cooling applications
- seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- storage vessels
- pipeline double jointing
- industrial machinery
- power generation components

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL P12 MOD**Benefits:**

- maintains creep and scale resistance at temperatures up to 550°C (1020°F) for predictable component lifespan in elevated-temperature service
- nominal 1% Cr/1% Mo weld deposit composition is suitable for welding creep-resistant steels of similar composition
- seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- pipeline double jointing
- industrial machinery
- power generation components
- storage vessels

Recommended Fluxes:

SWX 150, SWX 160

Standard Diameters:3/32" (2.4 mm), 1/8" (3.2 mm)
5/32" (4.0 mm)**SubCOR™ SL P22****Benefits:**

- nominal 2.25% Cr/1% Mo weld deposit composition is suitable for welding creep-resistant steels of similar composition
- meets requirements for many step cooling applications
- seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- storage vessels
- pipeline double jointing
- industrial machinery
- power generation components

Recommended Fluxes:

SWX 150

Standard Diameters:3/32" (2.4 mm), 1/8" (3.2 mm)
5/32" (4.0 mm)**SubCOR™ SL P5****Benefits:**

- maintains creep and scale resistance at temperatures up to 600°C (1110°F) for predictable component lifespan in elevated-temperature service
- nominal 5% Cr/0.5% Mo weld deposit composition is suitable for welding creep-resistant steels of similar composition
- seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- power generation components
- chemical/petrochemical refineries
- process piping

Recommended Fluxes:

SWX 150

Standard Diameters:3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SubCOR™ SL P9

Benefits:

- maintains creep and scale resistance at temperatures up to 600°C (1110°F) for predictable component lifespan in elevated-temperature service
- nominal 9% chromium/1% molybdenum weld deposit composition is suitable for welding creep-resistant steels of similar composition
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- power generation components
- chemical/petrochemical refineries
- process piping

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SubCOR™ SL P91

Benefits:

- maintains creep and scale resistance at temperatures up to 600°C (1110°F) for predictable component lifespan in elevated-temperature service
- nominal 9% Cr/1% Mo/V weld deposit composition is suitable for welding creep-resistant steels of similar composition
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- power generation components
- chemical/petrochemical refineries
- process piping

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SubCOR™ SL P92

Benefits:

- maintains creep and scale resistance at temperatures up to 650°C (1200°F) for predictable component lifespan in elevated-temperature service
- nominal 9% Cr/1% Mo/W/V weld deposit composition is suitable for welding creep-resistant steels of similar composition
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- boilers & pressure vessels
- power generation components
- chemical/petrochemical refineries
- process piping

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SubCOR™ SL 735 1W-5W

Benefits:

- specially formulated to maintain good mechanical properties when performing high dilution welds single or two-run welds using one or multiple wires
 - SubCOR SL 1W is intended for single-wire welding
 - SubCOR SL 2W, 3W, 4W, and 5W are intended for two, three, four, and five-wire welding, respectively. Use in conjunction with Hobart solid wires; only one SubCOR SL 735 wire is needed
- unique seamless composite wire manufacturing process provides unmatched product consistency for excellent uniformity of weld metal properties

Typical Applications:

- pipe mills
- pipe double jointing
- pressure vessels
- heavy equipment

Recommended Fluxes:

SWX 150

Standard Diameters:

3/32" (2.4 mm), 5/32" (4.0 mm)

SWX 220

EN ISO 14174: S A AF 2 DC**Benefits:**

- versatile product; suitable for use with a wide range of Hobart stainless wires and stainless applications
- provides good weld appearance and wetting action into the side
- beneficial for multi-pass welding due to excellent slag removal which minimizes clean-up time and risk of inclusion
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- joining austenitic & duplex stainless steels in similar and dissimilar combinations
- offshore & nuclear fabrication
- petrochemical industry
- chemical storage & processing
- paper & pulp processing
- food & medical equipment

Flux Type:

Agglomerated aluminate-fluoride flux

Basicity Index (Boniszewski): 1.9**Alloy Transfer:** None**Density:** ~1.2 kg/L**Grain Size:** 0.2 – 2.0 mm/ 10 – 70 mesh**Type of Current:** DCEP**Typical Diffusible Hydrogen:**

<5 mL/100g

Typical Composition:

Al₂O₃ + MnO ~30%
CaO + MgO ~25%
SiO₂ + TiO₂ ~20%
CaF₂ ~20%

Packaging Available

- 55 lb. (25 kg.) EAE Bag

Commonly Used With:

- SDX 308L
- SDX 347
- SDX 216L
- SDX 309L
- SDX 309LMO
- SDX 2209
- SDX 2594

SWX 305

EN ISO 14174: S A AAS 2B DC

Benefits:

- offers good bead appearance, welding characteristics, and slag removal for productive cladding with minimal part post-work
- supplied in moisture-proof packaging (EAE BAG) that eliminates the need to re-dry unopened product

Typical Applications:

- **SAW cladding carbon**, low-alloy, and stainless steels with a stainless overlay
- chemical & petrochemical processing
- pulp & paper processing
- pressure vessels
- offshore & nuclear fabrication

Flux Type:

Agglomerated acid-aluminum-silicate flux

Basicity Index (Boniszewski): 1.1

Alloy Transfer: None

Density: ~1.1 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP

Typical Composition:

Al₂O₃ + MnO ~20%
 CaO + MgO ~5%
 SiO₂ + TiO₂ ~10%
 CaF₂ ~60%

Packaging Available

- 55 lb. (25 kg.) EAE Bag

Commonly Used With:

- Cromastrip 308L
- Cromastrip 316L
- Cromastrip 347

SWX 330

EN ISO 14174: ES A FB 2B DC

Benefits:

- provides high current carrying capacity for high deposition parameters at standard speeds
- offers excellent slag removal, even on preheated surfaces
- supplied in moisture-proof packaging (EAE BAG) that eliminates the need to re-dry unopened product

Typical Applications:

- **electroslag (ESW) cladding** carbon, low-alloy, and stainless steels with a stainless overlay
- chemical & petrochemical processing
- pulp & paper processing
- pressure vessels
- offshore & nuclear fabrication

Flux Type:

Agglomerated fluoride-basic flux

Basicity Index (Boniszewski): 3.8

Alloy Transfer: None

Density: ~1.1 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP

Typical Composition:

Al₂O₃ + MnO ~25%
 SiO₂ + TiO₂ ~10%
 CaF₂ ~65%

Packaging Available

- 55 lb. (25 kg.) EAE Bag

Commonly Used With:

- Cromastrip 21.11 L
- Cromastrip 21.13.3 L
- Cromastrip 21.11 LNb

SWX 340

EN ISO 14174: ES A FB 2B DC

Benefits:

- designed to allow high ESW travel speeds of up to 17.7 ipm (45 cm/min)
- offers a high current-carrying capacity
- provides excellent slag removal, bead contour, and bead appearance
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- high-speed cladding of stainless steels using the electro-slag (ESW) process
- pressure vessels
- petrochemical industry

Flux Type:

Agglomerated fluoride-basic flux

Basicity Index (Boniszewski): 4.1

Alloy Transfer: None

Density: ~1.1 kg/L

Grain Size: 0.2 – 1.2 mm/ 16 – 70 mesh

Type of Current: DCEP

Typical Diffusible Hydrogen: <5 mL/100g

Primary Flux Composition:

Al₂O₃ + MnO ~20%
 CaO + MgO ~5%
 SiO₂ + TiO₂ ~5%
 CaF₂ ~70%

Packaging Available:

55 lb. (25 kg.) EAE Bag

Commonly Used With:

- Cromastrip 308L
- Cromastrip 309L
- Cromastrip 309LNb
- Cromastrip 309LMo
- Cromastrip 316L
- Cromastrip 347

SDX 308L

AWS A5.9: ER308L
EN ISO 14343: S 19 9 L

Benefits:

- produces a 308L (nominal 19% Cr/9% Ni, undiluted) weld deposit when used with recommended fluxes
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- welding 304/304L (and similar) stainless steels
- welding niobium or titanium stabilized austenitic stainless steels such as 347 or 321 if service temperatures are below 400°C (750°F)

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX 309L

AWS A5.9: ER309L
EN ISO 14343: S 23 12 L

Benefits:

- produces a 309L (nominal 23% Cr/12% Ni, undiluted) weld deposit when used with recommended fluxes
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- joining many 300 series austenitic stainless steels
- joining carbon/low-alloy/stainless steel dissimilar combinations

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX 309LMo

AWS A5.9: ER309LMo
EN ISO 14343: S 23 12 2 L

Benefits:

- produces a 309LMo (nominal 23% Cr/12% Ni/2% Mo, undiluted) weld deposit when used with recommended fluxes
- low carbon composition helps minimize risk of intergranular corrosion
- molybdenum content improves resistance to crevice and pitting corrosion and helps maintain acceptable properties at elevated service conditions

Typical Applications:

- elevated service temperatures
- surfacing (often buffer layers)
- joining many dissimilar 300 series austenitic stainless steels
- joining carbon/low-alloy/stainless steel dissimilar combinations
- corrosive halide-containing environments

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX 316L

AWS A5.9: ER316L
EN ISO 14343: S 19 12 3 L

Benefits:

- produces a 316L (nominal 19% Cr/12% Ni/3% Mo, undiluted) weld deposit when used with recommended fluxes
- molybdenum content improves resistance to crevice and pitting corrosion and helps maintain acceptable properties at elevated service conditions
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- joining 316/316L (and similar) stainless steels
- elevated service temperatures
- corrosive halide-containing environments
- welding niobium or titanium stabilized austenitic stainless steels such as 347 or 321 if service temperatures are below 400°C (750°F)

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX 317L

AWS A5.9: ER317L
EN ISO 14343: S 19 13 4 L

Benefits:

- produces a 317L (nominal 19% Cr/13% Ni/4% Mo) undiluted weld deposit when used with recommended fluxes
- alloy composition provides good resistance to crevice and pitting corrosion, particularly in acid chlorine-containing environments
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- joining 317/317 (and similar) stainless steels
- corrosive environments

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX 347

AWS A5.9: ER347
EN ISO 14343: S 19 9 Nb

Benefits:

- produces a 347L (nominal 20% Cr/10% Ni/0.5% Nb) undiluted weld deposit when used with recommended fluxes
- low carbon composition with niobium alloying greatly minimizes risk of intergranular corrosion
- significant niobium addition helps to maintain good mechanical properties in elevated temperature service

Typical Applications:

- joining 347, 321, and similar stabilized austenitic stainless steels
- joining 304/304L stainless steels
- structural service at temperatures above 400°C (750°F)

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

SDX 410NiMo

AWS A5.9: ER410NiMo

Benefits:

- nickel and molybdenum addition provides significantly improved toughness compared to standard 410 stainless steel filler metals
- provides high resistance to cavitation

Typical Applications:

- joining 410 stainless steel
- continuous caster rolls
- hydro-turbine components

Recommended Fluxes:

SWX 220

SDX 2594

AWS A5.9: ER2594

EN ISO 14343: S 25 9 4 N L

Benefits:

- produces a 2594 stainless steel (nominal 25% Cr/9% Ni/4% Mo, undiluted) weld deposit when used with recommended fluxes
- provides great resistance to pitting corrosion

Typical Applications:

- welding 2507 and similar duplex stainless steels
- welding 2205 and similar duplex stainless steels when the highest corrosion resistance is required

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm)

SDX 2209

AWS A5.9: ER2209

EN ISO 14343: S 22 9 3 N L

Benefits:

- produces a 2209 (nominal 22% Cr/9% Ni/3% Mo, undiluted) weld deposit when used with recommended fluxes
- provides very good resistance to general and pitting corrosion

Typical Applications:

- joining 2205 and similar nominal 22% Cr duplex stainless steels
- joining carbon/low-alloy/stainless steel dissimilar combinations when high dilution may occur or high joint restraint exists

Recommended Fluxes:

SWX 220

Standard Diameters:

3/32" (2.4 mm), 1/8" (3.2 mm),
5/32" (4.0 mm)

Cromastrip 308L

AWS A5.9: EQ308L

EN ISO 14343: B 19 9 L:

Benefits:

- produces a 308L (nominal 19% Cr/9% Ni, undiluted) weld deposit when used with recommended fluxes
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the submerged arc process

Recommended Fluxes:

SWX 305, SWX 340

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")

Cromastrip 309LMo

Benefits:

- molybdenum content improves resistance to crevice and pitting corrosion and helps maintain acceptable properties at elevated service temperatures

Typical Applications:

- elevated service temperatures
- corrosive halide-containing environments

Recommended Fluxes:

SWX 305, SWX 340

Standard Widths:

30 mm (1.18"), 60 mm (2.36"), 90 mm (3.54")

Cromastrip 309LNb

EN ISO 14343: B 23 12 L Nb

Benefits:

- produces a 309L (nominal 23% Cr/12% Ni, undiluted) weld deposit when used with recommended fluxes
- low carbon and niobium-stabilized composition helps minimize risk of intergranular corrosion

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the submerged arc process

Recommended Fluxes:

SWX 305, SWX 340

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")

Cromastrip 347

AWS A5.9: EQ347L

EN ISO 14343: B 19 9 Nb

Benefits:

- produces a 347L (nominal 20% Cr/10% Ni/0.5% Nb) undiluted weld deposit when used with recommended fluxes
- low carbon composition with niobium alloying greatly minimizes risk of intergranular corrosion
- significant niobium addition helps to maintain good properties in elevated temperature service

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the submerged arc process

Recommended Fluxes:

SWX 305, SWX 340

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")

Cromastrip 309L

AWS A5.9: EQ309L

EN ISO 14343: B 23 12 L

Benefits:

- produces a 309L (nominal 23% Cr/12% Ni, undiluted) weld deposit when used with recommended fluxes
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the submerged arc process

Recommended Fluxes:

SWX 305, SWX 340

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")

Cromastrip 316L

AWS A5.9: EQ316L

EN ISO 14343: B 19 12 3 L

Benefits:

- produces a 316L (nominal 19% Cr/12% Ni/3% Mo, undiluted) weld deposit when used with recommended fluxes
- molybdenum content improves resistance to crevice and pitting corrosion and helps maintain acceptable properties at elevated service conditions
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the submerged arc process
- elevated service temperatures
- corrosive (halide-containing) environments

Recommended Fluxes:

SWX 305, SWX 340

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")

Cromastrip 21.11 L**EN ISO 14343: B 21 11 L****Benefits:**

- produces a 308L (nominal 20% Cr/11% Ni, undiluted) weld deposit when used with recommended fluxes
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the electro-slag process

Recommended Fluxes:

SWX 382

Standard Widths:

30 mm (1.18"), 60 mm (2.36"), 90 mm (3.54")

Cromastrip 21.11 LNb**EN ISO 14343: B 21 11 L Nb****Benefits:**

- produces a 347L (nominal 20% Cr/11% Ni/0.4% Nb) undiluted weld deposit when used with recommended fluxes
- low carbon composition with niobium alloying greatly minimizes risk of intergranular corrosion
- significant niobium addition helps to maintain good properties in elevated temperatureservice

Typical Applications:

- cladding carbon, low-alloy, and stainless steels using the electro-slag process

Recommended Fluxes:

SWX 382

Standard Widths:

30 mm (1.18"), 60 mm (2.36"), 90 mm (3.54")

Cromastrip 21.13.3 L**Benefits:**

- produces a 316L (nominal 19% Cr/12% Ni/3% Mo, undiluted) weld deposit when used with recommended fluxes
- molybdenum content improves resistance to crevice and pitting corrosion and helps maintain acceptable properties at elevated service conditions
- low carbon composition helps minimize risk of intergranular corrosion

Typical Applications:

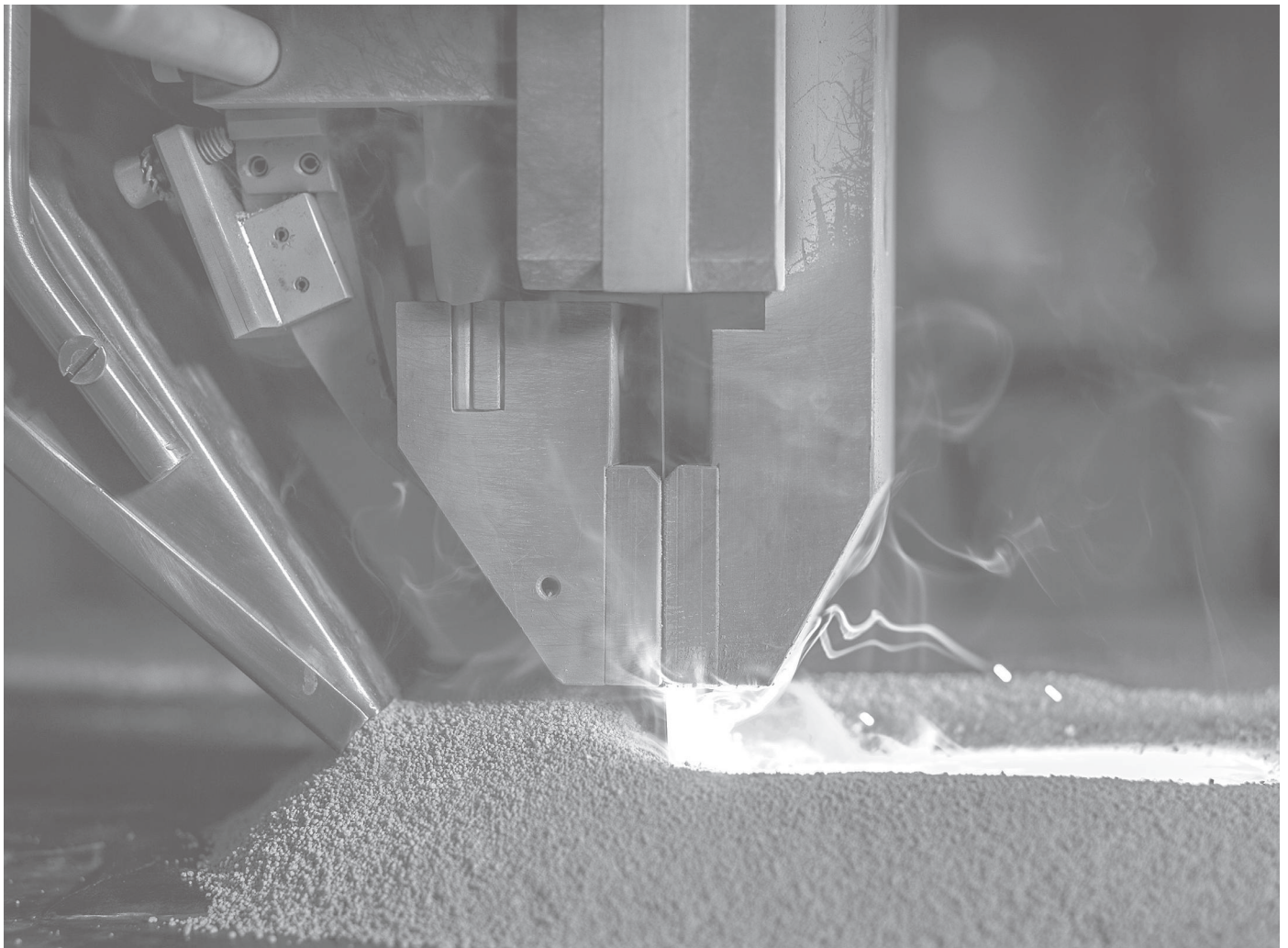
- cladding carbon, low-alloy, and stainless steels using the electro-slag process

Recommended Fluxes:

SWX 382

Standard Widths:

30 mm (1.18"), 60 mm (2.36"), 90 mm (3.54")



SWX 282

EN ISO 14174: S A AF 2 DC

Benefits:

- helps produce welds with excellent CVN toughness even at temperatures as low as -196°C
- beneficial for multi-pass welding due to excellent slag removal which minimizes clean-up time and risk of inclusion
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- joining nickel-based alloys, such as Alloy 82, Alloy 600, and Alloy 625
- chemical & petrochemical refining
- pulp & paper processing
- offshore

Flux Type:

Agglomerated aluminate-fluoride flux

Basicity Index (Boniszewski): 1.9

Alloy Transfer: None

Density: ~1.2 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP

Typical Composition:

Al₂O₃ + MnO ~30%
CaO + MgO ~25%
SiO₂ + TiO₂ ~20%
CaF₂ ~20%

Packaging Available

- 55 lb. (25 kg.) EAE Bag

Commonly Used With:

- SDX NiCr-3
- SDX NiCrMo-3

SWX 382

EN ISO 14174: S A AAS 2B DC

Benefits:

- offers good bead appearance, welding characteristics, and slag removal for productive cladding with minimal part post-work
- supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- joining nickel-based alloys, such as Alloy 82, Alloy 600, and Alloy 625
- chemical & petrochemical refining
- pulp & paper processing
- offshore

Flux Type:

Agglomerated acid-aluminum-silicate flux

Basicity Index (Boniszewski): 3.7

Alloy Transfer: None

Density: ~1.1 kg/L

Grain Size: 0.2 – 2.0 mm/ 10 – 70 mesh

Type of Current: DCEP

Typical Composition:

Al₂O₃ + MnO ~30%
CaO + MgO ~25%
SiO₂ + TiO₂ ~20%
CaF₂ ~20%

Packaging Available

- 55 lb. (25 kg.) EAE Bag

Commonly Used With:

- SDX NiCr-3
- SDX NiCrMo-3

SDX NiCr-3

AWS A5.14: ErNiCr-3

EN ISO 18274: S Ni6082

Benefits:

- produces a nominal 20% Cr/3% Mn/3% Nb nickel-based alloy deposit when used with recommended fluxes
- provides excellent resistance to corrosion resistance and high service temperatures

Typical Applications:

- joining nickel alloys such as Alloy 600 and Alloy 82
- joining 9% Nickel alloys for cryogenic service
- joining chromium-molybdenum steel/stainless steel dissimilar combinations

Recommended Fluxes:

SWX 282

SDX NiCrMo-3

AWS A5.14: ERNiCrMo-3

EN ISO 18274: S Ni6625

Benefits:

- produces a nominal 22% Cr/9% Mo/3.5% Nb nickel-based alloy deposit when used with recommended fluxes
- provides excellent resistance to general and pitting corrosion, and high service temperatures

Typical Applications:

- joining nickel alloys such as Alloy 625
- joining 9% Nickel alloys for cryogenic service
- joining high-molybdenum stainless steels
- joining chromium-molybdenum steel/stainless steel dissimilar combinations

Recommended Fluxes:

SWX 282

Cromastrip NiCr-3

A5.14: EQNiCr-3

EN ISO 18274: Ni6082

Benefits:

- produces a nominal 20% Cr/3% Mn/3% Nb nickel-based alloy deposit when used with recommended fluxes
- provides excellent resistance to corrosion resistance and high service temperatures

Typical Applications:

- cladding carbon, and low-alloy steels using the submerged arc process

Recommended Fluxes:

SWX 305

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")

Cromastrip NiCrMo-3

A5.14: EQNiCrMo-3

EN ISO 18274: Ni6625

Benefits:

- produces a nominal 22% Cr/9% Mo/3.5% Nb nickel-based alloy deposit when used with recommended fluxes
- provides excellent resistance to general and pitting corrosion, and high service temperatures

Typical Applications:

- cladding carbon, and low-alloy steels using the submerged arc process

Recommended Fluxes:

SWX 305

Standard Widths:

30 mm (1.18"), 60 mm (2.36"),
90 mm (3.54")



Stainless Steel Stick Electrodes

Stick Electrodes

AWS Classification of Stainless Steel Coated Electrodes

E 3 0 8 L - 1 6

Indicates how the metal is transferred and the coating type.
(See Coating Characteristics Chart)

Indicates any changes to the original alloy.
(See Additional Requirements Chart)

Indicates what a weld made by this electrode will have in it.
(See Applications Chart)

Indicates that this is an electrode.

Positions

1 Flat, Horizontal, Vertical, Overhead

	FLAT - Usually groove welds, fillet welds only if welding like a "V."		VERTICAL - Welds on walls (travel is either up or down).
	HORIZONTAL - Fillet welds, welds on walls (travel is from side to side).		OVERHEAD - Weld that needs to be done upside down.

Coating Characteristics

Coating	Dash Number	Out of Position	Bead Ripple	Slag Removal	Spatter Level	Crack Resistance	Transfer Type	Operating Current	Bead Profile
AC-DC	-16	2	2	2	2	2	Globular	AC/DCEP	Flat
Sterling	-17	3	1	1	1	3	Spray	AC/DCEP	Concave
Ratings: 1 = the best 3 = the least									
AC-DC -16 Flat					Sterling -17 Concave				

Additional Requirements

Suffix	Additional Requirements
L	Has a lower carbon content
H	Limited to the upper range on the carbon content
Mo	Molybdenum added—pitting resistance, creep strength, ferrite increased
Ni	Nickel added—high temperature strength, corrosion resistance, added toughness

AWS Class and Applications

Class	Brief Description
A E308	Used for welding many dissimilar 300 series stainless steels
A E309	Used for welding many dissimilar metals—mild steel to stainless steel
A E310	Used to join similar alloys—some dissimilar metals
A E312	Excellent for welding dissimilar metals
A E316	Mo added to help prevent pitting and increase creep resistance
A E317	Even more Mo than E316
A E347	Cb added to prevent corrosion just outside of the weld bead
M E410	For welding martensitic stainless steels and used for surfacing carbon steels
D E2209	For welding similar duplex stainless steels
A—Austenitic M—Martensitic D—Duplex	

AWS (A5.4) Stainless Steel Stick Electrode Chemical Composition of Weld Metal Deposit, %

AWS Class	Carbon C	Chromium Cr	Nickel Ni	Molybdenum Mo	Manganese Mn	Silicon Si	Phosphorous P	Copper Cu
E308-XX	0.08 Max.	18.0–21.0	9.0–11.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E308H-XX	0.04–0.08	18.0–21.0	9.0–11.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E308L-XX	0.04 Max.	18.0–21.0	9.0–11.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E309-XX	0.15 Max.	22.0–25.0	12.0–14.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E309L-XX	0.04 Max.	22.0–25.0	12.0–14.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E309Mo	0.08 Max.	22.0–25.0	12.0–14.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E309MoL	0.08 Max.	22.0–25.0	12.0–14.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E310-XX	0.08–0.20	25.0–28.0	20.0–22.5	0.75 Max.	1.0–2.5	0.75 Max.	0.03 Max.	0.75 Max.
E312-XX	0.15 Max.	28.0–32.0	8.0–10.5	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E316-XX	0.08 Max.	17.0–20.0	11.0–14.0	2.0–3.0	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E316H-XX	0.04–0.08	17.0–20.0	11.0–14.0	2.0–3.0	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E316L-XX	0.04 Max.	17.0–20.0	11.0–14.0	2.0–3.0	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E317L-XX	0.04 Max.	18.0–21.0	12.0–14.0	2.0–3.0	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E330-XX	0.18–0.25	14.0–17.0	33.0–37.0	0.75 Max.	1.0–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E347-XX	0.08 Max.	18.0–21.0	9.0–11.0	0.75 Max.	0.5–2.5	0.90 Max.	0.04 Max.	0.75 Max.
E410-XX	0.12 Max.	11.0–13.5	0.7 Max.	0.75 Max.	1.0 Max.	0.90 Max.	0.04 Max.	0.75 Max.
E410NiMo-XX	0.06 Max.	11.0–12.5	4.0–5.0	0.40–0.70	1.0 Max.	0.90 Max.	0.04 Max.	0.75 Max.
E2209-XX**	0.04 Max.	21.5–23.5	8.5–10.5	2.5–3.5	0.5–2.0	0.90 Max.	0.04 Max.	0.75 Max.

Stainless Steel Stick Electrodes

Stainless Steel Stick Electrodes

AC-DC/Sterling AP/Smootharc Plus (-16) Ideal multipurpose stainless electrodes provide smooth, uniform and finely rippled weld beads that require minimal finishing. AC-DC/Sterling AP electrodes perform well on AC or DCEP and possess outstanding out-of-position capabilities and good strike and restrike characteristics.

Sterling® (-17) A superb family of spray transfer electrodes that produces attractive, finely rippled concave weld beads. Sterling electrodes operate well in all positions, on AC or DCEP, with self-peeling slag and excellent restrike characteristics. The direct spray arc transfer is extremely stable and exhibits higher deposition rates with little spatter.

Hobart Product	AWS Class	Smootharc Plus/ AC-DC/Sterling AP -16	Sterling -17
308/308H	E308 & E308H	•	•
308L	E308L	•	•
309	E309	•	•
309L	E309L	•	•
310	E310	•	o
312	E312	•	o
316/316H	E316 & E316H	•	•
316L	E316L	•	•
317L	E317L	•	•
347	E347	•	•
410	E410	•	o
410NiMo	E410NiMo	•	o
2209	E2209	•	o

• Offered o Not Offered

NOTE: Actual certs are included in every master carton of stainless stick electrodes at no charge.

308/308H Sterling® AP 308/308H Sterling®

AWS E308-16, E308H-16

For applications where service conditions are not severe. Intermediate layer prior to deposition of hard-facing material. Use on Types 301, 302, 304, 305, and 308 base metals. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon0.06
Manganese1.14
Silicon0.44
Chromium19.88
Nickel9.78
IronBalance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi) 86,000 (593 MPa)
Yield Strength (psi) 65,000 (448 MPa)
Elongation in 2" 45%
DeLong Ferrite Number 7

308/308L Sterling® AP 308/308L Sterling® 308L Smootharc™ Plus

AWS E308, E308L-16, E308L-17

For welding Type 308L. Properties similar to Type 308 with low C to avert carbide precipitation and inhibit subsequent carbide precipitation. Approvals and conformance: AWS Spec A5.4, ASME SF5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon0.03
Manganese1.14
Silicon0.43
Chromium19.68
Nickel9.89
IronBalance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi) 83,000 (572 MPa)
Yield Strength (psi) 64,000 (441 MPa)
Elongation in 2" 37%
DeLong Ferrite Number 9

Stainless Steel Stick Electrodes

309 (H) Sterling® AP

AWS E309-16, E309H-16

The moisture resistant, all-position 309 (H) Sterling® AP electrode is primarily designed for welding Type 309 metal but can also be used for 18-8 clad steels or dissimilar materials if the alloy content is sufficiently high for a sound, ductile deposit. It yields a uniform weld bead that is flat to slightly convex. AWS Spec A5.4, ASME SF5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.08
Chromium	23.50
Nickel.....	13.00
Molybdenum.....	0.10
Manganese	1.05
Phosphorus	0.020
Sulfur	0.016
Copper	0.10

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	88,000 (607 MPa)
Yield Strength (psi)	67,000 (462 MPa)
Elongation in 2"	37%
DeLong Ferrite Number	6-15

309/309L Sterling® AP 309/309L Sterling® 309L Smootharc™ Plus

AWS E309, E309L-16, E309L-17

Low C modification of standard Type 309 analysis used for weld overlay or welding stainless to mild or low alloy steels. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.03
Manganese	1.32
Silicon	0.41
Chromium	23.00
Nickel.....	13.50
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	79,000 (545 MPa)
Yield Strength (psi)	64,000 (441 MPa)
Elongation in 2"	41%
DeLong Ferrite Number	13

309Mo 309MoL AC-DC

AWS E309Mo-16, E309MoL-16

The addition of molybdenum to the 309 improves tensile strength and resistance. Used for 316 clad steels and joining Mo-containing steels to carbon steels: AWS Spec A5.4, ASME SF5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.03
Manganese	1.23
Silicon	0.44
Chromium	22.70
Nickel.....	13.60
Molybdenum.....	2.40
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	90,000 (621 MPa)
Yield Strength (psi)	70,000 (483 MPa)
Elongation in 2"	35%
DeLong Ferrite Number	13

310 AC-DC

AWS E310-16

For welding base metal of similar composition, when the stainless base metal is of unknown composition, and for dissimilar metals. Used as a transition layer for high restrained joints of high carbon steels. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-9)

Typical Deposit Analysis %

Carbon	0.14
Manganese	2.02
Silicon	0.46
Chromium	26.12
Nickel.....	21.00
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	86,000 (593 MPa)
Yield Strength (psi)	63,000 (434 MPa)
Elongation in 2"	40%
DeLong Ferrite Number	0

312 AC-DC

AWS E312-16

Welding Type 312 base metals. Excellent for dissimilar metal joining due to high ferrite potentials. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, 4-8)

Typical Deposit Analysis %

Carbon	0.07
Manganese	0.80
Silicon	0.40
Chromium	28.50
Nickel.....	9.10
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	115,000 (793 MPa)
Yield Strength (psi)	95,000 (655 MPa)
Elongation in 2"	25%
DeLong Ferrite Number	45

316/316H Sterling® AP 316/316H Sterling®

AWS E316-16, E316H-16, E316-17, E316H-17

For welding Type 316 steel. Applies where increased high temperature corrosion resistance of molybdenum-bearing steels are necessary. Low FN version. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.07
Manganese	1.63
Silicon	0.40
Chromium	18.50
Nickel.....	12.40
Molybdenum.....	2.21
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	85,000 (586 MPa)
Yield Strength (psi)	68,000 (469 MPa)
Elongation in 2"	45%
DeLong Ferrite Number	4

Stainless Steel Stick Electrodes

316/316L Sterling® AP 316/316L Sterling® 316L Smootharc™ Plus

AWS 316, E316L-16, E316L-17

Welding Type 316L material. Properties similar to Type 316. Suited for urea environments. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.02
Manganese	1.55
Silicon	0.48
Chromium	18.20
Nickel.....	13.00
Molybdenum.....	2.27
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	82,000 (565 MPa)
Yield Strength (psi)	61,000 (421 MPa)
Elongation in 2"	42%
DeLong Ferrite Number	2

317L AC-DC

AWS E317L-16, E317L-17

Increased molybdenum content results in higher tensile strength, better corrosion resistance, and improved high temperature creep strength when compared with 316L. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.03
Manganese	1.21
Silicon	0.51
Chromium	18.80
Nickel.....	13.70
Molybdenum.....	3.40
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	92,000 (634 MPa)
Yield Strength (psi)	69,000 (476 MPa)
Elongation in 2"	35%
DeLong Ferrite Number	4

347 AC-DC

AWS E347-16

Metal stabilized with columbium prevents carbide precipitation. Better corrosion resistance than Type 308. For welding Types 347 and 321 steels. Good corrosion resistance in steam or utility applications up to 1400°F. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.06
Manganese	1.19
Silicon	0.46
Chromium	20.24
Nickel.....	10.00
Columbium.....	0.60
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	80,000 (552 MPa)
Yield Strength (psi)	64,000 (441 MPa)
Elongation in 2"	36%
DeLong Ferrite Number	10

410 AC-DC

AWS E410-16

Air-hardening stainless for welding 12 Cr material. Requires pre and post-weld heat treatments. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.09
Manganese	0.55
Silicon	0.29
Chromium	12.30
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded (Heat Treated for 1 hr. @ 1375°F)

Tensile Strength (psi)	80,000 (552 MPa)
Yield Strength (psi)	44,000 (303 MPa)
Elongation in 2"	24%

410NiMo AC-DC

AWS E410NiMo-16

Used extensively for welding ASTM CA6NM castings as well as 410, 410S and 405 base metals. Better as-welded toughness than 410. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.02
Manganese	0.68
Silicon	0.35
Chromium	12.48
Nickel.....	4.30
Molybdenum.....	0.55
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded (Stress Relieved for 1 hr. @ 1125°F)

Tensile Strength (psi)	134,000 (924 MPa)
Yield Strength (psi)	123,000 (848 MPa)
Elongation in 2"	18%

2209 AC-DC

AWS E2209-16

Specially formulated for welding the 22 Cr-5 Ni-3 Mo (Type 2205) duplex stainless steels. The deposited duplex weld metal offers combined high strength with improved pitting and SSC resistance. Approvals and conformance: AWS Spec A5.4, ASME SFA5.4 (F-5, A-8)

Typical Deposit Analysis %

Carbon	0.03
Manganese	1.01
Silicon	0.38
Chromium	22.90
Nickel.....	10.10
Molybdenum.....	3.00
Nitrogen	0.093
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	115,000 (793 MPa)
Yield Strength (psi)	90,000 (621 MPa)
Elongation in 2"	27%
DeLong Ferrite Number (Extended)	34
Impact Strength, -50°F (Charpy v Notch)	23 ft.lbf

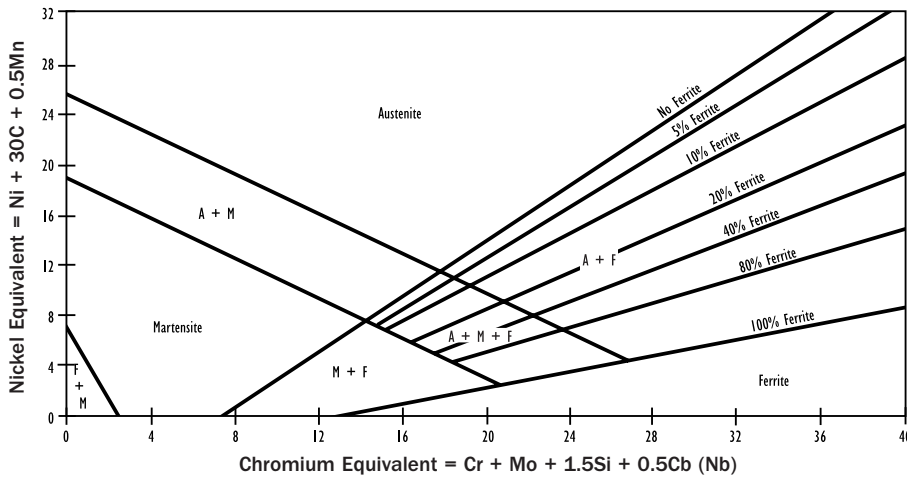
Comparative Index of Stainless Steel Electrodes

AWS Class	Hobart	Techalloy	Sandvik	Lincoln
E308L-16	308/308L Sterling AP	Tech Rod 308L-16	–	Red Baron 308L MR
E308L-17	308L-17 Sterling	Tech Rod 308L-17	19.9. LR	Blue Max 308/308L AC/DC
E308H-16	308/308H Sterling AP	Tech Rod 308-16	–	Red Baron 308/308H MR
E308H-17	308/308H Sterling	Tech Rod 308-17	–	–
E309L-16	309/309L Sterling AP	Tech Rod 309L-16	–	Red Baron 309/309L MR
E309L-17	309L Sterling	Tech Rod 309L-17	24.3. LR	Blue Max 309/309L AC/DC
E309-17	309-17 Sterling	Tech Rod 309-17	–	–
E309Mo-17	309 Mo/309MoL	–	23.12.2. LR	–
E310-16	310 AC-DC	Tech Rod 310-16	–	Red Baron 310 MR
E312-16	312 AC-DC	Tech Rod 312-16	29.9 R	–
E316L-16	316/316L Sterling AP	Tech Rod 316L-16	19.12.3. LRV	Red Baron 316/316L MR
E316L-17	316L-17 Sterling	Tech Rod 316L-17	19.12.3. LR	Blue Max 316/316L AC/DC
E316H-16	316/316H Sterling AP	Tech Rod 316-16	–	–
E316H-17	316/316H-17 Sterling	Tech Rod 316-17	–	–
E317L-16	317L AC-DC	Tech Rod 317-16	19.13.4. LR	–
E347-16	347 AC-DC	Tech Rod 347-16	–	–
E410-16	410 AC-DC	Tech Rod 410-16	–	–
E410NiMo-16	410NiMo AC-DC	Tech Rod 410NiMo-16	–	–
E2209-16	2209 AC-DC	Tech Rod 2209	22.9.3. LR (B)	–

Stainless Steel Stick Electrodes

TECHNICAL SECTION

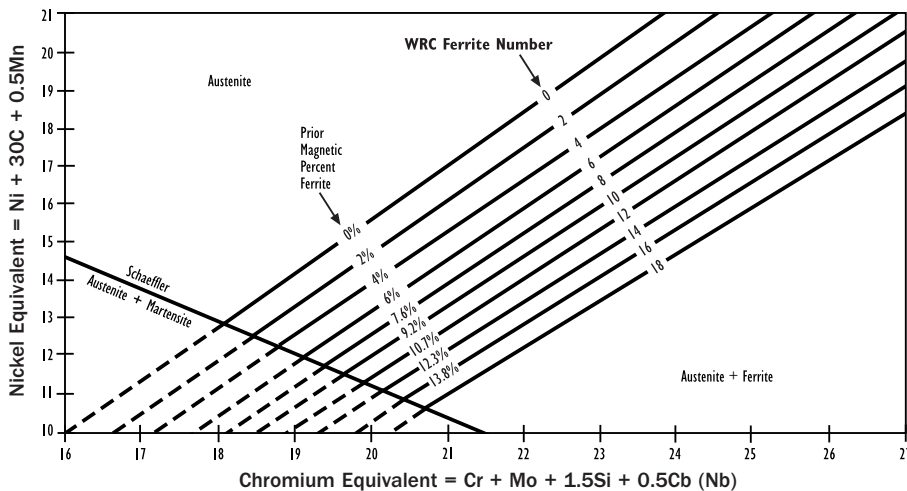
Schaeffler Constitution Diagram



Calculate the nickel and chromium equivalents from the weld metal analysis. If nitrogen analysis of the weld metal is not available, assume 0.06% for GTAW and covered electrodes or 0.08% for GMAW weld metals.

If the chemistry is accurate, the diagram predicts the WRC Ferrite Number within ± 3 in approximately 90% of the tests for the 308, 309, 316, and 317 families.

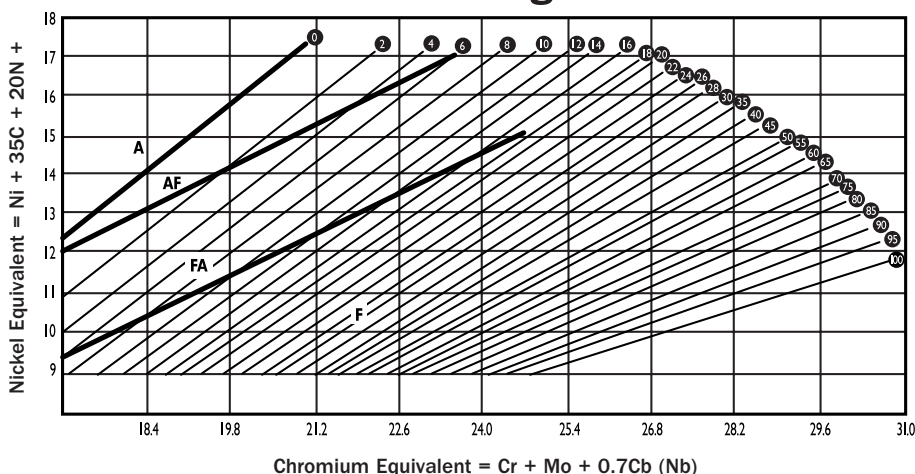
DeLong Constitution Diagram



Comparison with Schaeffler Diagram:

1. The Nickel Equivalent allows for a nitrogen pick-up of 30N.
2. Ferrite Numbers for 308, 308L, and 347 covered electrodes are similar. The higher alloy 309, 316, and 317 families have about 2 to 4 higher FN on this diagram.
3. Generally, this diagram correlates better with GTAW and GMAW weld metals because it allows for nitrogen pick-up.
4. The Schaeffler austenite-martensite boundary has been included here for reference.

1992 WRC Constitution Diagram



Comparison with Schaeffler and DeLong Diagrams:

1. Considered more accurate for predicting ferrite in higher-alloyed stainless steels.
2. Copper (Cu) has been added to help determine the FN of duplex stainless steel welds.
3. This diagram should be limited to welds that contain less than 3Mo, less than 1Si, less than 10Mn and less than 0.2N.
4. A = Entirely austenite
AF = Austenite with some ferrite
FA = Ferrite with islands of austenite
F = Ferrite alone

Stainless Steel Stick Electrodes

Stainless Steel Stick Electrode Suggested Operating Ranges

ELECTRODE DIAMETER		AC-DC AND STERLING AP		STERLING	
inches	mm	Flat and Horizontal Welding	Vertical Up Welding	Flat and Horizontal Welding	Vertical Up Welding
3/32"	2.4	65–80	45–65	50–80	45–65
1/8"	3.2	90–110	60–80	85–120	55–80
5/32"	4.0	125–150	65–85	130–170	65–85
3/16"	4.8	140–190	NR	160–205	NR
1/4"	6.4	210–300	NR	—	—

NR = Not Recommended

Stainless Steel Electrodes Per Pound

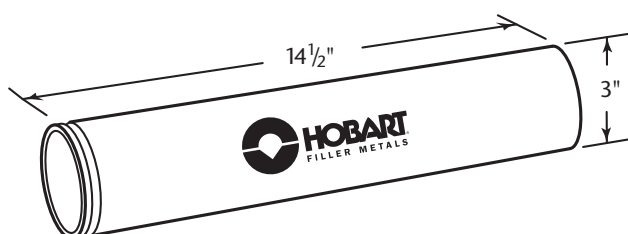
Hobart Type	Diameter: Length:	3/32" (2.4mm) 10"	1/8" (3.2mm) 14"	3/16" (4.8mm) 14"	5/32" (4.0mm) 14"	1/4" (6.4mm) 14"
AC-DC/Sterling AP (-16) Smootharc Plus		34	13	9	6	3
Sterling (-17)		34	13	9	6	—

Stainless Steel Stick Electrode Pallet Information

Length	Hobart Type	PALLET WEIGHT (LB)		PALLET DIMENSIONS			Number of Units Per Pallet
		Net	Gross (est.)	Depth	Width	Height	
3/32"–10"	AC-DC/Sterling AP Smootharc Plus	792	892	38"	45"	39"	132 (6 lb Cans)
1/8"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
5/32"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/16"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
1/4"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/32"–10"	Sterling	792	892	38"	45"	39"	132 (6 lb Cans)
1/8"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
5/32"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/16"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)

Packaging Options

10 & 14-Inch Electrodes



6 & 10 lb Hermetically Sealed Can

Note: The same can is used for the 10" and 14" electrodes. A spacer is used for 10" electrodes.

All Hobart stainless steel electrodes are stamped with product name and lot number for complete traceability.

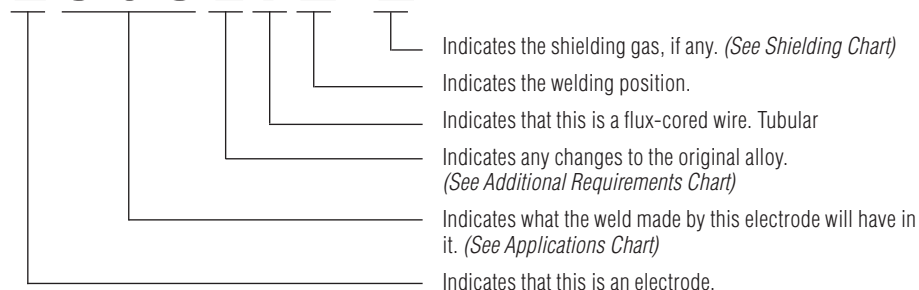


Stainless Steel Tubular Wires

Stainless Steel Tubular Wires

AWS Classification of Stainless Steel Tubular Wires

E 308 LT 1-1



Positions

1 Flat, Horizontal, Vertical, Overhead	0 Flat and Horizontal Only
FLAT - Usually groove welds, fillet welds only if welding like a "V."	VERTICAL - Welds on walls (travel is either up or down).
HORIZONTAL - Fillet welds, welds on walls (travel is from side to side).	OVERHEAD - Weld that needs to be done upside down.

Chemical Symbols

C	Carbon	Increases strength and hardness—reduces corrosion resistance.
Mn	Manganese	Improves crack resistance in fully austenitic welds.
Si	Silicon	Increased corrosion and scaling resistance.
P	Phosphorus	Causes cracking if too high.
S	Sulfur	Aids in machining. Cracking problems like P.
Cr	Chromium	Main corrosion and scaling resistance element.
Ni	Nickel	Better cold toughness—corrosion resistance.
Mo	Molybdenum	High temperature tensile/creep strength pitting corrosion resistance.
Ti	Titanium	High temperature stabilizer—age hardening.
N	Nitrogen	Raises strength—minimize grain growth.
Cb	Columbium	High temperature stabilizer—hardening—strengthening.

Additional Requirements

Suffix	Additional Requirements
L	Has a lower carbon content
H	Limited to the upper range on the carbon content
Mo	Molybdenum added—pitting resistance, creep strength, ferrite increased
Ni	Nickel added—high temperature strength, corrosion resistance, + ductility

AWS Class and Applications

Class	Brief Description
A E308	Used for welding many dissimilar 300 series stainless steels
A E309	Used for welding many dissimilar metals—mild steel to stainless steel
A E316	Mo added to help prevent pitting and increase creep resistance
A E317	Even more Mo than E316
A E347	Cb added to prevent corrosion just outside of the weld bead
M E410	For welding martensitic stainless steels and used for surfacing carbon steels
F E430	For welding similar alloys and corrosion-resistant surfacing
D E2209	For welding similar duplex stainless steels

A—Austenitic M—Martensitic D—Duplex

Shielding Gas and Current

Dash Number	Shielding Gas	Welding Current
-1	CO ₂	DCEP
-3	None (Self-Shielded)	DCEP
-4	75-80% Ar/ Balance CO ₂	DCEP

AWS (A5.22) Stainless Steel Tubular Wire Chemical Composition of Weld Metal Deposit, %

AWS Class	Carbon C	Chromium Cr	Nickel Ni	Molybdenum Mo	Manganese Mn	Silicon Si
Open-Arc						
E308LT0-3	0.03 Max.	19.5–22.0	9.0–11.0	0.5 Max.	0.5–2.5	1.0
E309LT0-3	0.03 Max.	23.0–25.5	12.0–14.0	0.5 Max.	0.5–2.5	1.0
Gas-Shielded						
E308LT1- 4/-1	0.04 Max.	18.0–21.0	9.0–11.0	0.5 Max.	0.5–2.5	1.0
E309LT1- 4/-1	0.04 Max.	22.0–25.0	12.0–14.0	0.5 Max.	0.5–2.5	1.0
E316LT1- 4/-1	0.04 Max.	17.0–20.0	11.0–14.0	2.0–3.0	0.5–2.5	1.0
E410NiMoT1- 4/-1	0.06 Max.	11.0–12.5	4.0–5.0	0.40–0.70	1.0 Max.	1.0

Note: All products listed above also require the following: 0.04 Max. Phosphorus, 0.5 Max. Copper, 0.03 Max. Sulfur

Stainless Steel Wires

Stainless Steel Open-Arc Tubular Wires

Hobart® Fabshield® O Wires are designed for joining and cladding in the flat and horizontal positions. These products perform well in field fabrication or in drafty shop conditions, because they do not require external shielding gas.

Hobart Product	AWS Class	Positions
Fabshield® 308L-0	E308LT0-3	Flat, Horizontal
Fabshield® 309L-0	E309LT0-3	Flat, Horizontal

Stainless Steel Gas-Shielded Flux-Cored Tubular Wires

Hobart ChromaWeld™ LTO and LT1 Stainless wires are truly a premium stainless gas shielded flux-cored product. ChromaWeld™ features a bright, flat bead profile, clean easy slag release, minimal spatter, higher moisture resistance, and excellent overall weld bead appearance combined with excellent welder appeal.

Hobart Product	AWS Class	Positions
ChromaWeld 308LT1	E308LT1-4/-1	All
ChromaWeld 309LT1	E309LT1-4/-1	All
ChromaWeld 316LT1	E316LT1-4/-1	All
FabCO® 410NiMoT1	E410NiMoT1-4/-1	All

Stainless Steel Gas-Shielded Metal-Cored Tubular Wires

Hobart Goldcor wires are designed to meet the needs of chemical/food service/automotive exhaust fabricators that have poor to fair fit up and desire a metal-cored wire that can produce a soft arc at superior welding speeds.

Hobart Product	AWS Class	Positions
Goldcor 308LSi	EC308LSi	Flat, Horizontal
Goldcor 309LSi	EC309LSi	Flat, Horizontal
Goldcor 316LSi	EC316LSi	Flat, Horizontal

STAINLESS STEEL OPEN-ARC FLUX-CORED WIRES

Fabshield® 308L-0

FLAT & HORIZONTAL

AWS E308LT0-3

An austenitic stainless steel deposit that can be used for joining common austenitic stainless steels such as Types 304, 304L, 321, CF-8, and CF-3. It provides good resistance to intergranular corrosion. It can also be used as an intermediate layer for hardfacing.

Typical Deposit Analysis %

Carbon	0.03
Manganese	1.10
Silicon	0.44
Chromium	20.20
Nickel	9.80
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	94,000 (648 MPa)
Yield Strength (psi)	70,000 (483 MPa)
Elongation in 2"	40%
DeLong Ferrite Number	8

Diameters 1/16", 3/32"

Approvals and conformance:

- AWS Spec A5.22
- ASME SFA5.22 (F-6, A-8)

Fabshield® 309L-0

FLAT & HORIZONTAL

AWS E309LT0-3

An austenitic stainless steel deposit used for joining common austenitic stainless steels such as Types 304, 304L, 309, and 309L. It is often used for overlaying carbon steel and low alloy steel, as well as for joining stainless steel to carbon or low alloy steel.

Typical Deposit Analysis %

Carbon	0.03
Manganese	1.73
Silicon	0.58
Chromium	23.10
Nickel	12.90
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	91,000 (627 MPa)
Yield Strength (psi)	70,000 (483 MPa)
Elongation in 2"	40%
DeLong Ferrite Number	11

Diameters 1/16", 3/32"

Approvals and conformance:

- AWS Spec A5.22
- ASME SFA5.22 (F-6, A-8)

GAS SHIELDED STAINLESS STEEL FLUX-CORED WIRES

FabCO® 410NiMoT1

ALL POSITION

AWS E410NiMoT1-4/-1

A low carbon martensitic stainless steel deposit used for joining Type CA-6NM stainless steel castings as well as for joining Types 409, 410, 410S, and 405 stainless steels. The 410NiMoT1 has been tested to and has met hardness requirements set forth by NACE MR0175-95, with a PWHT procedure.

Typical Deposit Analysis %

Carbon	0.03
Manganese	0.30
Silicon	0.38
Chromium	11.50

Typical Weld Metal Properties

(Heat Treated for 1 hr. @ 1150°F):

Tensile Strength (psi)	131,000 (903 MPa)
Yield Strength (psi)	111,000 (765 MPa)
Elongation in 2"	21%

As Welded:

Tensile Strength (psi)	161,900 (1116 MPa)
Yield Strength (psi)	144,900 (999 MPa)
Elongation in 2"	20%
75/25 (Ar/CO ₂) or 100% CO ₂	

Diameters .045", 1/16", 3/32"

Approvals and conformance:

- AWS Spec A5.22
- ASME SFA5.22 (F-6)

Stainless Steel Wires

CHROMAWELD™ STAINLESS STEEL GAS-SHIELDED FLUX-CORED WIRES

ChromaWeld™ 308LT1

ALL POSITION

AWS E308LT1-1/-4

An austenitic stainless steel gas shielded flux-cored wire with low carbon used for joining common austenitic stainless steels such as Types 301, 302, 304 and 304L, CF-8, and CF-3.

Features

- Self-detaching slag
- Spray-like arc transfer
- High moisture resistance

Benefits

- Welds well in vertical (up) position, as well as flat & horizontal
- Excellent welder appeal
- Low spatter and less clean-up
- Good weld soundness & extended shelf-life

Typical Deposit Analysis %

Carbon	0.025
Manganese	1.40
Silicon	0.52
Chromium	19.22
Nickel.....	10.05
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	80,000 (552 MPa)
Yield Strength (psi)	59,000 (407 MPa)
Elongation in 2"	42%
DeLong Ferrite Number	10
75% Ar-25% CO ₂ or 100% CO ₂	

Diameters	.045", 1/16"
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ChromaWeld™ 309LT1

ALL POSITION

AWS E309LT1-1/-4

An austenitic stainless steel all-position gasshielded flux-cored wire with low carbon used for joining common austenitic stainless steels such as Types 304, 304L, 309 and 309L. It is often used for joining stainless steel to carbon and low alloy steel, as well as for overlaying carbon steel and low alloy steel.

Features

- Self-detaching slag
- Spray-like arc transfer
- High moisture resistance

Benefits

- Welds extremely well in vertical (up) position, as well as flat and horizontal
- Excellent welder appeal
- Low spatter and less clean-up
- Good weld soundness & extended shelf-life

Typical Deposit Analysis %

Carbon	0.027
Manganese	1.23
Silicon	0.53
Chromium	23.95
Nickel.....	12.65
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	83,000 (572 MPa)
Yield Strength (psi)	61,000 (421 MPa)
Elongation in 2"	38%
DeLong Ferrite Number	17
75% Ar/25% CO ₂ or 100% CO ₂	

Diameters	.045", 1/16"
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ChromaWeld™ 316LT1

ALL POSITION

AWS E316T1-1/-4

An austenitic stainless steel all-purpose gasshielded flux-cored wire with low carbon used for joining Types 316, 316L, CF-8M and CF-3M stainless steels.

Features

- Self-detaching slag
- Spray-like arc transfer
- High moisture resistance

Benefits

- Welds extremely well in vertical (up) position, as well as flat & horizontal
- Excellent welder appeal
- Low spatter and less clean-up
- Good weld soundness & extended shelf-life

Typical Deposit Analysis %

Carbon	0.028
Manganese	1.25
Silicon.....	0.55
Chromium	18.80
Nickel.....	12.60
Molybdenum.....	2.65
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	82,000 (565 MPa)
Yield Strength (psi)	60,000 (414 MPa)
Elongation in 2"	39%
DeLong Ferrite Number	9
75% Ar/25% CO ₂ or 100% CO ₂	

Diameters	.045", 1/16"
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Stainless Steel Tubular Wires

TECHNICAL SECTION

Comparative Index of Stainless Steel Open-Arc Tubular Wires

AWS Class	Hobart	ESAB	Stoody
E308LT0-3	Fabshield® 308L-0	Core-Bright 308L	SOS 308L
E309LT0-3	Fabshield® 309L-0	Core-Bright 309L	SOS 309L

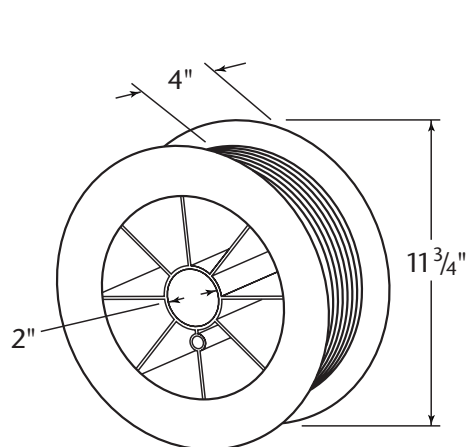
Comparative Index of Stainless Steel Gas-Shielded Tubular Wires

AWS Class	Hobart	ESAB	Kobelco	Lincoln	Sandvik
E308LT1-4/-1	ChromaWeld 308LT1	Shield-Bright 308L	DW-308LP	UltraCore® FCP 308L	308LT-1AP
E309LT1-4/-1	ChromaWeld 309LT1	Shield-Bright 309L	DW-309LP	UltraCore® FCP 309L	309LT-1AP
E316LT1-4/-1	ChromaWeld 316LT1	Shield-Bright 316L	DW-316LP	UltraCore® FCP 316L	316LT-1AP
E410NiMoT1-4/-1	FabCO® 410NiMoT1	—	—	—	—

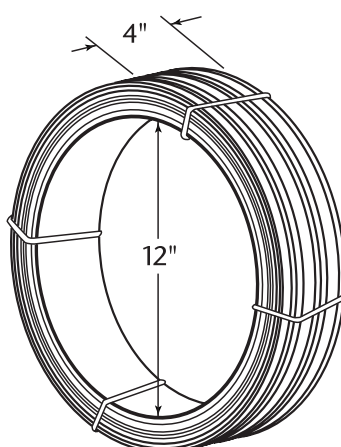
Stainless Steel Tubular Wire Pallet Information

Hobart Type	Pallet Weight (lb)		Pallet Dimensions			Number of Items Per Pallet
	Net	Gross (est.)	Depth	Width	Height	
30 lb Spool	1440	1545	24"	24"	27"	48 (30 lb Spools)
28 lb Spool	2352	2432	31"	47"	32"	84 (28 lb Spools)
60 lb Coil	1680	1743	36"	36"	35"	28 (60 lb Spools)

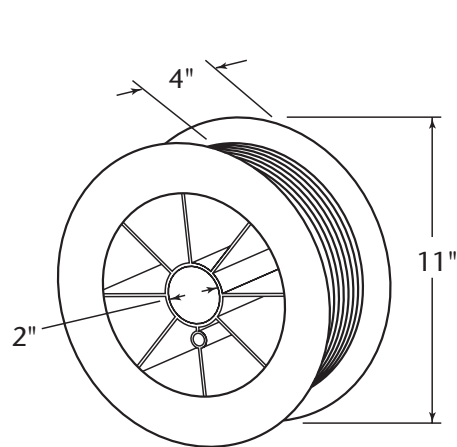
Packaging Options



30 lb Plastic Spool



60 lb Coil



28 lb Plastic Spool

Stainless Steel Tubular Wires

TECHNICAL SECTION

Stainless Steel Dissimilar Welding Chart

Base Metals	201	202	301	302	302B	303	304	304L	305	308	309	309S	310	310S	314	316	316L	317	317L	321	330	347	348	403	405	410	414	416	420	430	430F	431	440A	440B	440C	446	Base Metals	
	308	308	308	308	308	308 312	308	308	308	308	308	308	308	308	308 312	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	201	
		308	308	308	308	308 312	308	308	308	308	308	308	308	308	308 312	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	202	
			308	308	308	308 312	308	308	308	308	308	308	308	308	308 312	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	301	
				308	308	308 312	308	308	308	308	308	308	308	308	308 312	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	302	
					308	308 312	308	308	308	308	308	308	308	308	308 312	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	302B	
						308 312	308 312	308 312	308 312	308 312	308 312	308 312	312	312	312	308 312	308 312	308 312	308 312	308 312	312 309	308 312	308 312	309	309	309	309	309	309	309	309	309	309	309	312	303		
							308	308	308	308	308	308	308	308	308 312	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	304	
								308L	308	308	308	308	308	308	308 312	308	308L	308	308L	308L	312 309	308L	308L	309	309	309	309	309	309	309	309	309	309	309	309	310	304L	
									308 310	308	308	308	310 308	310 308	312 309	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	305	
										308	308	308	308	308 312	308	308	308	308	308	308	312 309	308	308	309	309	309	309	309	309	309	309	309	309	309	309	310	308	
											309	309	309	309 312	309	309 316	309	309	309	308 347	312 309	308 347	308 347	309	309	309	309	309	309	309	309	309	309	309	310	309		
												309	309	309 312	309	309 316L	316	316	316	308 347	312 309	308 347	308 347	309	309	309	309	309	309	309	309	309	309	309	310	309S		
													310	310	310 312	316	316	317	317L	308	312 310	308 347	308 347	309	309	309	309	309	309	309	309	309	309	309	309	310	310	
														310	310 312	316	316	317	317L	308	312 310	308 347	308 347	309	309	309	309	309	309	309	309	309	309	309	309	310S		
																316 312	316	316	317	308	312 310	308 347	308 347	309	309	309	309	309	309	309	309	309	309	309	309	314		
																	316 16-8-2	316	316	308	312 309	308 16-8-2	308 316	309	309	309	309	309	309	309	309	309	309	309	310	316		
																		316L	316	316L	308L	312 309	316L	316L	309	309	309	309	309	309	309	309	309	309	310	316L		
																			317	317	308	312 309	308L 16-8-2	308L 16-8-2	309	309	309	309	309	309	309	309	309	309	310	317		
																					317L	308L 347	308L 347	309	309	309	309	309	309	309	309	309	309	309	310	317L		
																						347	312 309	347	347	309	309	309	309	309	309	309	309	309	310	321		
																							330	312 309	312 309	312	312	312	312	312	312	312	312	312	312	330		
																								347	347	309	309	309	309	309	309	309	309	309	309	327		
																									348	309	309	309	309	309	309	309	309	309	309	348		
																										410	410	410	410	312 309	410	430	410	410	410	410	403	
																											410	410	410	312 309	410	430	410	410	410	410	405	
																												410	410	312 309	410	430	410	410	410	410	410	
																													309	312 309	410	430	410	410	410	410	414	
																														410	309	410	309	410	309	309	416	
																															420	410	309	410	420	420	420	420
																																430	309	430	430	430	430	
																																	309	309	309	309	309	430F
																																		309	310	431		
																																		309	309	310	440A	
																																		309	309	309	440B	
																																		309	309	310	440C	
																																			312 310	446		

This chart is only a suggestion of which filler metals should be adequate for the joining of the stainless steels. This does not mean that other filler metal alloys are not recommended or of less quality. In all instances the chart should be used as a reference only. Actual application should dictate the proper alloy choice.

The gray sections of the chart indicate “free-matching” alloys, which are considered not weldable. This is due to the high percentage of sulfur or other low melting point elements that cause hot cracking. If high-quality joints are required welding is not generally recommended.

This chart does not indicate welding procedure. Some stainless steels require preheat while others should not have a preheat. Some welds require a buttering layer or other more rigid procedure. Suppliers may be contacted regarding procedure recommendations.

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Stainless Steel Tubular Wires

TECHNICAL SECTION

Suggested Parameters and Typical Deposition Data for Fabshield®, FabCO® Stainless Flux-Cored Wires

Diameter	Electrical Stick-Out*	Voltage † Range	Current Range † (amps)	Deposition Rate (lb/hr)	Deposition Efficiency %
1/16"	1/2"–1"	26–32	150–275	9–15	85–88
3/32"	1"–1-1/2"	26–32	225–350	13–17	85–88

*For 410-O and 410 NiMo-O, stick-out should be 1-1/2" for all diameters (these martensitic grades, being lower in Cr, have less tolerance for N).
†Note: Voltage and current should be in phase. If voltage is at the low end of the range, current also should be at the low end. Same way for high-side settings.

Operating Ranges and Deposition Rates for ChromaWeld Wires

Diameter Electric Stick-Out Position	Arc Voltage (volts)	Current DCEP (+) (amps)	Approximate Wire Feed Speed (in/min)	Deposition Rates (lbs/hr)
.045" (1.2 mm)	24	140	210	5.0
5/8" – 3/4" (16 mm – 19 mm) Flat, Horizontal & Vertical Up	25 – 29 33	160 – 200 300	275 – 380 680	6.0 – 8.0 15.0
1/16" (1.6 mm) 3/4" – 1" (19 – 25.4 mm) Flat, Horizontal & Vertical Up	28 29 – 33 35	200 240 – 280 350	155 230 – 290 420	6.5 8.5 – 11.0 16.0

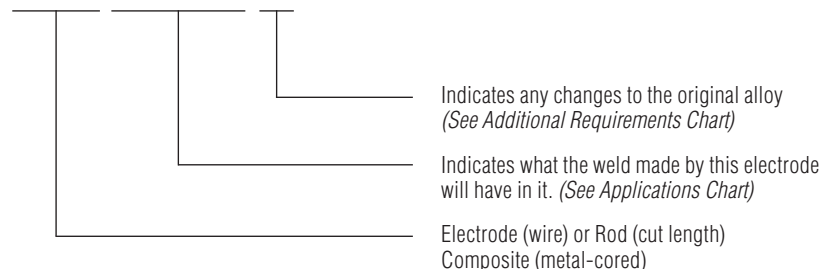
*When using CO2 shielding gas, add 1–2 volts. **BOLD** – Optimum parameters for welder appeal.

Stainless Steel Wires

Metal-Cored/Solid Wire

AWS Classification of Stainless Steel Solid Wires

ER308L



Positions

1 Flat, Horizontal, Vertical, Overhead	0 Flat and Horizontal Only
FLAT - Usually groove welds, fillet welds only if welding like a "V."	VERTICAL - Welds on walls (travel is either up or down).
HORIZONTAL - Fillet welds, welds on walls (travel is from side to side).	OVERHEAD - Weld that needs to be done upside down.

Chemical Symbols

C	Carbon	Increases strength and hardness—reduces corrosion resistance.
Mn	Manganese	Improves crack resistance in fully austenitic welds.
Si	Silicon	Increased corrosion and scaling resistance.
P	Phosphorus	Causes cracking if too high.
S	Sulfur	Aids in machining. Cracking problems like P.
Cr	Chromium	Main corrosion and scaling resistance element.
Ni	Nickel	Better cold toughness—corrosion resistance.
Mo	Molybdenum	High temperature tensile/creep strength pitting corrosion resistance.
Ti	Titanium	High temperature stabilizer—age hardening.
N	Nitrogen	Raises strength—minimize grain growth.
Cb	Columbium	High temperature stabilizer—hardening—strengthening.

Additional Requirements

Suffix	Additional Requirements
L	Has a lower carbon content
H	Limited to the upper range on the carbon content
Mo	Molybdenum added—pitting resistance, creep strength, ferrite increased
Ni	Nickel added—high temperature strength, corrosion resistance, added toughness

AWS Class and Applications

Class	Brief Description
A E308	Used for welding many dissimilar 300 series stainless steels
A E309	Used for welding many dissimilar metals—mild steel to stainless steel
A E310	Used to join similar alloys—some dissimilar metals
A E316	Mo added to help prevent pitting and increase creep resistance
A E317	Even more Mo than E316
A E347	Cb added to prevent corrosion just outside of the weld bead
M E410	For welding martensitic stainless steels and used for surfacing carbon steels
F E430	For welding similar alloys and corrosion-resistant surfacing
D E2209w	For welding similar duplex stainless steels
A—Austenitic M—Martensitic F—Ferritic D—Duplex	

Stainless Steel Cut Lengths Per Pound

Diameter:	1/16" (1.6mm)	3/32" (2.4mm)	1/8" (3.2mm)
Length 36"	31	14	8

AWS (A5.9) Stainless Steel Solid Wire Chemical Composition Requirements, %

AWS Class	Carbon C	Chromium Cr	Nickel Ni	Molybdenum Mo	Manganese Mn	Silicon Si	Phosphorus P	Copper Cu
ER308	0.08 Max.	19.5–22.0	9.0–11.0	0.75 Max.	1.0–2.5	0.30–0.65	0.03 Max.	0.75 Max.
ER308H	0.04–0.08	19.5–22.0	9.0–11.0	0.50 Max.	1.0–2.5	0.20–0.65	0.03 Max.	0.75 Max.
ER308L	0.03 Max.	19.5–22.0	9.0–11.0	0.75 Max.	1.0–2.5	0.30–0.65	0.03 Max.	0.75 Max.
ER308LSi	0.03 Max.	19.5–22.0	9.0–11.0	0.75 Max.	1.0–2.5	0.65–1.00	0.03 Max.	0.75 Max.
ER309	0.12 Max.	23.0–25.0	12.0–14.0	0.75 Max.	1.0–2.5	0.30–0.65	0.03 Max.	0.75 Max.
ER309L	0.03 Max.	23.0–25.0	12.0–14.0	0.75 Max.	1.0–2.5	0.20–0.65	0.03 Max.	0.75 Max.
ER309LSi	0.03 Max.	23.0–25.0	12.0–14.0	0.75 Max.	1.0–2.5	0.65–1.00	0.03 Max.	0.75 Max.
ER316	0.08 Max.	18.0–20.0	11.0–14.0	2.0–3.0	1.0–2.5	0.30–0.65	0.03 Max.	0.75 Max.
ER316H	0.04–0.08	18.0–20.0	11.0–14.0	2.0–2.0	1.0–2.5	0.30–0.65	0.03 Max.	0.75 Max.
ER316L	0.03 Max.	18.0–20.0	11.0–14.0	2.0–3.0	1.0–2.5	0.30–0.6	0.03 Max.	0.75 Max.
ER316LSi	0.08 Max.	18.0–20.0	11.0–14.0	2.0–3.0	1.0–2.5	0.65–1.00	0.03 Max.	0.75 Max.
ER347*	0.08 Max.	19.0–21.5	9.0–11.0	0.75 Max.	1.0–2.5	0.30–0.65	0.03 Max.	0.75 Max.
ER410	0.12 Max.	11.5–13.5	0.6 Max.	0.75 Max.	0.6 Max.	0.5 Max.	0.03 Max.	0.75 Max.

* Also requires 10 x C min./1.0 max. of Cb

STAINLESS STEEL SOLID WIRES — SPOOLED/COILED/CUT LENGTHS

308/308L

AWS ER308, ER308L

Lower range carbon 308 to help prevent intergranular corrosion. Used to weld Types 201, 302, 304, and 308 stainless steels. Also used for joining some dissimilar 300 series stainless steels.

Typical Deposit Analysis %

Carbon	0.02
Chromium	20.50
Nickel.....	10.50
Mo	0.30
Manganese	1.70
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	85,000 (586 MPa)
Yield Strength (psi)	58,000 (400 MPa)
Elongation in 2"	36%
Impact Resistance RT	96 ft•lbs
(Charpy V Notch) -320°F	43 ft•lbs
DeLong Ferrite Number	11

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

Cut lengths available.

308/308H

AWS ER308, ER308H

Use on Types 301, 302, 305, and 308 base metals. Carbon is restricted to the higher range (0.04-0.08%) to give increased strength for applications where high mechanical properties are required.

Typical Deposit Analysis %

Carbon	0.05
Chromium	20.00
Nickel.....	10.00
Molybdenum.....	0.20
Manganese	1.70
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	88,000 (607 MPa)
Yield Strength (psi)	60,000 (414 MPa)
Elongation in 2"	40%
Impact Resistance RT	92 ft•lbs
(Charpy V Notch)	
DeLong Ferrite Number	10

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

308L HiSi

AWS ER308LSi

A 308L chemistry which has been modified with a higher silicon level to increase weld puddle fluidity, ensuring better tie-ins and potentially higher welding speeds.

Typical Deposit Analysis %

Carbon	0.02
Chromium	20.00
Nickel.....	10.00
Molybdenum.....	0.30
Manganese	1.60
Silicon	0.80
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	86,000 (593 MPa)
Yield Strength (psi)	57,000 (393 MPa)
Elongation in 2"	42%
Impact Resistance RT	92 ft•lbs
(Charpy V Notch) -320°F	33 ft•lbs
DeLong Ferrite Number	12

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

309/309L

AWS ER309, ER309L

Used to join similar 309L alloys or join 300 series stainless steels to carbon or low alloy steels.

Typical Deposit Analysis %

Carbon	0.02
Chromium	24.00
Nickel.....	13.50
Molybdenum.....	0.20
Manganese	2.10
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	87,000 (600 MPa)
Yield Strength (psi)	59,000 (407 MPa)
Elongation in 2"	40%
Impact Resistance RT	100 ft•lbs
(Charpy V Notch)	
DeLong Ferrite Number	12

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

Cut lengths available

309 (H)

AWS ER309

This product is produced in the upper range of carbon content to give increased high temperature strength. For welding Type 309 stainless steels, 18-8 clad steel, or dissimilar metals.

Typical Deposit Analysis %

Carbon	0.06
Chromium	24.00
Nickel.....	12.50
Molybdenum.....	0.20
Manganese	1.70
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	92,000 (634 MPa)
Yield Strength (psi)	60,000 (414 MPa)
Elongation in 2"	38%
Impact Resistance RT	85 ft•lbs
(Charpy V Notch)	
DeLong Ferrite Number	9

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

309L HiSi

AWS ER309LSi

A modified 309L deposit. The higher silicon levels help to overcome the typical sluggish nature of 300 series stainless steel welding puddles.

Typical Deposit Analysis %

Carbon	0.02
Chromium	24.00
Nickel.....	13.00
Molybdenum.....	0.20
Manganese	1.70
Silicon	0.85
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	87,000 (600 MPa)
Yield Strength (psi)	56,000 (386 MPa)
Elongation in 2"	36%
Impact Resistance RT	92 ft•lbs
(Charpy V Notch)	
DeLong Ferrite Number	10

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

Stainless Steel Wires

STAINLESS STEEL SOLID WIRES — SPOOLED/COILED/CUT LENGTHS

316/316L

AWS ER316, ER316L

A molybdenum bearing alloy for increased pitting corrosion resistance. The carbon is limited to the lower range for better intergranular corrosion resistance.

Typical Deposit Analysis %

Carbon	0.02
Chromium	19.00
Nickel.....	12.50
Molybdenum.....	2.50
Manganese	1.70
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	86,000 (593 MPa)
Yield Strength (psi)	57,000 (393 MPa)
Elongation in 2"	36%
Impact Resistance RT	82 ft•lbs
(Charpy V Notch) -320°F	34 ft•lbs
DeLong Ferrite Number	10

Approvals and conformance:

AWS Spec A5.9, ASME
SFA5.9 (F-6, A-8)

Cut lengths available

410

AWS ER410

Air-hardening stainless for welding 12Cr material. Heat treatable welding deposit. Preand post-weld heat treatments may be required.

Typical Deposit Analysis %

Carbon	0.08
Chromium	13.00
Molybdenum.....	0.10
Manganese	0.50
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

(Heat Treated for 1 hr. @ 1375°F)

Tensile Strength (psi)	79,000 (545 MPa)
Yield Strength (psi)	44,000 (303 MPa)
Elongation in 2"	25%
(Charpy V Notch) -320°F	34 ft•lbs
DeLong Ferrite Number	—

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-6)

316L HiSi

AWS ER316LSi

A 316L formulation with an increased silicon level for better wetting action when using the GMAW process.

Typical Deposit Analysis %

Carbon	0.02
Chromium	19.00
Nickel.....	12.50
Molybdenum.....	2.50
Manganese	1.70
Silicon	0.85
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	87,000 (600 MPa)
Yield Strength (psi)	57,000 (393 MPa)
Elongation in 2"	38%
Impact Resistance RT	95 ft•lbs
(Charpy V Notch) -320°F	36 ft•lbs
DeLong Ferrite Number	10

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

347

AWS ER347

Stabilized with columbium to help prevent intergranular corrosion. Better corrosion resistance than Type 308. Used for welding Types 347 and 321 steels. Good corrosion resistance in applications up to 1400°F.

Typical Deposit Analysis %

Carbon	0.035
Chromium	20.00
Nickel.....	10.00
Molybdenum.....	0.20
Manganese	1.30
Silicon	0.40
Iron	Balance

Typical Weld Metal Properties

Tensile Strength (psi)	90,000 (621 MPa)
Yield Strength (psi)	59,000 (407 MPa)
Elongation in 2"	42%
Impact Resistance RT	112 ft•lbs
(Charpy V Notch) -320°F	34 ft•lbs
DeLong Ferrite Number	9

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

312 AC-DC

AWS ER312-16

Welding Type 312 base metals. Excellent for dissimilar metal joining due to high ferrite potentials.

Typical Deposit Analysis %

Carbon	0.07
Manganese	0.80
Silicon	0.40
Chromium	28.50
Nickel.....	9.10
Iron	Balance

Typical Properties and Ferrite Number of Weld Deposit as Welded

Tensile Strength (psi)	115,000 (793 MPa)
Yield Strength (psi)	95,000 (655 MPa)
Elongation in 2"	25%
DeLong Ferrite Number	45

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-6)

Cut lengths only

GOLDCOR™ STAINLESS STEEL GAS-SHIELDED METAL-CORED WIRES

GoldCOR™ 308LSi

FLAT & HORIZONTAL

AWS EC308LSi

An austenitic stainless steel wire used to join 301, 302, 304, 304L and 308 stainless steels.

Typical Deposit Analysis %

Carbon	0.023
Chromium	20.50
Nickel	10.10
Molybdenum	0.25
Manganese	1.50
Silicon	0.85
Phosphorus	0.02
Sulfur	0.01
Copper	0.2

Typical Weld Metal Properties*

DeLong Ferrite	10-18
Schaeffler Number Range	7-15
WRC Number Range (1992)	8-19
98%Ar/2%O ₂ or 95%Ar/5%CO ₂	

Diameters .045"

Approvals and conformance:

AWS Spec A5.9,
ASME SFA5.9 (F-6, A-8)

GoldCOR™ 309LSi

FLAT & HORIZONTAL

AWS EC309LSi

An austenitic stainless steel wire used to join similar 309L alloys or join 300 series stainless steel to carbon or low alloys steels.

Typical Deposit Analysis %

Carbon	0.025
Chromium	23.90
Nickel	13.10
Molybdenum	0.25
Manganese	1.50
Silicon	0.85
Phosphorus	0.02
Sulfur	0.01
Copper	0.20

Typical Weld Metal Properties*

DeLong Ferrite	13-20
Schaeffler Number Range	11-17
WRC Number Range (1992)	11-19
98%Ar/2%O ₂ or 95%Ar/5%CO ₂	

Diameters .045", 1/16"

Approvals and conformance:

AWS Spec A5.9, ASME
SFA5.9 (F-6, A-8)

GoldCOR™ 316LSi

FLAT & HORIZONTAL

AWS EC316LSi

An austenitic stainless steel wire used to join 316 and 316L stainless steels.

Typical Deposit Analysis %

Carbon	0.02
Chromium	19.10
Nickel	12.40
Molybdenum	2.50
Manganese	1.50
Silicon	0.85
Phosphorus	0.02
Sulfur	0.01
Copper	0.20

Typical Weld Metal Properties*

DeLong Ferrite	4-10
Schaeffler Number Range	4-10
WRC Number Range (1992)	4-10
98%Ar/2%O ₂ or 95%Ar/5%CO ₂	

Diameters .045"

Approvals and conformance:

AWS Spec A5.9, ASME SFA5.9 (F-6, A-8)

Stainless Steel Wires

Comparative Index of Stainless Steel Solid Wires

AWS Class	Hobart	ESAB	Harris Welco	Lincoln	National Standard	Sandvik	Techalloy
ER308 & ER308L	308/308L	Arcaloy ER308L	ER308L	Blue Max S308/308L	308L	Techalloy 308L	
ER308 & ER308H	308/308H	Arcaloy ER308H	ER308	—	308		Techalloy 308
ER308LSi	308L HiSil	Arcaloy ER308LSi	ER308LSi	Blue Max MIG 308LSi	308L Hi Sil	19.9LSi	Techalloy 308L HS
ER309 & ER309L	309/309L	Arcaloy ER309L	ER309L	Blue Max S309/309L	309L	24.13.L	Techalloy 309L
ER309H	309 (H)	—	ER309	—	309		Techalloy 309
ER309LSi	309L HiSil	Arcaloy ER309LSi	ER309LSi	Blue Max MIG 309LSi	309L Hi Sil	24.13.LSi	Techalloy 309L HS
ER316 & ER316L	316/316L	Arcaloy ER316L	ER316L	Blue Max S316/316L	316L		Techalloy 316L
ER316LSi	316L HiSil	Arcaloy ER316LSi	ER316LSi	Blue Max MIG 316LSi	316L Hi Sil	19.12.3.NDSi	Techalloy 316L HS
ER347	347	Arcaloy ER347	ER347	—	347		Techalloy 347
ER410	410	Arcaloy ER410	ER410	—	410		Techalloy 410

Typical Parameters for Short-Circuiting Welding with Bare Stainless Wires

Wire Diameter	Amperes DCEP	Voltage	Electrical Stick-Out	90% He — 7-1/2% Ar — 2-1/2% CO ₂ Flow Rate
.030"	50–150	14–20	3/8"–1/2"	25
.035"	60–200	14–22	3/8"–1/2"	25
.045"	75–225	15–23	3/8"–1/2"	25
1/16"	100–250	16–23	3/8"–1/2"	25

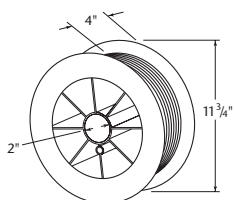
Typical Parameters for Spray Transfer Welding with Bare Stainless Wires

Wire Diameter	Amperes DCEP	Voltage	Electrical Stick-Out	Ar + 2% O ₂ Flow Rate
.030"	130–200	23–27	3/8"–1/2"	35
.035"	150–225	23–26	1/2"–3/4"	35
.045"	200–325	24–28	1/2"–3/4"	35
1/16"	300–350	24–27	1/2"–3/4"	35

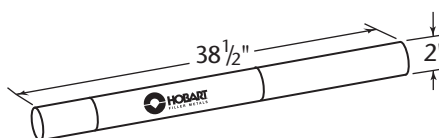
Recommended Operating Parameters

Diameter Electric Stick-Out Pos.	Arc Voltage (volts)	Current DCEP (+) (amps)	Approximate Wire Feed Speed (in/min)	Deposition Rates (lbs/hr)
.045" (1.2 mm)	23	140	260	5.5
3/4" – 1"	26	190	390	9.0
(19 mm)	33	300	490	11.6
Flat and Horizontal				
1/16" (1.6 mm)	26	180	152	6.0
3/4" – 1"	29	250	250	11.0
(19 – 25.4 mm)	32	390	442	18.0
Flat and Horizontal				

Packaging Options



30 lb Plastic Spool



10 lb Tube (Cut Lengths)

Hardfacing Stick Electrodes

AWS SECTION

AWS (A5.15) Cast Iron Electrode Chemical Composition of Weld Metal Deposit, %

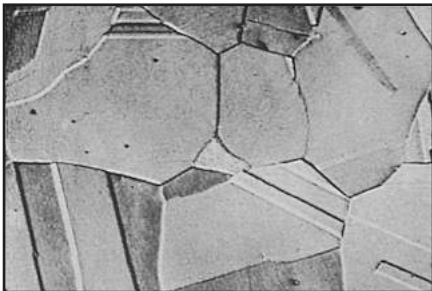
AWS Class	Carbon C	Manganese Mn	Silicon Si	Sulfur S	Iron Fe	Nickel ^a Ni	Copper ^b Cu	Aluminum Al
ENi-Ci	2.0 Max.	2.5 Max.	4.0 Max.	0.3 Max.	8.0 Max.	85 Min.	2.5 Max.	1.0 Max.
ENiFe-Ci	2.0 Max.	2.5 Max.	4.0 Max.	0.3 Max.	Balance	45–60	2.5 Max.	1.0 Max.

Note: 1.0 Max. of all other elements ^a Nickel plus incidental cobalt ^b Copper plus incidental silver

AWS (A5.13) Hardfacing Electrode Chemical Composition of Weld Metal Deposit, %

AWS Class	Carbon C	Manganese Mn	Cobalt Co	Tungsten W	Nickel Ni	Chromium Cr	Molybdenum Mo	Iron Fe	Vanadium V	Silicon Si	Total Other Elements
EFe5-B	0.5–0.9	0.60 Max.	—	1.0–2.5	—	3.0–5.0	5.0–9.5	Balance	3.0–5.0	5.0–9.5	1.0 Max.

Hardfacing Stick Electrode Alloy Classification



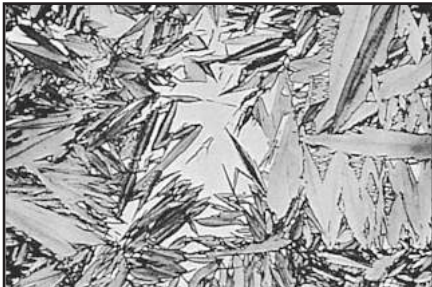
Photomicrograph of austenite.

Austenitic Alloys

Austenitic alloys are extremely tough, ductile and workhardenable. They offer excellent impact resistance and fair abrasion resistance (which improves as it work-hardens). These alloys will normally work-harden to a surface hardness up to 50 HRC and still retain their good impact resistance.

Hobart Austenitic Products

Hardalloy 118
Chrome-Mang



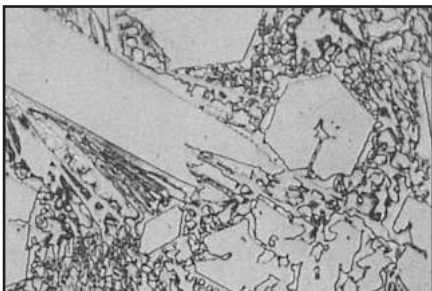
Photomicrograph of martensite.

Martensitic Alloys

Martensite is formed in steels by rapid cooling rates. Most of the hardfacing alloys are air hardenable and heat treatable. They provide a good balance of impact and abrasion resistance. Martensitic alloys also have relatively high compression strength and excellent metal-to-metal wear resistance.

Hobart Martensitic Products

Hardalloy 32
Hardalloy M-932
Hardalloy 58
Hardalloy 61



Photomicrograph of large carbides in a carbide eutectic matrix.

Carbide Alloys

Carbide alloys are very much like asphalt. There are carbides (gravel) and matrix (tar). The carbides are what give the excellent abrasion resistance while the matrix (tar) holds the carbides in place and offers some impact resistance. Carbides are extremely hard and brittle. They cannot handle impact. The more carbides there are the higher the abrasion resistance but the lower the impact resistance.

Hobart Carbide Products

Hardalloy 148
Hardalloy 40 TiC
Hardalloy 140
Hardalloy 155

Hardfacing Stick Electrodes

Hardfacing Stick Electrode Product Line

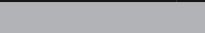
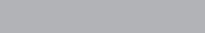
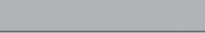
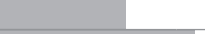
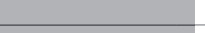
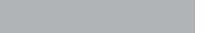
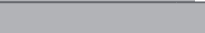
Build-Up

Restoring worn parts to their original dimensions

	Hobart Product	Description	Characteristics	
			Manganese	Carbon
	Chrome-Mang	Premium alloy for use on carbon and manganese steels.	•	•
	Hardalloy 118	For build-up & joining of manganese steels only.	•	o
	Hardalloy 32	Excellent build-up and overlay alloy for carbon steels.	o	•
	Hardalloy M-932	Harder than Hardalloy 32 and still machinable.	o	•

Overlay

Providing additional resistance to wear

Application	Hobart Product	Description	Characteristics	
			Hardness (Rockwell)	
Metal to Metal	Hardalloy 32	Excellent build-up and overall alloy for carbon steels.		
	Hardalloy M-932	Harder than Hardalloy 32 and still machinable.		
	Hardalloy 58	Very hard steel deposit for overlay only.		
	Hardalloy 61	Similar to an M2 type tool steel in composition.		
			0	20 40 60
Impact	Hobart Product	Description	Manganese	
			Carbon	
Impact	Chrome-Mang	Premium alloy for use on carbon and manganese steels.	•	•
	Hardalloy 118	For build-up & joining of manganese steels only.	•	o
Abrasion	Hobart Product	Description	Abrasion Resistance (Carbon Content %)	
Abrasion	Hardalloy 148	For abrasion and impact resistance.		
	Hardalloy 140	For heavy abrasion and moderate impact.		
	Hardalloy 40TiC	Better abrasion than Hardalloy 140 with titanium carbides.		
	Hardalloy 155	For extreme abrasion with minimal impact.		
			0	2 4 6

• Compatible o incompatible

Special Alloys

	Hobart Product	Description
Cast Iron	Cast-Alloy	Nickel electrode for low stress applications and maximum machinability.
	Cast-Alloy 60	Stronger and more ductile than Cast-Alloy with better hot cracking resistance.
Maintenance	GP	Recommended for joining dissimilar metals and hard-to-weld steels.

Hardfacing Stick Electrodes

Hardalloy® 118

Hardalloy® 118 deposit is a work hardening austenitic manganese steel alloy. It is designed for the build-up and joining of austenitic manganese steels only. Provides a good wear resistance under heavy impact conditions. Weld deposits are extremely tough, and work hardens rapidly.

Typical Applications

- crusher jaws & cones
- crusher rolls
- dredge pump casings, impellers, & side plates
- gyratory crusher mantles & cones
- hammer mill hammers
- impactor crusher bars
- manganese bucket teeth
- manganese steel railroad crossovers & frogs
- sizing screens

Typical Deposit Analysis %

Carbon	0.80
Manganese	16.50
Silicon	0.50
Chromium	5.00
Nickel.....	0.30
Iron	Balance

Typical Properties

Tensile Strength (psi)	127,000 (876 MPa)
Yield Strength (psi)	78,000 (538 MPa)
Elongation in 2"	50%
Machinability	Difficult
Hardness:	
As Deposited	18-22 Rc
Work Hardened	50-55 Rc
Flame cutting is difficult	
Nonmagnetic	

Optimum Current

Diameter	Amps
1/8"	120
5/32"	180
3/16"	230
1/4"	280
Polarity: DCEP Preferred or AC	

Chrome-Mang™

Hardalloy® Chrome-Mang deposit is a premium work hardening chromium-manganese austenitic stainless steel alloy. It can be used for the build-up and joining of manganese, as well as carbon and low alloy steels. It has higher toughness than conventional manganese steel deposits. Crack resistance is excellent.

Typical Applications

- crusher jaws & cones
- hammer mill hammers
- hydroelectric turbines
- impactor crusher bars
- similar to those for Hardalloy® 118, especially where the base metal is questionable or when contamination may be an issue
- sizing screens

Typical Deposit Analysis %

Carbon	0.40
Manganese	14.50
Silicon	0.60
Chromium	14.00
Nickel.....	1.00
Molybdenum.....	1.50
Vanadium.....	0.50
Iron	Balance

Typical Properties

Tensile Strength (psi)	130,000 (897 MPa)
Yield Strength (psi)	94,000 (648 MPa)
Elongation in 2"	40%
Machinability	Difficult
Hardness:	
As Deposited	18-22 Rc
Work Hardened	50-55 Rc
Cannot be flame cut	
Nonmagnetic	

Optimum Current

Diameter	Amps
1/8"	150
5/32"	200
3/16"	250
Polarity: DCEP Preferred or AC	

Hardalloy® 32

Hardalloy® 32 deposit is a heat treatable alloy steel suited for the build-up of carbon and low alloy steels only. The weld metal is sound, and the good compressive strength makes it an excellent base for hardfacing. It has excellent resistance to cracking and checking in heavy thicknesses.

Typical Applications

- bucket teeth & lips
- coupling boxes
- crane wheels
- dragline buckets & chain
- dredge ladder rolls
- gear teeth
- grizzly bars & fingers
- kiln trunnions
- mine car wheels
- steel shafts
- tractor idlers & rollers
- wobblers ends

Typical Deposit Analysis %

Carbon	0.18
Manganese	0.90
Silicon	0.60
Chromium	0.70
Molybdenum.....	0.30
Iron	Balance

Typical Properties

Machinability: Excellent	
Typical Hardness, Rc	
No. of Layers	1020 Steel
1-2	17-20
3-8	25-30
Can be flame cut	
Deposit is strongly magnetic	
Deposits is heat treatable and forgeable	

Optimum Current

Diameter	Amps
1/8"	140
5/32"	180
3/16"	220
1/4"	300
Polarity: DCEP Preferred or AC	

Hardfacing Stick Electrodes

Hardalloy® 58

Hardalloy® 58 deposit is a martensitic alloy for hard, tough overlays on carbon and low alloy steel parts only. The deposit is sound with a good combination of impact and abrasion resistance. Proper preheat is required for crack-free deposits.

Typical Applications

- coupling boxes
- dragline chain
- dredge ladder rolls
- kiln trunnions
- mill guides
- sliding metal parts
- wobbler ends

Typical Deposit Analysis %

Carbon	0.60
Manganese	1.20
Silicon	0.70
Chromium	5.50
Molybdenum.....	0.50
Iron	Balance

Typical Properties

Machinability: Grinding Only

Typical Hardness, Rc

No. of Layers	1020 Steel
1	45-55
2	55-60

Flame cutting is difficult

Deposit is magnetic

Deposit is heat treatable and forgeable

Optimum Current

Diameter	Amps
1/8"	110
5/32"	160
3/16"	210
Polarity: DCEP Preferred or AC	

Hardalloy® 140

Hardalloy® 140 deposits a high chromium carbide alloy steel. It can be used to overlay surfaces subjected to high abrasion coupled with some impact. It maintains its wear resistance to a temperature of 1200°F and offers some corrosion resistance. Hardalloy 140 is designed for carbon, low alloy or austenitic manganese base metals or a weld metal base of Hardalloy 32, Hardalloy 118, or Chrome-Mang™.

Typical Applications

- ammonia knives
- augers
- bucket teeth & lips
- bulldozer blades
- cement chutes
- crusher jaws & cones
- crusher rolls
- cultivator chisels & sweeps
- dredge cutter heads & teeth
- dredge pump side plates
- grizzly bars & fingers
- hammer mill hammers
- impactor crusher bars
- manganese pump sheels
- mill guides
- muller tires
- pipeline bBall joints
- plow shares
- scraper blades
- screw conveyers
- sheepfoot tampers
- sizing screens

Typical Deposit Analysis %

Carbon	3.00
Manganese	0.40
Silicon	2.00
Chromium	30.00
Molybdenum.....	0.70
Iron	Balance

Typical Properties

Machinability: Grinding only

Typical Hardness, Rc

No. of Layers	1020 Steel	12-14% Mn Steel
1	53	50
2	57	55
3	54	56

Cannot be flame cut

Deposit will relief-check crack

Deposit maintains hot hardness to 1200°F

Optimum Current

Diameter	Amps
1/8"	120
5/32"	155
3/16"	190
Polarity: DCEP Preferred or AC	

Hardalloy® 155

Hardalloy® 155 deposits an extra high chromium carbide alloy steel intended for overlay on surfaces subjected to extremely severe abrasion. It maintains its hot hardness to 1250°F and has an excellent edge building capability. Hardalloy 155 is designed for overlay on carbon, low alloy, or manganese steel base metals or over a welded build-up base of Hardalloy 32, 118, or Chrome-Mang.

Typical Applications

- ammonia knives
- augers
- bucket lips & teeth
- bulldozer blades
- cement chutes
- coal feeder screws
- coke chutes
- coke pusher shoes
- coal pulverizer hammers
- conveyor screws
- crusher jaws & cones
- crusher rolls
- cultivator chisels & sweeps
- dredge cutter heads & teeth
- dredge pump inlet nozzle & side plates
- fan blades
- gizzly bars & fingers
- manganese pump shells
- muller tires
- ore/coal chutes
- paving agitator screws
- pipeline ball joints
- pug mill paddles
- ripper shanks
- road rippers
- sheepfoot tampers, similar to those for Hardalloy 140 where additional abrasion resistance is required
- sizing screens
- subsoiler teeth

Typical Deposit Analysis %

Carbon	5.50
Manganese	0.40
Silicon	1.00
Chromium	32.00
Molybdenum.....	4.50
Iron	Balance

Typical Properties

Machinability: Grinding Only

Thickness: 3 layers max

Typical Hardness, 59-63 HRC

Cannot be flame cut

Deposit will relief-check crack readily

Deposit maintains hot hardness to 1250°F

Optimum Current

Diameter	Amps
1/8"	140
5/32"	150
3/16"	190
Polarity: DCEP Preferred or AC	

Hardfacing Stick Electrodes

Hardalloy® M-932

Hardalloy® M-932 deposit is a martensitic alloy with good toughness and abrasion resistance designed for all weldable steels other than austenitic stainless or manganese steels. Deposits are just within the machinable range.

Typical Applications

- crane wheels
- frogs & switch points
- low alloy steel railroad crossovers
- steel shafts
- tractor undercarriage idlers & rollers

Typical Deposit Analysis %

Carbon	0.13
Manganese	0.80
Silicon	0.40
Chromium	2.20
Molybdenum	1.00
Iron	Balance

Typical Properties

Tensile Strength (psi)	145,000 (1000 MPa)	
Hardness, as deposited, Rc		
No. of Layers	#132 Rail/1080 Steel*	1020 Steel
1	38	33
2	39	36
3	38	38

*700°F preheat and interpass temperature
Can be flame cut

Optimum Current

Diameter	Amps
5/32"	170
3/16"	220
1/4"	300
Polarity: DCEP Preferred or AC	

Hardalloy® 600

Hardalloy® 600 is designed for overlay of mild and low alloy steels, providing moderate abrasion and impact and excellent metal-to-metal wear resistance. Hardalloy has a smooth, steady arc that allows smooth operation for increased productivity. It has good resistance to abrasion and impact which makes it versatile for overlaying different alloys.

Typical Applications

- coupling boxes
- dragline chain
- dredge ladder rolls
- kiln trunnions
- mill guides
- sliding metal parts
- wobbler ends

Typical Deposit Analysis %

Carbon	0.60
Manganese	1.000
Silicon	0.40
Chromium	4.00
Iron	Balance

Typical Properties

Nonmachinable: Grinding only	
Typical Hardness, Rc	
No. of Layers	1020 Steel
1	45-55RC
2	55-60RC
3	55-60RC
4	55-60RC
Flame cutting can be difficult	
Deposit is magnetic	

Optimum Current

Diameter	Amps
1/8"	110
5/32"	160
3/16"	210
Polarity: DCEP Preferred or AC	

Hardalloy® 148

Hardalloy® 148 deposit is a high carbonchromium austenitic plus carbide alloy steel suited to overlay surfaces subjected to light abrasion accompanied by impact. It has excellent metal-to-metal frictional wear resistance, and the deposit retains hardness at temperatures up to 1200°F.

Typical Applications

- gyratory crusher mantles & cones
- ingot tongs
- mill guides
- pulleys
- slurry mixer paddles

Typical Deposit Analysis %

Carbon	1.80
Manganese	0.60
Silicon	1.80
Chromium	30.00
Nickel	3.00
Molybdenum	1.50
Iron	Balance

Typical Properties

Low stress abrasion: Excellent		
Machinability: Grinding only		
Typical Hardness, Rc		
No. of Layers	1020 Steel	12-14% Mn Steel
1	36RC	35RC
2	39RC	38RC
3	43RC	40RC

Cannot be flame cut
Little or no relief-check cracks
Maintains hot hardness to 1200°F

Optimum Current

Diameter	Amps
1/8"	120
5/32"	160
3/16"	175
Polarity: DCEP Preferred or AC	

Hardfacing Stick Electrodes

Hardalloy® 40TiC

(U.S. IPat. No. 4,584,459)

Hardalloy® 40 TiC deposit is a high alloy cast iron containing chromium and titanium as the important alloying ingredients added for increased wear life. It is suited for surfaces subjected to heavy abrasion and moderate impact. Hardalloy 40 TiC is an excellent overlay material on both carbon steels and austenitic manganese base metals.

Typical Applications

- ammonia knives
- augers
- bucket teeth & lips
- bulldozer end bits & blades
- cement chutes
- coke pusher shoes
- conveyor screws
- crusher rolls
- cultivator chisels & sweeps
- dredge pump inlet nozzle
- hammer mill hammers
- impactor crusher bars
- mill hammers
- plow shares
- scraper blades
- sheepfoot tampers
- subsoiler teeth

Typical Deposit Analysis %

Carbon	3.00
Manganese	1.10
Silicon	0.80
Chromium	8.20
Titanium	1.50
Iron	Balance

Typical Properties

Nonmachinable nor forgeable

Thickness: 2 layers min./3 layers max.

Typical Hardness, Rc

No. of Layers	1020 Steel	12-14% Mn Steel
1	39	39
2	45	45
3	50	50

Cannot be flame cut

Deposit is nonmagnetic

Some relief-check cracks

Maintains hot hardness to 1200°F

Optimum Current

Diameter	Amps
1/8"	120
5/32"	160
3/16"	200

Polarity: DCEP Preferred or AC

Hardalloy® 61

AWS EFe5-B (AWS A5.13)

Hardalloy® 61 deposit is a martensitic surfacing alloy similar to a high speed tool steel deposit. It can be used for metal-to-metal wear and abrasive wear up to 1000°F.

Typical Applications

- shear blades
- sliding metal parts
- trimming dies & punching dies

Typical Deposit Analysis %

Carbon	0.80
Manganese	0.50
Silicon	0.70
Chromium	4.00
Tungsten	1.10
Molybdenum	8.00
Vanadium	1.10
Iron	Balance

Typical Properties

Machinability: Grinding Only

Typical Hardness, Rc

No. of Layers	1020 Steel
1	53-55
2	57-63

Cannot be flame cut

Maintains hot hardness to 1000°F

Optimum Current

Diameter	Amps
1/8"	140
5/32"	180

Polarity: DCEP Preferred or AC

Hardfacing Stick Electrodes

SPECIAL ALLOY ELECTRODES — CAST IRON

Cast-Alloy™

AWS ENi-CI

The "straight" nickel electrode excels in low stress welding applications on light and medium weight castings and where maximum machinability is desired.

Typical Deposit Analysis %

Carbon	1.10
Manganese	0.40
Silicon	2.70
Copper	1.40
Iron	5.50
Nickel.....	89.00

Typical Properties as Welded

Tensile Strength (psi)	40,000 (276 MPa)
Yield Strength (psi)	38,000 (262 MPa)
Elongation in 2"	4.5%

Optimum Current

Diameter	Amps
3/32"	70
1/8"	95
5/32"	130
3/16"	190
Polarity: DCEP Preferred or AC	

Approvals and conformance:

- AWS Spec A5.15, ASME SFA5.15

Cast-Alloy™ 60

AWS ENiFe-CI

Because of its chemistry (approximately 50% iron and 50% nickel), the Cast-Alloy 60 can offer several advantages over conventional "straight" nickel electrodes. Among the benefits are stronger and more ductile deposits, better hot crack resistance, lower coefficient of thermal expansion, and lower cost.

Typical Deposit Analysis %

Carbon	1.30
Manganese	0.50
Silicon	0.60
Iron	48.00
Nickel.....	49.00

Typical Properties as Welded

Tensile Strength (psi)	70,000 (483 MPa)
Yield Strength (psi)	52,000 (359 MPa)
Elongation in 2"	9.5%

Optimum Current

Diameter	Amps
3/32"	70
1/8"	95
5/32"	130
Polarity: DCEP Preferred or AC	

Approvals and conformance:

- AWS Spec A5.15, ASME SFA5.15

— MAINTENANCE

GP

A special stainless alloy electrode balanced for maximum strength and crack resistance. Hobart GP is recommended for joining dissimilar metals and hard-to-weld steels. Deposits have over 20% ferrite and crack resistance equal to the armor welding electrodes. Hobart GP can be used for any high strength application, where wear, impact, heat and corrosion resistant properties are required. Excellent for highly alloyed steels and for repair of cracked dies. Excellent operation in all positions.

Typical Applications

- welding attachments to manganese castings
- welding grouser bars to grousers
- welding T-1 steel lips to manganese buckets

Typical Deposit Analysis %

Carbon	0.06
Manganese	1.00
Silicon	0.50
Chromium	26.50
Nickel.....	9.00
Iron	Balance

Typical Properties as Welded

Tensile Strength (psi)	129,000 (889 MPa)
Yield Strength (psi)	90,000 (621 MPa)
Elongation in 2"	27%
Machinability: Good	
Thickness: As required	
Cannot be flame cut	
Nonmagnetic	

Optimum Current

Diameter	Amps
3/32"	70
1/8"	105
5/32"	140
Polarity: DCEP Preferred or AC	

Hardfacing Stick Electrodes

TECHNICAL SECTION

Comparative Index of Hardfacing Electrodes

Hobart	Certanium	Lincoln	Stoody
Hardalloy 32	283 FC	BU	Build-Up LH
Hardalloy 40 TiC	222	ME, 44	21, 19, 35
Hardalloy 148	246	ABR	31, 33, 77
Hardalloy 58	281 FC, 246 FC	MM	Self-Hardening
Hardalloy 61	221	T&D	1102
Hardalloy 118	262 FC	Mangjet	Dynamang
Hardalloy 140	247, 248 FC	ME	31, 19, 21
Hardalloy 155	246 FC, 247 FC, 284 FC	—	Superchrome, 2134
Hardalloy M-932	222, NC, N70	—	Rail End 932
Chrome-Mang	106 FC, 282 FC	15CrMn	2110
Hardalloy 600	222, NC, N70	Warshield ABR	77

Comparative Index of Special Alloy Electrodes

Hobart	Certanium	Eutectic	Stoody	UTP	Weld Mold
Cast-Alloy	—	244, 22*40, 3099, 409	99	8	700, 702, 706, 704
Cast-Alloy 60	887	22*33N, 3055, 4055	55	83 FN, 85 FN, 86 FN	750, 765
GP	707 AC/DC	680	HD-20, Versalloy Plus, Versalloy GP	65, 653	881, 880, 8800

Hardfacing Electrodes Per Pound

Hobart Type	Diameter: Length:	1/8" (3.2mm) 14"	5/32" (4.0mm) 14"	3/16" (4.8mm) 14"	1/4" (6.4mm) 18"
Hardalloy 32		13	9	6	2
Hardalloy 40 TiC		14	9	6	—
Hardalloy 148		9	6	5	—
Hardalloy 58		14	9	6	—
Hardalloy 61		12	8	—	—
Hardalloy 118		12	8	5	2
Hardalloy 140		9	6	4	—
Hardalloy 155		8	5	4	—
Chrome-Mang		8	5	4	—
Hardalloy M-932		—	9	6	2
Hardalloy 600		14	10	7	—

Hardfacing Electrodes Per Pound

Hobart Type	Diameter: Length:	3/32" (2.4mm) 10"	1/8" (3.2mm) 14"	5/32" (4.0mm) 14"	3/16" (4.8mm) 14"
Cast-Alloy		35	13	9	6
Cast-Alloy 60		37	14	9	—
GP		34	13	9	—

For other product comparisons please go to our Hardfacing Product Cross-Reference Guide at www.hobartbrothers.com

TECHNICAL SECTION

Suggested Hobart Stick Electrode per Industry Application

Agriculture

Application Overlay	Hobart Electrode
Ammonia Knives	140, 155, 40 TiC
Cultivator Chisels & Sweeps	140, 155, 40 TiC
Mill Hammers	40 TiC
Plow Shares	140, 40 TiC
Ripper Shanks	155
Steel Shafts	M-932
Subsoiler Teeth	155, 40 TiC

Dredging Industry

Application Build Up	Overlay	Hobart Electrode
Dredge Bucket Lips	—	140, 155
Dredge Cutter Heads & Teeth	Chrome-Mang	140, 155
Dredge Pump Casings	118	—
Dredge Pump Inlet Nozzle	—	40 TiC, 155
Dredge Ladder Rolls	32	58
Dredge Pump Impellers	118	140
Dredge Pump Side Plates	118	140, 155
Pipeline Ball Joints	—	140, 155
Pump Shells (Manganese)	—	140, 155

Heavy Equipment/Mining Industries

Application Build-Up	Overlay	Hobart Electrode
Augers	—	140, 155, 40 TiC,
Bucket Teeth/Lips	32	140
Bulldozer Blades	—	140, 155, 40 TiC
Bulldozer End Bits	—	40 TiC
Crane Wheels	32	M-932
Dragline Buckets	32	—
Dragline Chain	32	58
Mine Car Wheels	32	—
Ore/Coal Chutes	—	155
Paving Agitator Screws	—	155
Power Shovel Bucket Teeth/Lips	32	140, 155
Road Rippers	—	155
Scraper Blades	—	140, 40 TiC
Sheepsfoot Tampers	—	140, 155, 40 TiC
Steel Shafts	32	M-932
Tractor Idlers/Rollers	32	M-932

Power Generation Industry

Application Overlay	Hobart Electrode
Coal Feeder Screws	155
Coal Pulverizer Hammers	155
Fan Blades	155
Hydroelectric Turbines	Chrome-Mang

Crushing/Quarry Industries

Application Build-Up	Overlay	Hobart Electrode
Bucket Lips	32	140, 155, 40 TiC
Bucket Teeth (Manganese Steel)	118, Chrome-Mang	140, 155, 40 TiC
Bulldozer End Bits	—	40 TiC
Cement Chutes	—	140, 155, 40 TiC
Conveyor Screws	—	155, 40 TiC
Crusher Jaws/Cones	118, Chrome-Mang	140, 155
Crusher Rolls	118, Chrome-Mang	140, 155, 40 TiC,
Gear Teeth	32	—
Gyratory Crusher Mantles/Cones	118, Chrome-Mang	—
Hammer Mill Hammers	118, Chrome-Mang	140, 40 TiC,
Impactor Crusher Bars	118, Chrome-Mang	140, 40 TiC
Kiln Trunnions	32	58
Muller Tires	—	140, 155, 40 TiC
Pug Mill Paddles	—	155
Sizing Screens	118, Chrome-Mang	140, 155
Steel Shafts	32	M-932

Iron & Steel Industry

Application Build-Up	Overlay	Hobart Electrode
Coke Chutes	—	155
Coke Pusher Shoes	—	155, 40 TiC
Coupling Boxes	32	58
Crane Wheels	—	M-932
Gear Teeth	32	—
Grizzly Bars & Fingers	Chrome-Mang	140, 155
Ingot Tongs	—	148
Mill Guides	—	58, 140
Pulleys	—	148
Pug Mill Paddles	—	155
Screw Conveyors	—	140, 155
Shear Blades	—	61
Steel Shafts	32	M-932
Wobbler Ends	32	58

Railroad Industry

Application Overlay	Hobart Electrode
Crossovers (Low Alloy Steel)	M-932, Chrome-Mang
Crossovers (Manganese Steel)	118, Chrome-Mang
Frogs (Carbon Steel)	M-932, Chrome-Mang
Frogs (Manganese Steel)	118, Chrome-Mang
Rail Ends (Low Alloy Steel)	M-932, Chrome-Mang
Switch Points (Low Alloy Steel)	M-932, Chrome-Mang

Hardfacing Stick Electrodes

TECHNICAL SECTION

Hardfacing Stick Electrode/Wire Equivalent

Stick Electrode	Open-Arc Wire	Gas-Shielded Wire	
		Flux-Cored	Metal-Cored
Hardalloy 118	Tube-Alloy 218-O	—	—
Chrome-Mang	Tube-Alloy AP-O	Vertiwear AP	—
Hardalloy 32	Tube-Alloy Build Up-O	—	Tube Alloy Build Up-G
—	ArmorWear™	—	—
Hardalloy 58	Tube-Alloy 258-O	Vertiwear 600	—
Hardalloy 140	Tube-Alloy 240-O	—	—
Hardalloy 155	Tube-Alloy 255-O	—	Tube-Alloy 255-G
Hardalloy M-932	Tube-Alloy 242-O	—	—
Hardalloy 148	—	—	—
Hardalloy 40TiC	—	—	—
Hardalloy 61	Tube-Alloy 258-O	—	Tube-Alloy 258-G
—	Tube-Alloy A43-O	—	—
—	Tube-Alloy A45-O	—	—
—	Tube-Alloy 218 TiC-O	—	—
—	Tube-Alloy 244 TiC-O	—	—

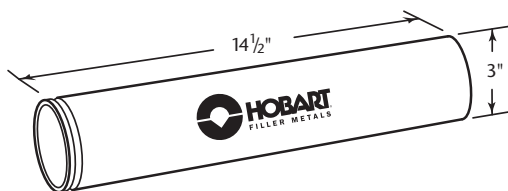
Hardfacing Electrode Pallet Information

Length	Hobart Type	PALLET WEIGHT (LB)		PALLET DIMENSIONS			Number of Units Per Pallet
		Net	Gross (est.)	Depth	Width	Height	
1/8"–14"	Hardalloy & Chrome-Mang Electrodes	1320	1420	38"	45"	39"	132 (10 lb Cans)
5/32"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/16"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
1/4"–18"		2450	2539	38"	40"	24"	49 (50 lb Cans)
3/32"–12"	Cast-Alloy Electrodes	1320	1420	38"	45"	39"	132 (10 lb Cans)
1/8"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
5/32"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/16"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/32"–10"	GP & Hardalloy	660	760	38"	45"	39"	132 (5 lb Cans)
1/8"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
5/32"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)
3/16"–14"		1320	1420	38"	45"	39"	132 (10 lb Cans)

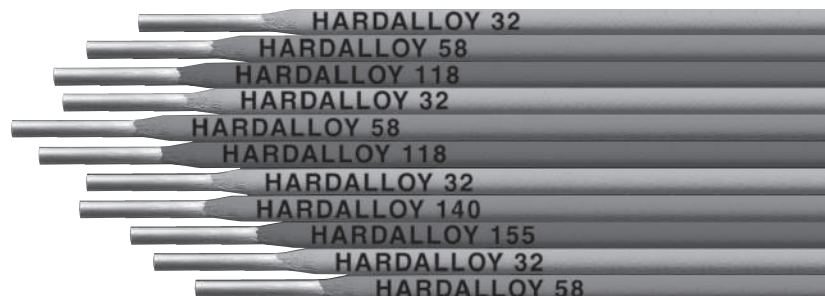
Packaging Options

All Hobart hardfacing electrodes are stamped with the product name

14-Inch Electrodes



10 lb Hermetically Sealed Can



Hardfacing Wires Product Line

Build-Up

Restoring worn parts to their original dimensions

	Open-Arc Tubular Wires	Gas-Shielded Tubular Wires	
	Tube-Alloy Build Up-O* Tube-Alloy AP-O* Tube-Alloy 218-O* Tube-Alloy 219-O Tube-Alloy 242-O	Tube-Alloy Build Up-G* VertiWear AP*	

Overlay

Providing additional resistance to wear

Application	Open-Arc Tubular Wires	Gas-Shielded Tubular Wires	Metal-Cored Submerged-Arc Tubular Wires
Metal to Metal	Tube-Alloy Build Up-O* Tube-Alloy 258-O* ArmorWear* Tube-Alloy 242-O	Tube-Alloy Build Up-G* Tube-Alloy 258-G* VertiWear 600 Tube-Alloy 260-G	Tube-Alloy BU-S Tube-Alloy 258-S Tube-Alloy 252-S Tube-Alloy 242-S Tube-Alloy 242-S Mod Tube-Alloy 8620-S Tube-Alloy 810-S Tube-Alloy 861-S Tube-Alloy 868-S Tube-Alloy 877-S Tube-Alloy 852-S Tube-Alloy 954-S Tube-Alloy 252-S Tube-Alloy A2JL-S Tube-Alloy 887-S Tube-Alloy A250-S Tube-Alloy A420M-S Tube-Alloy 865-S Mod
Impact	Tube-Alloy AP-O* Tube-Alloy 218-O* Tube-Alloy 219-O	VertiWear AP*	
Abrasion	Tube-Alloy 255-O* Tube-Alloy 240-O* Tube-Alloy 258TiC-O Tube-Alloy 244-O Tube-Alloy A43-O	Tube-Alloy 255-G*	

Special Alloys & Flux

	Open-Arc Tubular Wires	Flux	
	GP-O	MK-N	

* BOLD items are main line products

Hardfacing Wires

Tube-Alloy® Build Up-O

Tube-Alloy® Build Up-O deposit is a low alloy steel. It is designed for build-up on mild and low alloy steels only. The weld metals have good compressive strength and impact resistance, making it an excellent base for more abrasion-resistant alloys. The deposit has excellent resistance to cracking, even in multiple layers, and is within the machinable range.

Typical Applications

- bucket teeth & lips
- crane wheels
- dragline buckets
- dragline chain
- dredge ladder rolls
- gear teeth
- kiln trunnion
- mine car wheels
- spindles
- steel shafts
- wobbler ends

Typical Deposit Analysis %

Carbon	0.12
Manganese	2.80
Silicon	0.80
Chromium	1.20
Iron	Balance

Typical Properties

Abrasion Resistance	Fair	
Impact Resistance	Very Good	
Machinability	Excellent	
Hardness, as deposited, Rc		
No. of Layers	1020 Steel*	4130 Steel
1	30	36
2	28	30
3	25	26

Can be flame cut

Magnetic

Heat Treatable

Diameter and Polarity

.045"
1/16"
7/64"
DCEP

Tube-Alloy® 218-O

Tube-Alloy® 218-O is a work hardening austenitic manganese steel alloy. It can be used for build-up or overlay on austenitic manganese steel only. It can also be used for joining austenitic manganese steel to manganese steel. Deposits are extremely tough and work harden rapidly under high impact.

Typical Applications

- bucket teeth
- crusher jaws & cones
- dredge pump casings
- gyratory crusher mantles & cones
- hammer mill hammers
- impactor crusher bars
- manganese steel railroad crossovers & frogs

Typical Deposit Analysis %

Carbon	1.00
Manganese	15.00
Silicon	0.40
Chromium	3.10
Nickel	0.40
Iron	Balance

Typical Properties

Abrasion Resistance	Fair
Impact Resistance	Excellent
Tensile Strength (psi)	120,000 (XX MPa)
Yield Strength (psi)	80,000 (XX MPa)
Elongation in 2"	32%
Machinability	Difficult
Hardness:	
As Deposited	15-22 Rc
Work Hardened	50-55 Rc
Flame Cutting	Difficult
Nonmagnetic	

Diameter and Polarity

.045"
1/16"
7/64"

Tube-Alloy® AP-O

Tube-Alloy® AP-O deposit is a premium work hardening austenitic manganese steel alloy. It can be used for build-up or overlay on austenitic manganese steel, carbon steel and low alloy steel. It can also be used for joining austenitic manganese steel to manganese steel, carbon steel and low alloy steel. The weld metal has higher toughness than conventional manganese steel weld metal.

Typical Applications

- bucket teeth & lips
- crusher jaws & cones
- dragline buckets
- dredge cutter heads & teeth
- grizzly bars & fingers
- gyratory crusher mantles & cones
- hammer mill hammers
- hydroelectric turbines
- impactor crusher bars
- miller tires
- pulverizer hammers
- similar to those for Tube-Alloy® 218-O, especially where the base metal verification is questionable or where contamination may be an issue
- sizing screens

Typical Deposit Analysis %

Carbon	0.42
Manganese	16.50
Silicon	0.30
Chromium	13.00
Iron	Balance

Typical Properties

Abrasion Resistance	Fair
Impact Resistance	Excellent
Tensile Strength (psi)	124,000 (XX MPa)
Yield Strength (psi)	83,000 (XX MPa)
Elongation in 2"	40%
Machinability	Difficult
Hardness:	
As Deposited	18-24 Rc
Work Hardened	50-55 Rc
Cannot be flame cut	
Nonmagnetic	

Diameter and Polarity

1/16"
7/64"
DCEP

Tube-Alloy® 258-O

Tube-Alloy® 258-O deposit is a premium martensitic alloy steel of the hard, tough H-12 tool steel composition. It has excellent resistance to adhesive (metal-to-metal) wear. It is designed to surface mild and low alloy steel components subject to moderate abrasive wear and/or high temperature (up to 1000°F). Proper preheat is required for crackfree deposits.

Typical Applications

- coupling boxes
- dragline chain
- kiln trunnions
- mill guides
- spindles
- wobbler ends

Typical Deposit Analysis %

Carbon	0.45
Manganese	1.40
Silicon	0.80
Chromium	6.00
Molybdenum.....	1.50
Tungsten	1.50
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Good
Machinability	Grind only

Hardness, as deposited, Rc		
No. of Layers	1020 Steel*	4130 Steel
1	49	51
2	53	54
3	57	57

Flame cutting is difficult
Magnetic
Heat Treatable and Forgeable
Maintains Hot Hardness to 1000°F

Diameter and Polarity

.045"
1/16"
7/64"
DCEP

Tube-Alloy® 240-O

Tube-Alloy® 240-O deposit is a chromium carbide surfacing alloy. It can be used on components subject to severe abrasive wear and heavy impact. The weld metal has higher toughness than conventional chromium carbide due to fewer stress relief-check cracks.

Typical Applications

- ammonia knives
- augers
- bucket teeth & lips
- bulldozer end bits & blades
- conveyer screws
- crusher jaws & cones
- crusher rolls
- cultivator chisels & sweeps
- dragline buckets
- dredge pump impellers & side plates
- hammer mill hammers
- impactor crusher bars
- manganese pump shells
- mill guides
- muller tires
- pipeline ball joints
- pulverizer hammers
- scraper blades
- screw conveyors
- sheepfoot tampers
- sizing screens

Typical Deposit Analysis %

Carbon	3.20
Manganese	0.80
Silicon	1.90
Chromium	15.50
Iron	Balance

Typical Properties

Abrasion Resistance	Very Good
Impact Resistance	Fair
Machinability	Grinding only
Thickness	3-5 Layers Maximum

Hardness, as deposited, Rc		
No. of Layers	1020 Steel*	12-14% Manganese
1	40	35
2	48	42
3	52	50

Can be flame cut
Deposit will relief-check crack

Diameter and Polarity

.045"
1/16"
7/64"
DCEP

Tube-Alloy® 255-O

Tube-Alloy® 255-O deposit is a premium high chromium carbide surfacing alloy. It can be used on components subject to extremely severe abrasive wear and moderate impact. It can also be used where high temperature (up to 1250°F) wear resistance is required. The weld metals will stress relief-check crack. Can be run as submerged arc by using MK-N neutral flux.

Typical Applications

- ammonia knives
- augers
- bucket teeth & lips
- bulldozer blades
- bulldozer end bits & blades
- cement chutes
- coal feeder screws
- coal pulverizer hammers, rolls & table
- coke chutes
- coke pusher shoes
- conveyor screws
- dredge pump inlet nozzle & side plates
- fan blades
- grizzlybars & fingers
- gyratory crusher
- mantles & cones
- manganese pump shells
- muller tires
- ore & coal chutes
- pipeline ball joints
- pug mill paddles
- ripper shanks
- road rippers
- scraper blades
- screw conveyors
- sheepfoot tampers
- similar to those for Tube-Alloy® 240-O where additional abrasion resistance is required
- sizing screens
- subsoiler teeth

Typical Deposit Analysis %

Carbon	4.50
Manganese	0.90
Silicon	0.50
Chromium	26.50
Iron	Balance

Typical Properties

Abrasion Resistance	Excellent
Impact Resistance	Poor
Machinability	Grinding only
Thickness	3 Layers Maximum

Hardness, as deposited, Rc		
No. of Layers	1020 Steel*	12-14% Manganese
1	54	48
2	56	50
3	58	53

Cannot be flame cut
Deposit will relief-check crack readily
Maintains Hot Hardness to 1250°F

Diameter and Polarity

1/16"
7/64"
DCEP

Hardfacing Wires

Tube-Alloy® 242-O

Tube-Alloy® 242-O is a self-shielded, fluxcored wire that deposits a premium martensitic alloy steel. It has excellent resistance to adhesive (metal-to-metal) wear. The deposit has good resistance to abrasion and impact making it a versatile overlay alloy. It is designed for use as an overlay on carbon and low alloy steels or as a base of Tube-Alloy Build Up-O. With proper preheating, crackfree deposits can be obtained. Tube-Alloy 242-O should never be used for joining.

Typical Applications

- carbon steel rolls
- crane wheels
- dragline chain
- frogs & switch points
- idlers
- low alloy steel railroad crossovers and rail ends
- steel shafts
- tractor rollers

Typical Deposit Analysis %

Carbon	0.25
Manganese	1.30
Silicon	0.70
Chromium	4.00
Molybdenum	0.50
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Good
Machinable	
Hardness, as deposited, Rc	
No. of Layers 1020 Steel	
1	36
2	39
3	42
Can be flame cut	
Magnetic	

Diameter and Polarity

.045"
1/16"
7/64"
DCEP

Armorwear™

ArmorWear is a self-shielded, flux-cored wire that deposits a premium martensitic alloy steel of H-12 tool steel composition. It has excellent resistance to adhesive (metal-to-metal) wear. It also has good resistance to abrasion and impact, and maintains its hardness up to 1000°F. It is designed for use as an overlay on carbon and low alloy steels. Because of its high hardenability, proper preheat may be required for crack-free deposits, particularly on low alloy steels. ArmorWear is formulated to optimize performance with the small 110/220V type wire welding machines.

Typical Applications

- bucket lips and teeth
- cultivator chisels and sweeps
- plow shares, scraper blades
- shanks, knives, teeth
- kiln trunnions
- spindles
- pump components

Typical Deposit Analysis %

Carbon	0.40
Manganese	1.00
Silicon	0.40
Chromium	5.80
Molybdenum	1.50
Tungsten	1.40
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Good
Machinability	Grind only
Hardness, as deposited, Rc	
No. of Layers 1020 Steel	
1	47
2	49
3	53
Flame cutting is difficult	
Magnetic	
Heat Treatable and Forgeable	
Maintains Hot Hardness to 1000°F	

Diameter and Polarity

.035"
DCEN

Tube-Alloy® 219-O

Tube-Alloy® 219-O is a work hardening austenitic manganese steel alloy. The high carbon and manganese content allows for a fully austenitic first layer on carbon steel. Deposits are extremely tough and work harden rapidly under high impact. It can be used for most railroad track maintenance applications.

Typical Applications

- manganese steel railroad crossovers & frogs
- similar to 218-O, except that it is slightly harder in the "as deposited" condition, and work hardens quicker

Typical Deposit Analysis %

Carbon	1.00
Manganese	20.00
Silicon	0.60
Chromium	4.50
Iron	Balance

Typical Properties

Abrasion Resistance	Fair
Impact Resistance	Excellent
Tensile Strength (psi)	137,000 (XX MPa)
Yield Strength (psi)	91,000 (XX MPa)
Elongation in 2"	34%
Machinability	Difficult
Hardness:	
As Deposited	16-23 Rc
Work Hardened	50-55 Rc
Flame cutting is difficult	

Diameter and Polarity

1/16"
7/64"
DCEP

Tube-Alloy® 258TiC-O

Tube-Alloy® 218 TiC-O deposit is a martensitic alloy steel containing a high volume fraction of titanium carbides. It is particularly good for resisting high stress abrasive wear. The alloy has good hot hardness. Deposits can be applied crack-free with proper procedures.

Typical Applications

- paving agitator screws

Typical Deposit Analysis %

Carbon	2.10
Manganese	1.30
Silicon	1.80
Chromium	7.00
Molybdenum	1.60
Titanium	6.00
Iron	Balance

Typical Properties

Abrasion Resistance	Excellent
Impact Resistance	Good
Machinability	Grinding only

Hardness, as deposited, Rc

No. of Layers	1020 Steel
1	60
2	55
3-8	48

Cannot be flame cut

Magnetic

Maintains hot hardness to 1000°F

Diameter and Polarity

1/16"
7/64"
DCEP

Tube-Alloy® 244-O

Tube-Alloy® 244-O deposit is a medium alloy carbide steel. It is designed primarily for the automatic rebuilding of dredge pump shells. Deposits do stress relief-check crack.

Typical Applications

- dredge pump impellers & side plates
- pipeline ball joints
- pump shells

Typical Deposit Analysis %

Carbon	2.50
Manganese	1.60
Silicon	2.00
Chromium	9.00
Copper	0.50
Iron	Balance

Typical Properties

Abrasion Resistance	Very Good
Impact Resistance	Fair
Machinability	Very Difficult
Thickness	3-5 Layers Maximum

Hardness, as deposited, Rc

No. of Layers	1020 Steel	12-14% Manganese
1	34	24
2	37	33
3	40	38

Cannot be flame cut

Slightly Magnetic

Deposit will relief-check crack

Diameter and Polarity

7/64"
DCEP

Tube-Alloy® A43-O

Tube-Alloy® A43-O deposit is a premium high chromium-columbium carbide surfacing alloy. It can be used on components subject to extremely severe high and low stress abrasive wear and moderate impact. It can also be used where high temperature (up to 1250°F) wear resistance is required. The deposit will stress relief-check crack readily. Can be run as submerged arc by using MK-N neutral flux.

Typical Applications

- augers
- bucket lips & teeth
- coal feeder screws
- coal pulverizer rolls & table
- coke chutes
- coke pusher shoes
- conveyor screws
- dredge cutter heads & teeth
- dredge pump inlet nozzle & side plates
- fan blades
- grizzly bars & fingers
- muller tires
- paving agitator screws
- pipeline ball joints
- pug mill paddles
- scraper blades
- sheepfoot tampers
- sizing screws

Typical Deposit Analysis %

Carbon	5.50
Manganese	0.20
Silicon	1.00
Chromium	22.00
Columbium	6.50
Iron	Balance

Typical Properties

Abrasion Resistance	Excellent
Impact Resistance	Poor
Machinability	Grinding only
Thickness	3 Layers Maximum

Hardness, as deposited, Rc

No. of Layers	1020 Steel	12-14% Manganese
1	58	48
2-3	62	56

Cannot be flame cut

Diameter and Polarity

1/16"
7/64"
DCEP

Hardfacing Wires

VertiWear® 600

VertiWear® 600 deposits a multipurpose martensitic steel alloy. It can be used to surface mild and low alloy components subject to moderate abrasive wear and medium to high impact. Excellent operator appeal in all positions.

Typical Applications

- coupling boxes
- dragline chain
- dredge ladder rolls
- kiln trunnions
- mill guides
- sliding metal parts
- wobbler ends

Typical Deposit Analysis %

Carbon	0.40
Manganese	0.75
Silicon	0.60
Chromium	6.50
Molybdenum	1.00
Vanadium	0.05
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Very Good
Machinability	Good
Hardness, as deposited, Rc	
No. of Layers 1020 Steel	
1	52
2	56
3-8	57
Flame cutting is difficult	
Magnetic	

Diameter and Polarity

.045"
1/16"
DCEP
Gas-Shielded
75/25 (Ar/CO₂)
or 100% CO₂

Tube-Alloy® 255-G

Tube-Alloy® 255-G is a small-diameter, gas-shielded premium hardfacing wire that deposits an extremely wear-resistant chromium-carbide overlay. It is designed for overlay on carbon, low alloy, cast iron, and austenitic manganese base metals. It outlasts competitive wires which deposit martensitic deposits 9 to 1.

Typical Applications

- ammonia knives
- augers
- bucket teeth & lips
- bulldozer end bits and blades
- cement chutes
- coal feeder screws
- coal pulverizer hammers, rolls and table
- coke chutes
- coke pusher shoes
- conveyer screws
- crusher jaws and cones
- cultivator chisels and sweeps
- dragline buckets
- dredge cutter heads and teeth
- dredge pump inlet nozzle & side plates
- fan blades
- grizzly bars and fingers
- gyratory crusher mantles and cones
- manganese pump shells
- muller tires
- ore and coal chutes
- pipeline ball joints
- pug mill paddles
- ripper shanks
- road rippers
- scraper blades
- screw conveyors
- sheepfoot tampers
- sizing screens
- subsoiler teeth

Typical Deposit Analysis %

Carbon	5.30
Manganese	1.00
Silicon	0.40
Chromium	18.00
Iron	Balance

Typical Properties

Abrasion Resistance	Excellent
Impact Resistance	Poor
Machinability	Grinding is Difficult
Thickness	3 Layers Maximum
Hardness, as deposited, Rc	
No. of Layers 1020 Steel Manganese Steel	
1	58 47
2	61 51
3	65 54

Cannot be flame cut

Deposit will relief-check crack readily

Maintains hot hardness to 1250°F

Diameter and Polarity

.045"
DCEP
Gas-Shielded
98/2 (Ar/CO₂)
75/25 (Ar/CO₂)

VertiWear® AP

VertiWear® AP is a premium, work-hardening austenitic manganese steel alloy. This fluxcored, all-position wire can be used for buildup or overlay on austenitic manganese steel. It can also be used for joining austenitic manganese steel to manganese steel, carbon steel and low alloy steel. The deposit has excellent impact resistance.

Typical Applications

- bucket teeth and lips
- crusher jaws and cones
- dragline buckets
- dredge cutter heads and teeth
- grizzly bars and fingers
- gyratory crusher mantles and cones
- hammer mill hammers
- hydroelectric turbines
- impactor crusher bars
- muller tires
- pulverizer hammers
- sizing screens

Typical Deposit Analysis %

Carbon	0.45
Manganese	14.00
Silicon	0.50
Chromium	13.50
Nickel	0.50
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Excellent
Machinability	Fair
Hardness:	
Work Hardened	50-55 Rc
No. of Layers 1020 Steel	
1	24 Rc
2	20 Rc
3-8	18 Rc
Cannot be flame cut	

Diameter and Polarity

.045"
DCEP
Gas-Shielded
75/25 (Ar/CO₂)
or 100% CO₂

Tube-Alloy® Build Up-G

Tube-Alloy® Build Up-G is a gas-shielded, metal-cored wire designed for build-up on carbon and low alloy steels. The weld metals have good compressive strength and impact resistance, making them excellent bases for more abrasion-resistant alloys.

Typical Applications

- bucket teeth & lips
- crane wheels
- dragline buckets
- dragline chain
- dredge ladder rolls
- gear teeth
- kiln trunnions
- mine car wheels
- spindles
- steel shafts
- wobblers ends

Typical Deposit Analysis %

Carbon	0.26
Manganese	1.73
Silicon	0.32
Chromium	1.85
Iron	Balance

Typical Properties

Abrasion Resistance	Fair
Impact Resistance	Very Good
Machinability	Good
Hardness	25 Rc
Can be flame cut	
Magnetic	

Diameter and Polarity

.045"
1/16"
DCEP
Gas-Shielded
75/25 (Ar/CO₂)
or 100% CO₂

Tube-Alloy® 258-G

(Formerly known as HW-7)

Tube-Alloy® 258-G is a metal-cored, gas-shielded wire which deposits a sound hot work tool steel alloy of the AISI H-12 type. It is extremely resistant to thermal shock and erosion at working temperatures. The alloy has good dimensional stability and uniform heat-treatment response, making it ideally suited for fabrication, modification, and repair of dies and other tool steel parts.

Typical Applications

- clean out rings
- die holders
- dummy blocks
- extrusion dies
- forming dies
- forging dies
- gripper dies
- guide rolls
- header dies
- hot forming dies
- mandrels
- swaging dies

Typical Deposit Analysis %

Carbon	0.40
Manganese	1.00
Silicon	0.55
Chromium	5.00
Molybdenum	1.45
Tungsten	1.25
Vanadium	0.40
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Good
Nonmachinable in As-Welded Condition	Grinding only
Hardness, as deposited, RC	
No. of Layers	A36 Plate
1	52
2	53
3	57
Temp.	Typical Hardness
950°F	54

Flame Cutting Difficult

Good Resistance to softening at elevated temperatures

Heat treatable

Good Dimensional Stability

Diameter and Polarity

.045"
1/16"
DCEP
Gas-Shielded
75/25 (Ar/CO₂)
or 100% CO₂

Tube-Alloy® 260-G

Tube-Alloy® 260-G is a gas-shielded, metal-cored wire that deposits a martensitic alloy steel. It is designed for use as an overlay on carbon and low alloy steels. It has very good resistance to adhesive (metal-to-metal) wear and good resistance to abrasion and impact.

Typical Applications

- coupling boxes
- dragline chain
- kiln trunnions
- mill guides
- spindles
- wobblers ends

Typical Deposit Analysis %

Carbon	0.70
Manganese	2.00
Silicon	1.00
Chromium	8.00
Iron	Balance

Typical Properties

Abrasion Resistance	Good
Impact Resistance	Good
Machinability	Grinding only
Hardness:	
As Deposited	55-60 RC
Cannot be flame cut	
Magnetic	

Diameter and Polarity

.045"
1/16"
DCEP
Gas-Shielded
75/25 (Ar/CO₂)
or 100% CO₂

Hardfacing Wires

Tube-Alloy® BU-S

Tube-Alloy® BU-S deposit is a low alloy steel composition. It can be used for build-up on mild and low alloy steel components. The weld metal has good compressive strength, making it an excellent base for surfacing.

Typical Applications

- crane wheels
- dredge ladder rolls
- mine car wheels
- spindles
- table rolls
- tractor idlers & rollers

Typical Deposit Analysis %

Carbon	0.12
Manganese	1.80
Silicon	0.80
Chromium	0.70
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Abrasion Resistance	Fair	
Impact Resistance	Very Good	
Machinability	Excellent	
Thickness	As required	
Hardness, as deposited, Rc		
No. of Layers	1020 Steel	1045 Steel
1	20	35
2	26	34
3	30	31
Can be flame cut		
Strongly Magnetic		

Diameter and Polarity

3/32"
1/8"
5/32"
DCEP

Tube-Alloy® 8620-S

Tube-Alloy® 8620-S deposit is a low alloy steel composition. Its sound, tough deposit makes it an excellent choice for steel mill roll build-up.

Typical Applications

- continuous caster rolls
- table rolls

Typical Deposit Analysis %

Carbon	0.17
Manganese	0.80
Silicon	0.40
Chromium	0.50
Molybdenum.....	0.20
Nickel.....	0.40
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Abrasion Resistance	Fair	
Impact Resistance	Very Good	
Machinability	Excellent	
Thickness	As required	
Hardness, as deposited, Rc		
No. of Layers	1020 Steel	
1	12	
2	19	
3-8	21	
Can be flame cut		
Strongly Magnetic		

Diameter and Polarity

3/32"
1/8"
DCEP

Tube-Alloy® 861-S

Tube-Alloy® 861-S deposit is a premium chrome-molybdenum steel composition. It can be used as build-up or overlay for steel mill roll applications. It offers superior resistance to softening in service versus mild steel deposits.

Typical Applications

- continuous caster rolls
- straightener rolls
- table rolls

Typical Deposit Analysis %

Carbon	0.15
Manganese	0.90
Silicon	0.50
Chromium	1.70
Molybdenum.....	0.60
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Abrasion Resistance	Fair	
Impact Resistance	Fair	
Machinability	Very Good	
Thickness	As required	
Hardness, as deposited, Rc		
No. of Layers	1020 Steel	
1	21	
2	28	
3	30	
Cannot be flame cut		
Magnetic		

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® 877-S

Tube-Alloy® 877-S deposit is a low alloy steel composition. It is a sound, tough, build-up alloy designed for use on steel mill con-cast rolls. Mechanical properties are outstanding.

Typical Applications

- continuous caster rolls

Typical Deposit Analysis %

Carbon	0.10
Manganese	1.00
Silicon	0.60
Chromium	1.00
Molybdenum.....	0.40
Nickel.....	1.30
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Abrasion Resistance	Fair
Impact Resistance	Very Good
Machinability	Excellent
Thickness	As required
Hardness, as deposited, Rc	
No. of Layers	1020 Steel
1	22
2	23
3-8	24
Can be flame cut	
Strongly Magnetic	

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® 242-S MOD

Tube-Alloy® 242-S Mod deposit is a low alloy medium hardness martensitic steel. It can be used as a hardfacing overlay where good abrasion resistance and machinability are required.

Typical Applications

- crane wheels
- tractor idlers & rollers

Typical Deposit Analysis %

Carbon	0.14
Manganese	1.90
Silicon	0.80
Chromium	3.00
Molybdenum.....	0.80
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Abrasion Resistance	Good	
Impact Resistance	Good	
Machinability	Good	
Hardness, as deposited, Rc		
No. of Layers	1020 Steel	1045 Steel
1	29	44
2	38	45
3	39	40
Can be flame cut		
Strongly magnetic		

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® 258-S

Tube-Alloy® 258-S deposit is a premium martensitic steel alloy. It is a hard, tough H-12 tool steel composition. It can be used as an overlay on steel mill rolls where high hardness and abrasion resistance are more important than fire cracking.

Typical Applications

- spindles
- table rolls

Typical Deposit Analysis %

Carbon	0.34
Manganese	1.50
Silicon	0.50
Chromium	6.00
Molybdenum.....	1.50
Tungsten	1.40
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic	
Abrasion Resistance	Good	
Impact Resistance	Good	
Machinability	Difficult with carbide tools	
Thickness	As required	
Hardness, as deposited, Rc		
No. of Layers	1020 Steel	1045 Steel
1	46	52
2	48	53
3	53	54
Flame cutting is difficult		
Magnetic		

Diameter and Polarity

3/32"
1/8"
DCEP

Hardfacing Wires

Tube-Alloy® A2JL-S

Tube-Alloy® A2JL-S deposit is a modified stainless steel composition. It offers good resistance to metal-to-metal wear corrosion and thermal fatigue fire cracking.

Typical Applications

- continuous caster rolls

Typical Deposit Analysis %

Carbon	0.04
Manganese	0.80
Silicon	0.60
Chromium	13.50
Molybdenum.....	1.00
Nickel.....	2.00
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic
w/controlled ferrite	
Abrasion Resistance	Good
Impact Resistance	Good
Machinability	Good with carbide tools
Thickness	As required
Hardness, as deposited, Rc	
No. of Layers	1020 Steel
1-3	40
4-8	33
Cannot be flame cut	
Slightly Magnetic	

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® 887-S

Tube-Alloy® 887-S is a premium martensitic stainless steel alloy. It is a hard, tough composition that offers good resistance to metal-to-metal wear, corrosion and thermal fatigue.

Typical Applications

- continuous caster rolls

Typical Deposit Analysis %

Carbon	0.14
Manganese	0.88
Silicon	0.55
Chromium	12.50
Vanadium.....	0.23
Nickel.....	3.13
Molybdenum.....	1.50
Nb	0.18
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic
Abrasion Resistance	Good
Impact Resistance	Good
Machinability	Fair
Thickness	As required
Hardness, as deposited, Rc	
No. of Layers	1020 Steel
1	32
2	38
3	40
Cannot be flame cut	
Magnetic	

Diameter and Polarity

3/32"
1/8"
DCEP

Tube-Alloy® A250-S

Tube-Alloy® A250-S deposit is a modified 420 stainless steel composition. It offers good resistance to fire cracking and corrosion frequently encountered by steel mill rolls.

Typical Applications

- continuous caster rolls
- table rolls

Typical Deposit Analysis %

Carbon	0.19
Manganese	1.00
Silicon	0.50
Chromium	12.30
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic
Abrasion Resistance	Good
Impact Resistance	Good
Machinability	Good with carbide tools
Thickness	As required
Hardness, as deposited, Rc	
No. of Layers	1020 Steel
1	44
2	46
3	48
Cannot be flame cut	
Slightly Magnetic	

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® A420M-S

Tube-Alloy® A420M-S deposit is a modified high carbon 420 stainless steel composition. It offers higher hardness than standard 420 stainless steel deposits, resulting in longer roll life where thermal fatigue is not the prime consideration.

Typical Applications

- back-up rolls
- continuous caster rolls
- plate leveler rolls
- straightener rolls

Typical Deposit Analysis %

Carbon	0.24
Manganese	1.60
Silicon	0.70
Chromium	14.70
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic	
Abrasion Resistance	Very Good	
Impact Resistance	Fair	
Machinability	Fair with carbide tools	
Thickness	As required	

Hardness, as deposited, Rc		
No. of Layers	1020 Steel	1045 Steel
1	46	48
2	49	52
3-8	53	56

Cannot be flame cut
Slightly Magnetic

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® 865-S MOD

Tube-Alloy® 865-S Mod deposit is a modified stainless steel composition. It offers good resistance to metal-to-metal wear, corrosion and the ultimate resistance to thermal fatigue fire cracking frequently encountered by steel mill rolls.

Typical Applications

- continuous caster rolls

Typical Deposit Analysis %

Carbon	0.18
Manganese	1.10
Silicon	0.40
Chromium	13.50
Molybdenum	1.00
Nickel	2.70
Vanadium	0.20
Columbium	0.20
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic	
Abrasion Resistance	Good	
Impact Resistance	Good	
Machinability	Fair with carbide tools	
Thickness	As required	

Hardness, as deposited, Rc		
No. of Layers	1020 Steel	
1	45	
2	46	
3-8	48	

Cannot be flame cut
Magnetic

Diameter and Polarity

1/8"
DCEP

Tube-Alloy® 952-S

Tube-Alloy® 952-S is a premium modified high carbon martensitic stainless steel that produces higher hardnesses than standard 420 types. It offers excellent toughness for higher impact applications along with good resistance to abrasive wear. This alloy can be used in higher temperature applications (up to 1050°F). It should not be used where thermal fatigue fire cracking is the prime consideration. It is a high-deposition rate wire that produces sound, porosity-free, crack-free weld deposits.

Typical Applications

- straightener rolls
- plate leveler rolls
- edger rolls
- descale rolls
- back-up rolls
- aluminum caster rolls cores

Typical Deposit Analysis %

Carbon	0.27
Manganese	1.20
Silicon	0.60
Chromium	12.80
Tungsten	1.40
Molybdenum	1.80
Nickel	0.60
Vanadium	0.19
Niobium	0.18
Iron	Balance
HF-N/SWX HF-N Flux	

Typical Properties

Microstructure	Martensitic	
Abrasion Resistance	Good	
Impact Resistance	Good	
Machinability	Good with carbide tools	
Thickness	As required	

Hardness, as deposited, Rc		
No. of Layers	1020 Steel	1045 Steel
1	40	44
2	45	49
3	49	49

Flame cutting is difficult
Magnetic

Diameter and Polarity

3/32"
1/8"
DCEP

Hardfacing Wires

GP-O

Hobart GP-O is a multipurpose wire recommended for joining dissimilar metals and hard to weld steels. It can be used for any high-strength application where wear, impact, heat and corrosion resistant properties are required.

Typical Applications

- welding attachments to manganese castings
- welding grouser bars to grousers
- welding T-1 steel lips to manganese buckets

Typical Deposit Analysis %

Carbon	0.06
Manganese	1.00
Silicon	0.50
Chromium	26.50
Nickel.....	9.00
Iron	Balance

Typical Properties

Tensile Strength (psi)	120,000 (XX MPa)
Yield Strength (psi)	90,000 (XX MPa)
Elongation in 2"	27%
Machinability	Good
Thickness	As required
Cannot be flame cut	
Nonmagnetic	

Diameter and Polarity

1/16"
DCEP

HF-N & SWX HF-N

Benefits:

- provides excellent element recovery; suitable for use with the entire range of Hobart SAW hardfacing wires
- offers good wetting action to provide smooth, uniform, hardfacing weld beads
- provides excellent slag release, even at high currents
- can be used with an oscillating technique and twin-wire torch configuration for maximized bead width and productivity
- SWX HF-N is supplied in moisture-proof packaging that eliminates the need to re-dry unopened product

Typical Applications:

- SAW hardfacing
- steel mills
- continuous casting rolls

Flux Type:

Agglomerated fluoride-basic flux

Basicity Index (Boniszewski): 2.6

Alloy Transfer: None

Density: ~1.2 kg/L

Grain Size: 0.2 – 1.6 mm/ 10 – 65 mesh

Type of Current: DCEP

Primary Flux Composition:

Al ₂ O ₃ + MnO	~19%
CaO + MgO.....	~34%
SiO ₂ + TiO ₂	~18%
CaF ₂	~29%

Commonly Used With:

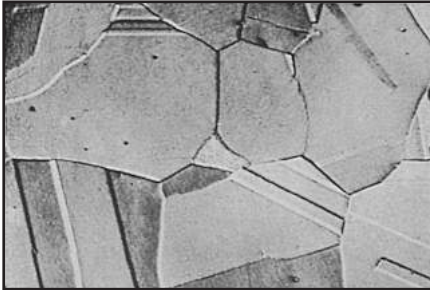
- Tube-Alloy® 242-S MOD
- Tube-Alloy® 810-S
- Tube-Alloy® 8620-S
- Tube-Alloy® 865-S MOD
- Tube-Alloy® 875-S
- Tube-Alloy® 952-S
- Tube-Alloy® A250-S
- Tube-Alloy® A2JL-S
- Tube-Alloy® BU-S

Packaging Available:

- SWX HF-N
- 55 lb. (25 kg) Bag
- SWX HF-N
- 55 lb. (25 kg) EAE Bag
- 2200 lb. (1000 kg) DoubleBag™

TECHNICAL SECTION

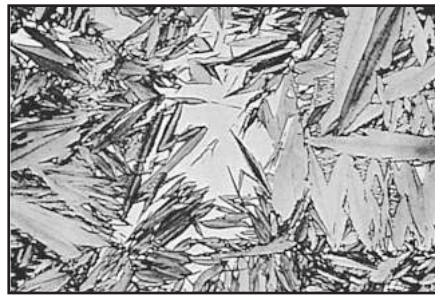
Hardfacing Wire Alloy Classification



Photomicrograph of austenite.

Austenitic Alloys

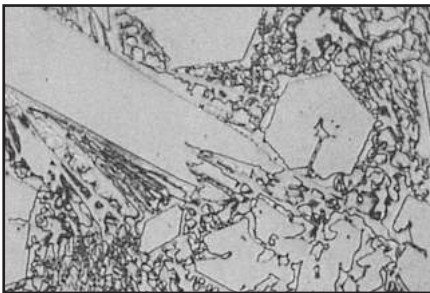
Austenitic alloys are extremely tough, ductile and workhardenable. They offer excellent impact resistance and fair abrasion resistance (which improves as it work-hardens). These alloys will normally work-harden to a surface hardness up to 50 HRC and still retain their good impact resistance.



Photomicrograph of martensite.

Martensitic Alloys

Martensite is formed in steels by rapid cooling rates. Most of the hardfacing alloys are air hardenable and heat treatable. They provide a good balance of impact and abrasion resistance. Martensitic alloys also have relatively high compression strength and excellent metal-to-metal wear resistance.



Photomicrograph of large carbides in a carbide eutectic matrix.

Carbide Alloys

Carbide alloys are very much like asphalt. There are carbides (gravel) and matrix (tar). The carbides are what give the excellent abrasion resistance while the matrix (tar) holds the carbides in place and offers some impact resistance. Carbides are extremely hard and brittle. They cannot handle impact. The more carbides there are the higher the abrasion resistance but the lower the impact resistance.

Hobart Austenitic Products

Tube-Alloy 218-O
Tube-Alloy 219-O
Tube-Alloy AP-O
VertiWear AP

Hobart Martensitic Products

Tube-Alloy Build Up-O
Tube-Alloy Build Up-G
Tube-Alloy 242-O
Tube-Alloy 258-O
Tube-Alloy 258-G
Tube-Alloy 260-G
VertiWear 600
ArmorWear

Hobart Carbide Products

Tube-Alloy 244-O
Tube-Alloy 258 TiC-O
Tube-Alloy 240-O
Tube-Alloy 255-O
Tube-Alloy 255-G
Tube-Alloy A43-O

Hardfacing Wire/Stick Electrode Equivalent

Open- Arc Wire	Gas-Shielded Wire		Stick Electrode
	Flux-Cored	Metal-Cored	
Tube-Alloy 218-O	—	—	Hardalloy 118
Tube-Alloy AP-O	VertiWear AP	—	Chrome-Mang
Tube-Alloy Build Up-O	—	Tube-Alloy Build Up-G	Hardalloy 32
Tube-Alloy 258-O/ArmorWear	—	Tube-Alloy 258-G	Hardalloy 58
	VertiWear 600	—	—
	Tube-Alloy 260-G	—	—
Tube-Alloy 240-O	—	—	Hardalloy 140
Tube-Alloy 255-O	—	Tube-Alloy 255-G	Hardalloy 155
Tube-Alloy 219-O	—	—	—
Tube-Alloy 242-O	—	—	Hardalloy M-932
—	—	—	Hardalloy 48
—	—	—	Hardalloy 40 TiC
Tube-Alloy 258 TiC-O	—	—	Hardalloy 65
Tube-Alloy A43-O	—	—	—
Tube-Alloy 244-O	—	—	—

Hardfacing Wires

TECHNICAL SECTION

General Operating Parameters of Tube-Alloy G Flux-Cored Gas-Shielded Surfacing Wires

.045" Diameter		1/16" Diameter	
Use 1/2" to 1" wire stickout DC (electrode positive)		Use 1" to 1-1/2" wire stickout DC (electrode positive)	
Amps	Volts	Amps	Volts
120-160	19-23	225-275	23-25
160-190	24-25	275-350	24-27
190-230	26-27	350-400	26-29

Typical Deposition Rates of Tube-Alloy G Flux-Cored Gas-Shielded Surfacing Wires

.045" Diameter		1/16" Diameter	
Amps	lb/hr	Amps	lb/hr
130	4	220	6
180	7	250	10
220	10	300	14

General Operating Parameters of Tube-Alloy O Flux-Cored Open-Arc Surfacing Wires

.045" Diameter		1/16" Diameter		7/64" Diameter	
Use 1/2" to 1" wire stickout DC (electrode positive)		Use 1" to 1-1/2" wire stickout DC (electrode positive)		Use 1-1/2" to 2" wire stickout DC (electrode positive)	
Amps	Volts	Amps	Volts	Amps	Volts
120-160	19-23	225-275	23-25	350-400	24-27
160-190	24-25	275-350	24-27	400-450	26-29
190-230	26-27	350-400	26-29	450-500	28-32
				With slight weave and 7 ipm travel speed average bead height will be 1/8" and width 3/8".	

Typical Deposition Rates of Tube-Alloy O Flux-Cored Open-Arc Surfacing Wires

.045" Diameter		1/16" Diameter		7/64" Diameter	
Amps	lb/hr	Amps	lb/hr	Amps	lb/hr
130	4	220	6	300	11
180	7	250	10	350	14
220	10	300	14	400	18

General Operating Parameters of Tube-Alloy O Flux-Cored Open-Arc Surfacing Wires

3/32" (2.4 mm)			1/8" (3.2 mm)			5/32" (4.0 mm)		
Use 1" to 1-1/4" (25-32 mm) wire stickout. Travel speed of 12" - 16" (305 - 406 mm) per minute.			Use 1-1/4" to 1-1/2" (32-38 mm) wire stickout. Travel speed of 14" - 18" (356-456 mm) per minute.			Use 1-1/4" to 1-1/2" (32-38 mm) wire stickout. Travel speed of 16" - 20" (406 - 508 mm) per minute.		
Amps	Volts	lb/hr	Amps	Volts	lb/hr	Amps	Volts	lb350/hr
350-500	25-29	14-22	400-450	26-28	16	450-500	28-30	18
			450-500	27-30	20	500-600	29-32	23
			500-550	29-32	24			

TECHNICAL SECTION

Comparative Index of Flux-Cored Open-Arc Hardfacing Wires

Hobart	Certanium	Eutectic	Lincoln	Stoody	Welding Alloys
Tube-Alloy AP-O	282 FC	3005-A, 3302	15CrMn	110	19/9/6-O, AP-O
Tube-Alloy Build Up-O	283 FC	3110, 3010-A	BU, 33	Build-Up	T-O
Tube-Alloy 218-O	—	3220-A	M	Dynamang, Nicro-Mang, Foundry Co-Mang	NM-O
Tube-Alloy 219-O	282 FC	—	—	120, Trackwear, Nicro-Mang Plus	—
Tube-Alloy 240-O	284 FC	4025-A	50	12, SA/53, 131, 133, 134	MC-O, HC333-O/G
Tube-Alloy 242-O	—	—	40-O	Super Build-Up, Rail End 932	P-O, R-O
Tube-Alloy 244-O	—	—	—	117	—
Tube-Alloy 255-O	247 FC	4601-A	60-O	100HC, 101HC, 101HD, 100XHP	HC2-O, HC3-O, HC333- O/G
Tube-Alloy 258-O/ ArmorWear	281 FC	4415	55, T&D	102, 965-O	R-O, W-O, L-O
Tube-Alloy 258 TiC-O	246 FC	—	—	600	TiC-O
Tube-Alloy A43-O	—	—	—	SA/Super-20	CN-O, CN2-O
GP-O	706 FC	690	—	Versalloy, GP-O	—

Comparative Index of Flux-Cored Gas-Shielded Hardfacing Wires

Hobart	Certanium	Lincoln	Hobart	Stoody
Tube-Alloy Build Up-G	283 FC	—	FabTuf 250	Build-Up AP-G
Tube-Alloy 255-G	—	—	—	—
Tube-Alloy 258-G	—	T&D	—	102
VertiWear 600	—	55	FabTuf 960	695AP-G
Tube-Alloy 260-G	—	55	FabTuf 960	695AP-G
VertiWear AP	—	15CrMn	—	110

For other product comparisons please go to our Hardfacing Product Cross-Reference Guide at www.hobartbrothers.com

Hardfacing Wires

TECHNICAL SECTION

Suggested Hobart Tubular Wire per Industry Application

Dredging Industry

Application Build-Up	Overlay	Hobart Wire
Dredge Bucket Lips	—	240-O, 255-O, 255-G
Dredge Cutter Heads & Teeth	AP-O, AP	255-O, 255-G, A43-O
Dredge Pump Casings	218-O	—
Dredge Pump Inlet Nozzle	—	255-O, 255-G, A43-O
Dredge Ladder Rolls	BU-O, BU-G, BU-S	—
Dredge Pump Impellers	—	244-O, 240-O
Dredge Pump Side Plates	—	244-O, 240-O, 255-O, 255-G, A43-O
Pipeline Ball Joints	—	244-O, 240-O, 255-O, 255-G, A43-O
Pump Shells (Carbon Steel)	—	244-O
Pump Shells (Manganese)	—	244-O, 240-O, 255-O, 255-G

Heavy Equipment/Mining Industries

Application Build-Up	Overlay	Hobart Wire
Augers	—	240-O, 255-O, 255-G, A43-O
Bucket Lips/Teeth	BU-O, BU-G	240-O, 255-O, 255-G, A43-O
Bulldozer Blades	—	240-O, 255-O, 255-G
Bulldozer End Bits	—	240-O, 255-O, 255-G
Crane Wheels	BU-O, BU-G, BU-S	242-O, 242-S
Dragline Buckets	BU-O, BU-G, AP-O, AP	240-O, 255-O, 255-G
Dragline Chain	BU-O, BU-G	242-O, 258-O, 258-G, VertiWear 600
Mine Car Wheels	BU-O, BU-G, BU-S	242-S, 252-S
Ore/Coal Chutes	—	255-O, 255-G
Paving Agitator Screws	—	258 TIC-O, A43-O
Power Shovel Bucket Lips/Teeth	BU-O, BU-G, AP-O, AP	240-O, 255-O, 255-G
Pug Mill Paddles	—	255-O, 255-G
Road Rippers	—	255-O, 255-G, A43-O
Scraper Blades	—	240-O, 255-O, 255-G, A43-O
Sheepsfoot Tampers	—	240-O, 255-O, 255-G, A43-O
Steel Shafts	BU-O, BU-G	242-O
Tractor Idlers/Rollers	—	BU-S, 242-S, 252-S

Crushing/Quarry Industries

Application Build-Up	Overlay	Hobart Wire
Bucket Lips	—	240-O, 255-O, 255-G, A43-O
Bucket Teeth (Manganese Steel)	218-O, AP-O, AP	240-O, 255-O, 255-G, A43-O
Bulldozer End Bits	—	240-O, 255-O, 255-G
Cement Chutes	—	255-O, 255-G
Conveyor Screws	—	240-O, 255-O, 255-G, A43-O
Crusher Jaws/Cones	218-O, AP-O, AP	240-O, 255-O, 255-G
Crusher Rolls	—	240-O
Gear Teeth	BU-O, BU-G	—
Gyratory Crusher Mantles/Cones	218-O, AP-O, AP	255-O, 255-G
Hammer Mill Hammers	218-O, AP-O, AP	240-O
Impactor Crusher Bars	218-O, AP-O, AP	240-O
Kiln Trunnions	BU-O, BU-G	258-O, 258-G, 258-S
Muller Tires	AP-O, AP	240-O, 255-O, 255-G, A43-O
Pug Mill Paddles	—	255-O, 255-G, A43-O
Pulverizer Hammers	AP-O, AP	240-O
Sizing Screens	AP-O, AP	240-O, 255-O, 255-G, A43-O
Steel Shafts	BU-O, BU-G	242-O

Iron & Steel Industry

Application Build-Up	Overlay	Hobart Wire
Blast Furnace Bell's Burden Area	—	A45-O
Coke Chutes	—	255-O, 255-G, A43-O
Coke Pusher Shoes	—	255-O, 255-G, A43-O
Con Caster Rolls	8620-S, 861-S	A250-S, 865-S Mod
Coupling Boxes	BU-O, BU-G	258-O, 258-G, VertiWear 600
Crane Wheels	BU-O, BU-G, BU-S	242-S
Gear Teeth	BU-O, BU-G	—
Grizzly Bars & Fingers	AP-O, AP	255-O, 255-G, A43-O
Mill Guides	—	258-O, 258-G, 240-O
Pug Mill Paddles	—	255-O, 255-G, A43-O
Screw Conveyors	—	240-O, 255-O, 255-G
Sheets in Blast Furnace Bell	—	—
Sinter Breaker Bars	—	—
Sinter Plant Parts	—	—
Spindles	BU-O, BU-G, BU-S	258-O, 258-G, 258-S
Steel Shafts	BU-O, BU-G	242-O
Straightener Rolls	861-S	A420M-S
Table Rolls	BU-S, 8620-S, 861-S	A250-S, 258-S
Wobbler Ends	BU-O, BU-G	258-O, 258-G

Agriculture

Application Overlay	Hobart Wire
Ammonia Knives	240-O, 255-O, 255-G
Cultivator Chisels & Sweeps	240-O, 255-O, 255-G
Mill Hammers	258 TIC-O
Ripper Shanks	255-O, 255-G
Steel Shafts	242-O
Subsoiler Teeth	255-O, 255-G

Railroad Industry

Application Overlay	Hobart Wire
Crossovers (Low Alloy Steel)	242-O
Crossovers (Manganese Steel)	218-O, 219-O, AP-O, AP
Frogs (Carbon Steel)	242-O
Frogs (Manganese Steel)	218-O, 219-O, AP-O, AP
Rail Ends (Low Alloy Steel)	242-O
Switch Points (Low Alloy Steel)	242-O

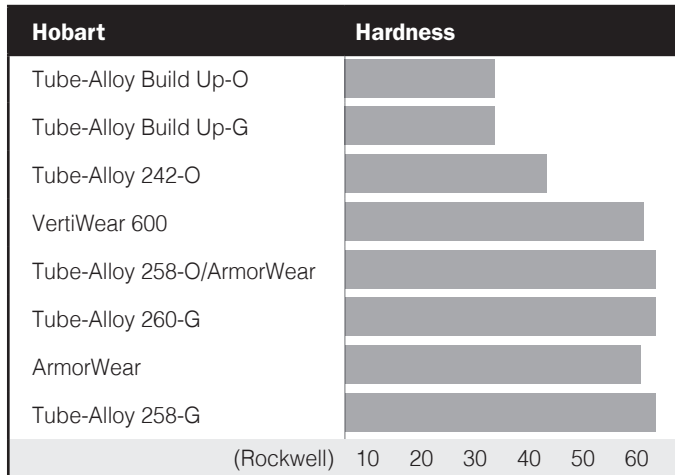
Power Generation Industry

Application Overlay	Hobart Wire
Coal Feeder Screws	255-O, 255-G, A43-O
Coal Pulverizer Hammers	255-O, 255-G
Coal Pulverizer Rolls	255-O, 255-G, A43-O
Coal Pulverizer Table	255-O, 255-G, A43-O
Fan Blades	255-O, 255-G, A43-O
Hydroelectric Turbines	AP-O, AP

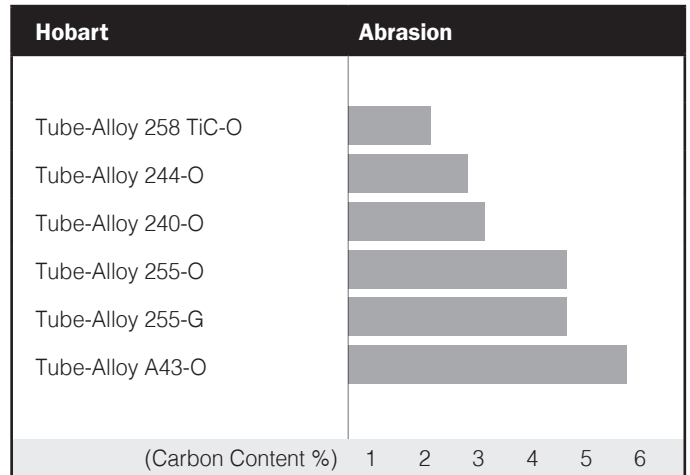
BU = Build-Up

TECHNICAL SECTION

Metal-to-Metal Wear Resistance



Abrasion Resistance

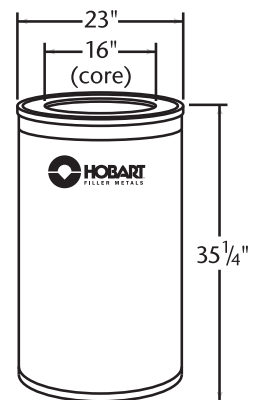
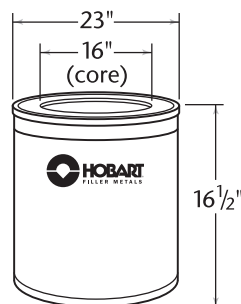
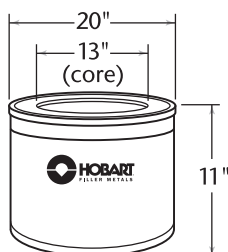
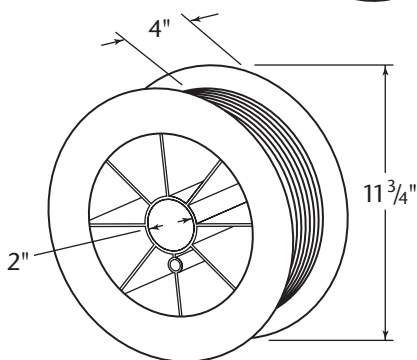
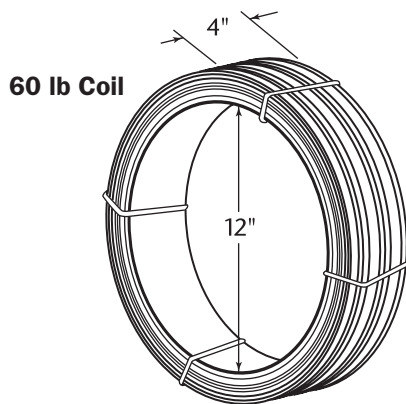


Metal-to-Metal Wear Resistance

Hobart Type	Pallet Weight (lb)		Pallet Dimensions			Number of Items Per Pallet
	Net	Gross (est)	Depth	Width	Height	
25 lb Spool	500	605	24"	24"	27"	20 (25 lb Spools)
60 lb Coil	1680	1743	36"	36"	35"	28 (60 lb Coils)

Note: Please contact factory for Auto-Pak pallet requirements

Packaging Options



Hardfacing Wires

TECHNICAL SECTION

Tensile Strength to Hardness Conversion Chart

Brinell Hardness No. (BHN)	Vickers Hardness No. (VHN)	Rockwell		Approximate Tensile Strength, 1000psi
		C (HRC)	B (HRB)	
898	—	—	—	440
857	—	—	—	420
817	—	—	—	401
780	1150	70	—	384
745	1050	68	—	368
712	960	66	—	352
682	885	64	—	337
653	820	62	—	324
627	765	60	—	311
601	717	58	—	298
578	675	57	—	287
555	633	55	120	276
534	598	53	119	266
514	567	52	119	256
495	540	50	117	247
477	515	49	117	238
461	494	47	116	229
444	472	46	115	220
429	454	45	115	212
415	437	44	114	204
401	420	42	113	196
388	404	41	112	189
375	389	40	112	182
363	375	38	110	176
352	363	37	110	170
341	350	36	109	165
331	339	35	109	160
321	327	34	108	155
311	316	33	108	150
302	305	32	107	146
293	296	31	106	142
285	287	30	105	138
277	279	29	104	134
269	270	28	104	131
262	263	26	103	128
255	256	25	102	125
248	248	24	102	122
241	241	23	100	119
235	235	22	99	116
229	229	21	98	113

Brinell Hardness No. (BHN)	Vickers Hardness No. (VHN)	Rockwell		Approximate Tensile Strength, 1000psi
		C (HRC)	B (HRB)	
223	223	20	97	110
217	217	18	96	107
212	212	17	96	104
207	207	16	95	101
202	202	15	94	99
197	197	13	93	97
192	192	12	92	95
187	187	10	91	93
183	183	9	90	91
179	179	8	89	89
174	174	7	88	87
170	170	6	87	85
166	166	4	86	83
163	163	3	85	82
159	159	2	84	80
156	156	1	83	78
153	153	—	82	76
149	149	—	81	75
146	146	—	80	74
143	143	—	79	72
140	140	—	78	71
137	137	—	77	70
134	134	—	76	68
131	131	—	74	66
128	128	—	73	65
126	126	—	72	64
124	124	—	71	63
121	121	—	70	62
118	118	—	69	61
116	116	—	68	60
114	114	—	67	59
112	112	—	66	58
109	109	—	65	56
107	107	—	64	56
105	105	—	62	54
103	103	—	61	53
101	101	—	60	52
99	99	—	59	51
97	97	—	57	50
95	95	—	56	49

TECHNICAL SECTION

Typical Composition and Suggested Preheat Temperatures for Several Steel Mill Roll Alloys

Alloy	C	Mn	Si	Cr	Ni	Mo	V	W	Suggested Preheat (°F)*
AISI 1020	.20	.45	.25						300-500
AISI 1030	.30	.75	.25						400-550
AISI 1040	.40	.75	.25						450-600
AISI 8620	.20	.80	.28	.50	.55	.20			500-700
AISI 4130	.30	.50	.28	.90		.20			600-700
AISI 4140	.40	.55	.28	.90		.20			650-700
AISI 4320	.20	.55	.28	.50	1.80	.25			600-700
AISI 4340	.40	.70	.28	.80	1.80	.25			650-700
H-12	.35	.30	1.00	5.00		1.50	.30	1.40	700-800
52100	1.00	.30	.28	1.40					700-800
CAST IRON†	3.25	.80	2.00						700-800
INTERNATIONAL	.40	.55	.30	1.10	1.40	.15			700-800
DIN 21 Cr.Mo.V.5-11	.20	.40	.45	1.35	.20	1.10	.30		700-800
DIN 1700G 13Cr.Mo 44	.15	.55	.25	.85		.45			600-800
EFC 21	.23	.40	.45	1.35		1.10	.30		700-800

† Gray or unalloyed ductile (nodular) iron.
 • Soak time varies with Roll Mass (usually 1/2 hour per inch of roll diameter once the surface has reached soak temperature).

Oven Storage and Reconditioning of Filler Metals

Welding electrodes, wire, and flux may be damaged by atmospheric moisture. The following table recommends proper storage conditions, and time and temperature for reconditioning electrodes that have absorbed excess moisture.

Notes for table: Pallets and unopened cartons of electrodes and wire should be stored away from exposure to water in the form of rain, snow, spray, or humidity. Only hermetically sealed cans are safe against these conditions. Damaged cartons permit entry of damp air which may be picked up by the product and lower its quality. Humidity below 50% should be avoided for 6010, 6011, 6012 and 6013 electrodes. At no times should these classes of electrodes be stored in an oven above 175°F.

The instruction, "Dry at Room Temperature" in the table signifies that the humidity should be below 70% and the temperature should be within the limits 40°F and 120°F.

When reconditioning flux, it is important that the complete mass be brought up to the temperature desired. If the flux is held in large containers, this can take a very long time – perhaps over 24 hours. In thin layers, reduction in moisture can be accomplished in as little as one hour, for example, in layers one to two inches thick. Fossil fuel burners (natural gas, oil, etc.) are not recommended.

CAUTION: Welding characteristics of agglomerated flux may suffer if temperature exceeds 650°F.

Item Designation	Storage of Contents of Open Cartons*	Reconditioning*
Sub-Arc Fluxes	250°F	600°F
Mild Steel Solid Wire	Dry at room temperature	Not recommended
Tubular Wires – Speed-Alloy®, Tube-Alloy®, In-Flux® 0, ChromaWeld, FabCO®, Fabshield®, FabCOR®, MEGAFIL	Dry at room temperature	Not recommended

Stick part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Pipemaster® Pro-60	E6010			3
S129132-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S129144-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S129151-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
Pipemaster® 60	E6010			3
S116532-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116532-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S116532-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S116544-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116544-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S116544-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S116551-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116551-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S116551-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S116558-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hobart® 610	E6010			3
S129432-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S129432-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S129432-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S129432-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S129444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S129444-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S129444-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S129444-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S129451-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S129451-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S129451-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S129451-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S129458-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Pipemaster® 70	E7010-P1			4
S116644-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116651-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116658-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Pipemaster® 80	E8010-P1			4
S116744-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116751-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116758-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Pipemaster® 90	E9010-G			4
S116844-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116851-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S116858-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Hobart® 335A	E6011			5
S112232-031	3/32"	2.4	50 Lb (22.7 Kg) Carton	
S112232-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S112232-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S112244-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S112244-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S112244-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S112244-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S112251-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S112251-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S112251-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S112251-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S112258-031	3/16"	4.8	50 Lb (22.7 Kg) Carton	
S112258-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hobart® 335C	E6011			5
S113532-031	3/32"	2.4	50 Lb (22.7 Kg) Carton	
S113544-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S113551-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
Hobart® 447A	E6013			5
S113832-031	3/32"	2.4	50 Lb (22.7 Kg) Carton	
S113832-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S113832-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S113844-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S113844-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S113844-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S113851-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S113851-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S113851-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S113858-031	3/16"	4.8	50 Lb (22.7 Kg) Carton	
Hobart® 447C	E6013			6
S117132-031	3/32"	2.4	50 Lb (22.7 Kg) Carton	
S117132-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S117144-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S117144-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S117151-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S117151-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
Hobart® Deckmaster™ 1139	E6022			6
S113244-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S113251-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
Hobart® 14A	E7014			6
S114232-031	3/32"	2.4	50 Lb (22.7 Kg) Carton	
S114232-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S114232-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
S114244-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S114244-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S114244-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S114251-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S114251-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S114251-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S114258-031	3/16"	4.8	50 Lb (22.7 Kg) Carton	
Hobart® Rocket® 7024	E7024			7
S112944-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S112951-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S112959-031	3/16"	4.8	50 Lb (22.7 Kg) Carton	
S112970-031	7/32"	5.6	50 Lb (22.7 Kg) Carton	
S112981-031	1/4"	6.4	50 Lb (22.7 Kg) Carton	
Hobart® 24	E7024 / E7024-1			7
S114844-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S114851-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S114859-031	3/16"	4.8	50 Lb (22.7 Kg) Carton	
S114870-031	7/32"	5.6	50 Lb (22.7 Kg) Carton	
S114881-031	1/4"	6.4	50 Lb (22.7 Kg) Carton	
Hobart® 418	E7018 H4R / E7018-1 H4R			7
S119932-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S119932-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119932-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S119932-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S119944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S119944-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119944-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S119944-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S119951-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S119951-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119951-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S119951-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S119958-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119970-035	7/32"	5.6	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119981-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hobart® 718MC	E7018 H4R / E7018-1 H4R			8
S115932-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S115932-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S115944-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S115944-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S115951-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S115951-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
S115958-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S115970-035	7/32"	5.6	50 Lb (22.7 Kg) Hermetically Sealed Can	
S115981-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Hobart® 7018 XLM	E7018 H4R / E7018-1 H4R			8
S422032-031	3/32"	2.4	50 Lb (22.7 Kg) Carton	
S422032-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S422032-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422044-031	1/8"	3.2	50 Lb (22.7 Kg) Carton	
S422044-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S422044-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422051-031	5/32"	4.0	50 Lb (22.7 Kg) Carton	
S422051-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S422051-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422058-031	3/16"	4.8	50 Lb (22.7 Kg) Carton	
S422058-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
S422058-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422070-035	7/32"	5.6	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422081-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hobart® Soft-Arc™ 7018-1	E7018 H4R / E7018-1 H4R			8
S422432-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422444-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422451-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422458-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S422470-035	7/32"	5.6	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hobart® 18AC	E7018 H8			9
S119832-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119832-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S119832-089	3/32"	2.4	10 Lb (4.5 Kg) Plastic Pak	
S119844-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119844-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S119844-089	1/8"	3.2	10 Lb (4.5 Kg) Plastic Pak	
S119851-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S119851-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	
S119851-089	5/32"	4.0	10 Lb (4.5 Kg) Plastic Pak	
Boilermaker™ 18	E7018 H4R / E7018-1 H4R			9
S148232-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S148232-035	3/32"	2.4	50 Lb (22.5 Kg) Hermetically Sealed Can	
S148244-033	1/8"	3.2	10 Lb (22.5 Kg) Hermetically Sealed Can	
S148244-035	1/8"	3.2	50 Lb (22.5 Kg) Hermetically Sealed Can	
S148251-035	5/32"	4.0	50 Lb (22.5 Kg) Hermetically Sealed Can	
Hoballoy® 7018A1	E7018-A1 H4R			9
S125032-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125032-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125044-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125044-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125051-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125051-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Boilermaker™ 18A1	E7018-A1 H4R			10
S148032-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S148032-035	3/32"	2.4	50 Lb (22.5 Kg) Hermetically Sealed Can	
S148044-033	1/8"	3.2	10 Lb (22.5Kg) Hermetically Sealed Can	
S148044-035	1/8"	3.2	50 Lb (22.5 Kg) Hermetically Sealed Can	
Boilermaker™ B2	E8018-B2 H4R			10
S147931-008	3/32"	2.4	8 Lb (3.6 Kg) Hermetically Sealed Can	
S147931-037	3/32"	2.4	45 Lb (20.5 Kg) Hermetically Sealed Can	
S147944-033	1/8"	3.2	10 Lb (22.5 Kg) Hermetically Sealed Can	
S147944-035	1/8"	3.2	50 Lb (22.5 Kg) Hermetically Sealed Can	
S147951-035	5/32"	4.0	50 Lb (22.5 Kg) Hermetically Sealed Can	
Boilermaker™ B3	E9018-B3 H4R			10
S148132-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S148132-035	3/32"	2.4	50 Lb (22.5 Kg) Hermetically Sealed Can	
Hoballoy® 8018B2	E8018-B2 H4R			11
S125432-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125432-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125444-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125451-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125458-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 8018B2L	E8018-B2L H4R / E7018 B2L H4R			11
S126132-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126132-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126144-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126144-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126151-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126151-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126158-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126170-035	7/32"	5.6	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126181-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 8018B6	E8018-B6 H4R			11
S123532-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S123544-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S123551-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S123558-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hoballoy® 8018B8	E8018-B8 H4R			12
S124032-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S124044-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S124051-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Hoballoy® 8018C1	E8018-C1 H4			12
S125132-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125144-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125151-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125158-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 8018C2	E8018-C2 H4			12
S125232-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125244-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125244-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125251-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125251-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125281-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 8018C3	E8018-C3 H4			13
S125332-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125344-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125344-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125351-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125351-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125358-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125381-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 9015B91	E9015-B91 H4R			13
S127632-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S127644-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S127651-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S127658-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
S127658-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 9018B3	E9018-B3 H4R			13
S125532-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125532-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125544-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125544-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125551-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125558-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125581-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 9018B3L	E9018-B3L H4R / E8018-B3L H4R			14
S125932-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125932-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125944-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125951-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125958-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	

Solid Wire part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Hoballoy® 9018M	E9018-M H4R			14
S125632-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125632-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125644-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125644-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125651-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125651-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125658-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125681-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 10018D2	E10018-D2 H4R			14
S125732-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125744-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125751-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125758-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125781-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 10018M	E10018-M H4R			15
S125832-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125844-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S125844-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S125851-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 11018M	E11018-M H4R			15
S126032-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126032-035	3/32"	2.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126044-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126044-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126051-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126051-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126058-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126058-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126081-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hoballoy® 12018M	E12018-M H4R			15
S126244-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126244-035	1/8"	3.2	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126251-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S126251-035	5/32"	4.0	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126258-035	3/16"	4.8	50 Lb (22.7 Kg) Hermetically Sealed Can	
S126281-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Quantum Arc™ 3	ER70S-3			21
S307308-011	0.035"	0.9	600 Lb (272 Kg) Robo-Pak	
S307308-028	0.035"	0.9	60 Lb (27 Kg) Fiber Spool	
S307308-033	0.035"	0.9	33 Lb (15 Kg) Steel Reel	
S307308-045	0.035"	0.9	45 Lb (20.4 Kg) Steel Reel	
S307308-070	0.035"	0.9	950 Lb (431 Kg) Recyclable Robo-Pak	
S307308-085	0.035"	0.9	45 Lb (20.4 Kg) Fiber Spool	
S307312-011	0.045"	1.2	600 Lb (272 Kg) Robo-Pak	
S307312-028	0.045"	1.2	60 Lb (27 Kg) Fiber Spool	
S307312-033	0.045"	1.2	33 Lb (15 Kg) Steel Reel	
S307312-045	0.045"	1.2	45 Lb (20.4 Kg) Steel Reel	
S307312-070	0.045"	1.2	950 Lb (431 Kg) Recyclable Robo-Pak	
S307315-011	0.052"	1.4	600 Lb (272 Kg) Robo-Pak	
S307318-028	1/16"	1.6	60 Lb (27 Kg) Fiber Spool	
QCL-3	ER70S-3			21
S303308-028	0.035"	0.9	60 Lb (27 Kg) Fiber Spool	
S303308-070	0.035"	0.9	950 Lb (431 Kg) Recyclable Robo-Pak	
S303308-085	0.035"	0.9	45 Lb (20.4 Kg) Fiber Spool	
S303312-070	0.045"	1.2	950 Lb (431 Kg) Recyclable Robo-Pak	
S303312-085	0.045"	1.2	45 Lb (20.4 Kg) Fiber Spool	
Quantum Arc™ 6	ER70S-6			21
S307608-011	0.035"	0.9	600 Lb (272 Kg) Robo-Pak	
S307608-028	0.035"	0.9	60 Lb (27 Kg) Fiber Spool	
S307608-033	0.035"	0.9	33 Lb (15 Kg) Steel Reel	
S307608-045	0.035"	0.9	45 Lb (20.4 Kg) Steel Reel	
S307608-070	0.035"	0.9	950 Lb (431 Kg) Recyclable Robo-Pak	
S307608-073	0.035"	0.9	300 Lb (136 Kg) Recyclable Robo-Pak	
S307608-074	0.035"	0.9	600 Lb (272 Kg) Recyclable Robo-Pak	
S307608-085	0.035"	0.9	45 Lb (20.4 Kg) Fiber Spool	
S307610-028	0.040"	1.0	60 Lb (27 Kg) Fiber Spool	
S307610-070	0.040"	1.0	950 Lb (431 Kg) Recyclable Robo-Pak	
S307610-085	0.040"	1.0	45 Lb (20.4 Kg) Fiber Spool	
S307612-011	0.045"	1.2	600 Lb (272 Kg) Robo-Pak	
S307612-028	0.045"	1.2	60 Lb (27 Kg) Fiber Spool	
S307612-033	0.045"	1.2	33 Lb (15 Kg) Steel Reel	
S307612-045	0.045"	1.2	45 Lb (20.4 Kg) Steel Reel	
S307612-070	0.045"	1.2	950 Lb (431 Kg) Recyclable Robo-Pak	
S307612-073	0.045"	1.2	300 Lb (136 Kg) Recyclable Robo-Pak	
S307612-074	0.045"	1.2	600 Lb (272 Kg) Recyclable Robo-Pak	
S307612-085	0.045"	1.2	45 Lb (20.4 Kg) Fiber Spool	
S307615-028	0.052"	1.4	60 Lb (27 Kg) Fiber Spool	

Solid Wire ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
S307615-070	0.052"	1.4	950 Lb (431 Kg) Recyclable Robo-Pak	
S307618-007	1/16"	1.6	700 Lb (318 Kg) Recyclable Robo-Pak	
S307618-013	1/16"	1.6	500 Lb (227 Kg) Robo-Pak	
S307618-028	1/16"	1.6	60 Lb (27 Kg) Fiber Spool	
S307618-045	1/16"	1.6	45 Lb (20.4 Kg) Steel Reel	
QCL-6	ER70S-6			22
S303808-011	0.035"	0.9	600 Lb (272 Kg) Robo-Pak	
S303808-026	0.035"	0.9	30 Lb (14 Kg) Fiber Spool	
S303808-028	0.035"	0.9	60 Lb (27 Kg) Fiber Spool	
S303808-074	0.035"	0.9	600 Lb (272 Kg) Recyclable Robo-Pak	
S303808-085	0.035"	0.9	45 Lb (20.4 Kg) Fiber Spool	
S303812-011	0.045"	1.2	600 Lb (272 Kg) Robo-Pak	
S303812-028	0.045"	1.2	60 Lb (27 Kg) Fiber Spool	
S303812-070	0.045"	1.2	950 Lb (431 Kg) Recyclable Robo-Pak	
S303812-085	0.045"	1.2	45 Lb (20.4 Kg) Fiber Spool	
HB-28	ER70S-6			22
S305401-019	0.024"	0.6	2 Lb (0.9 Kg) Spool	
S305401-022	0.024"	0.6	10 Lb (4.5 Kg) Spool	
S305401-033	0.024"	0.6	33 Lb (15 Kg) Spool	
S305406-019	0.030"	0.8	2 Lb (0.9 Kg) Spool	
S305406-022	0.030"	0.8	10 Lb (4.5 Kg) Spool	
S305406-033	0.030"	0.8	33 Lb (15 Kg) Spool	
S305408-019	0.035"	0.9	2 Lb (0.9 Kg) Spool	
S305408-022	0.035"	0.9	10 Lb (4.5 Kg) Spool	
S305408-033	0.035"	0.9	33 Lb (15 Kg) Spool	
S305408-045	0.035"	0.9	45 Lb (20.4 Kg) Spool	
S305412-033	0.045"	1.2	33 Lb (15 Kg) Spool	
S305412-045	0.045"	1.2	45 Lb (20.4 Kg) Spool	
Quantum Arc™ D2	ER80S-D2 / ER90S-G			23
S307208-011	0.035"	0.9	600 Lb (272 Kg) Robo-Pak	
S307208-022	0.035"	0.9	10 Lb (4.5 Kg) Spool	
S307208-033	0.035"	0.9	33 Lb (15 Kg) Steel Reel	
S307208-045	0.035"	0.9	45 Lb (20.4 Kg) Steel Reel	
S307212-011	0.045"	1.2	600 Lb (272 Kg) Robo-Pak	
S307212-028	0.045"	1.2	60 Lb (27 Kg) Fiber Spool	
S307212-033	0.045"	1.2	33 Lb (15 Kg) Steel Reel	
S307212-045	0.045"	1.2	45 Lb (20.4 Kg) Steel Reel	
QCL-D2	ER80S-D2 / ER90S-G			23
S301808-085	0.035"	0.9	45 Lb (20.4 Kg) Fiber Spool	
S301812-028	0.045"	1.2	60 Lb (27 Kg) Fiber Spool	
S301812-085	0.045"	1.2	45 Lb (20.4 Kg) Fiber Spool	

Aluminum part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Wire				
MaxalMig 1100	ER1100			30
110003512	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
110004712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
110004723L	3/64"	1.2	100 Lb (45 Kg) Drum	
110004723	3/64"	1.2	300 Lb (136 Kg) Drum	
110006212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
110006223M	1/16"	1.6	300 Lb (136 Kg) Drum	
MaxalMig 4043	ER4043			30
404303004	0.030"	0.8	1 Lb (0.45 Kg) Plastic Spool	
404303012	0.030"	0.8	12 Lb (5.4 Kg) Wire Basket	
404303504	0.035"	0.9	1 Lb (0.45 Kg) Plastic Spool	
404303512	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
404303512P	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
404303523L	0.035"	0.9	100 Lb (45 Kg) Drum	
404303523	0.035"	0.9	300 Lb (136 Kg) Drum	
404304012	0.040"	1.0	16 Lb (7.3 Kg) Wire Basket	
404304704	3/64"	1.2	1 Lb (0.45 Kg) Plastic Spool	
404304712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
404304712P	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
404304712P22	3/64"	1.2	22 Lb (10 Kg) Plastic Spool	
404304723L	3/64"	1.2	100 Lb (45 Kg) Drum	
404304723	3/64"	1.2	300 Lb (136 Kg) Drum	
404306212P	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
404306212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
404306223L	1/16"	1.6	100 Lb (45 Kg) Drum	
404306223	1/16"	1.6	300 Lb (136 Kg) Drum	
MaxalMig 4047	ER4047			30
404703512	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
404704704	3/64"	1.2	1 Lb (0.45 Kg) Plastic Spool	
404704712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
404704723	3/64"	1.2	300 Lb (136 Kg) Drum	
404706212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
404706223	1/16"	1.6	300 Lb (136 Kg) Drum	
404706212P	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
MaxalMig 4943	ER4943			31
494303504	0.035"	0.9	1 Lb (0.45 Kg) Plastic Spool	
494303512	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
494303512P	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
494303523L	0.035"	0.9	100 Lb (45 Kg) Drum	
494303523	0.035"	0.9	300 Lb (136 Kg) Drum	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
494304704	3/64"	1.2	1 Lb (0.45 Kg) Plastic Spool	
494304712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
494304712P	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
494304723L	3/64"	1.2	100 Lb (45 Kg) Drum	
494304723	3/64"	1.2	300 Lb (136 Kg) Drum	
494306212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
494306223L	1/16"	1.6	100 Lb (45 Kg) Drum	
494306223	1/16"	1.6	300 Lb (136 Kg) Drum	
MaxalMig 5183	ER5183			31
518303504	0.035"	0.9	1 Lb (0.45 Kg) Plastic Spool	
518303523	0.035"	0.9	300 Lb (136 Kg) Drum	
518304704	3/64"	1.2	1 Lb (0.45 Kg) Plastic Spool	
518304712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
518304712P	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
518304712P22	3/64"	1.2	22 Lb (10 Kg) Plastic Spool	
518304723	3/64"	1.2	300 Lb (136 Kg) Drum	
518306212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
518306212P	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
MaxalMig 5356	ER5356			31
535603004	0.030"	0.8	1 Lb (0.45 Kg) Plastic Spool	
535603012	0.030"	0.8	12 Lb (5.4 Kg) Wire Basket	
535603504	0.035"	0.9	1 Lb (0.45 Kg) Plastic Spool	
535603508	0.035"	0.9	5 Lb (2 Kg) Plastic Spool	
535603512	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
535603512P	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
535603523L	0.035"	0.9	100 Lb (45 Kg) Drum	
535603523	0.035"	0.9	300 Lb (136 Kg) Drum	
535604012	0.040"	1.0	16 Lb (7.3 Kg) Wire Basket	
535604704	3/64"	1.2	1 Lb (0.45 Kg) Plastic Spool	
535604708	3/64"	1.2	5 Lb (2 Kg) Plastic Spool	
535604712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
535604712P	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
535604712P22	3/64"	1.2	22 Lb (10 Kg) Plastic Spool	
535604723E	3/64"	1.2	50 Lb (22.7 Kg) Drum	
535604723L	3/64"	1.2	100 Lb (45 Kg) Drum	
535604723	3/64"	1.2	300 Lb (136 Kg) Drum	
535604730	3/64"	1.2	350 Lb (159 Kg) Drum	
535606212P	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
535606212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
535606223E	1/16"	1.6	50 Lb (22.7 Kg) Drum	
535606223L	1/16"	1.6	100 Lb (45 Kg) Drum	
535606223	1/16"	1.6	300 Lb (136 Kg) Drum	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
535606230	1/16"	1.6	350 Lb (159 Kg) Drum	
535609412P	3/32"	2.4	16 Lb (7.3 Kg) Wire Basket	
535609412	3/32"	2.4	16 Lb (7.3 Kg) Wire Basket	
MaxalMig 5554	ER5554			32
555403508	0.035"	0.9	5 Lb (2 Kg) Plastic Spool	
555403512	0.035"	0.9	16 Lb (7.3 Kg) Wire Basket	
555404708	3/64"	1.2	5 Lb (2 Kg) Plastic Spool	
555404712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
555404723	3/64"	1.2	300 Lb (136 Kg) Drum	
555406212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
MaxalMig 5556	ER5556			32
555603508	0.035"	0.9	5 Lb (2 Kg) Plastic Spool	
555604704	3/64"	1.2	1 Lb (0.45 Kg) Plastic Spool	
555604708	3/64"	1.2	5 Lb (2 Kg) Plastic Spool	
555604712	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
555604712P	3/64"	1.2	16 Lb (7.3 Kg) Wire Basket	
555606212	1/16"	1.6	16 Lb (7.3 Kg) Wire Basket	
555606212P	1/16"	1.6	16 Lb (7.3 Kg) Plastic Spool	
Cut Lengths				
MaxalTig 1100	R1100			32
110006270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
110009470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
110012570	1/8"	3.2	10 Lb (4.5 Kg) Carton	
MaxalTig 4043	R4043			33
404306270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
404306271	1/16"	1.6	1 Lb (0.45 Kg) Tube	
404309471	3/32"	2.4	1 Lb (0.45 Kg) Tube	
404309470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
404312571	1/8"	3.2	1 Lb (0.45 Kg) Tube	
404312570	1/8"	3.2	10 Lb (4.5 Kg) Carton	
404315670	5/32"	4.0	10 Lb (4.5 Kg) Carton	
404318770	3/16"	4.8	10 Lb (4.5 Kg) Carton	
MaxalTig 4047	R4047			33
404706270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
404709470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
404712570	1/8"	3.2	10 Lb (4.5 Kg) Carton	
MaxalTig 4943	R4943			33
494306270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
494309470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
494312570	1/8"	3.2	10 Lb (4.5 Kg) Carton	

Aluminum ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
MaxalTig 5183	R5183			34
518306270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
518309470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
518312570	1/8"	3.2	10 Lb (4.5 Kg) Carton	
MaxalTig 5356	R5356			34
535606270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
535606271	1/16"	1.6	1 Lb (0.45 Kg) Tube	
535609471	3/32"	2.4	1 Lb (0.45 Kg) Tube	
535609470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
535612571	1/8"	3.2	1 Lb (0.45 Kg) Tube	
535612570	1/8"	3.2	10 Lb (4.5 Kg) Carton	
535615670	5/32"	4.0	10 Lb (4.5 Kg) Carton	
535618770	3/16"	4.8	10 Lb (4.5 Kg) Carton	
MaxalTig 5554	R5554			34
555409470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
555412570	1/8"	3.2	10 Lb (4.5 Kg) Carton	
MaxalTig 5556	R5556			35
555606270	1/16"	1.6	10 Lb (4.5 Kg) Carton	
555609470	3/32"	2.4	10 Lb (4.5 Kg) Carton	
555612570	1/8"	3.2	10 Lb (4.5 Kg) Carton	

Flux-Cored part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Mild Steel FCAW(gas)				
FabCO® RXR	E70T-1C/-9C			38
S246512-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S246512-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S246512-044	0.045"	1.2	44 Lb (20 Kg) Spool	
S246519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S246519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S246519-044	1/16"	1.6	44 Lb (20 Kg) Spool	
S246519-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
S246525-002	5/64"	2.0	60 Lb (27 Kg) Coil	
S246525-008	5/64"	2.0	600 Lb (272 Kg) Drum	
S246529-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S246529-008	3/32"	2.4	600 Lb (272 Kg) Drum	
S246539-002	7/64"	2.8	60 Lb (27 Kg) Coil	
FabCO® TR-70	E70T-1C H8/-9C H8			38
S247012-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S247012-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S247015-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S247019-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S247019-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S247019-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
S247025-002	5/64"	2.0	60 Lb (27 Kg) Coil	
S247025-008	5/64"	2.0	600 Lb (272 Kg) Drum	
S247029-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S247029-008	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCO® 70XHP	E70T-1CJ H8/-9CJ H8/-12CJ H8/-1MJ H8/-9MJ H8			38
S240919-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S240919-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S240925-002	5/64"	2.0	60 Lb (27 Kg) Coil	
S240929-002	3/32"	2.4	60 Lb (27 Kg) Coil	
FabCO® Premier 70	E70T-1C/-9CJ H8			39
S247415-064	0.052"	1.4	400 Lb (181 Kg) Exacto-Pak	
S247419-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 72	E70T-1C/-9C			39
S249629-002	3/32"	2.4	60 Lb (27 Kg) Coil	
FabCO® 11	E70T-1C			39
S282629-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S282629-054	3/32"	2.4	600 Lb (272 Kg) Drum	
S282629-094	3/32"	2.4	45 Lb (20.4 Kg) Bulk Coil	
FabCO® 85	E70T-5CJ H4/-5MJ H4			40
S647519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S647529-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S647529-008	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCO® 73	E70T-2C			40
S248239-002	7/64"	2.8	60 Lb (27 Kg) Coil	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
FabCO® Excel-Arc™ 71	E71T-1C/M H8, E71T-9C/M H8			40
S247108-022	0.035"	0.9	10 Lb (4.5 Kg) Spool	
S247108-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S247112-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S247112-023	0.045"	1.2	15 Lb (7 Kg) Spool	
S247112-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S247112-044	0.045"	1.2	44 Lb (20 Kg) Spool	
S247112-064	0.045"	1.2	400 Lb (181 Kg) Exacto-Pak	
S247115-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S247115-023	0.052"	1.4	15 Lb (7 Kg) Spool	
S247115-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S247115-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S247115-044	0.052"	1.4	44 Lb (20 Kg) Spool	
S247115-056	0.052"	1.4	600 Lb (272 Kg) Exacto-Pak	
S247119-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S247119-023	1/16"	1.6	15 Lb (7 Kg) Spool	
S247119-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S247119-044	1/16"	1.6	44 Lb (20 Kg) Spool	
S247119-027	1/16"	1.6	50 Lb (22.7 Kg) Spool	
S247119-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
S247125-002	5/64"	2.0	60 Lb (27 Kg) Coil	
FabCO® HORNET	E71T-1C/-1M/-9C/-9M H8			41
S246212-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S246212-044	0.045"	1.2	44 Lb (20 Kg) Spool	
S246215-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S246219-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S246219-027	1/16"	1.6	50 Lb (22.7 Kg) Spool	
S246219-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® Triple 7	E71T-1C/-1M H8			41
S285812-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S285812-025	0.045"	1.2	15 Lb (7 Kg) Spool	
S285812-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S285812-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S285815-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S285815-025	0.052"	1.4	15 Lb (7 Kg) Spool	
S285815-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S285815-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S285815-064	0.052"	1.4	400 Lb (181 Kg) Exacto-Pak	
S285815-094	0.052"	1.4	50 Lb (22.7 Kg) Bulk Coil	
S285819-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S285819-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S285819-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S285819-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
FabCO® Triple 8	E71T-1CJ/-9CJ H8			41
S288812-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S288815-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S288815-064	0.052"	1.4	400 Lb (181 Kg) Exacto-Pak	
S288819-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S288819-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S288819-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
FabCO® Element™ 71T1C	E71T-1C/-9C H8			42
S292112-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S292112-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S292115-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S292115-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S292119-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S292119-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S292119-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
FabCO® Element™ 71T1M	E71T-1M/-9M H8			42
S294112-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S294112-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S294115-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S294115-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S294119-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S294119-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 711M	E71T-1C H8/-1M H8			42
S248808-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S248812-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S248815-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S248819-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S248819-002	1/16"	1.6	60 Lb (27 Kg) Coil	
FabCO® 712M	E71T-1MJ H4/-9MJ H4/-12MJ H4			43
S237512-028	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
S237515-028	0.052"	1.4	33 Lb (15 Kg) Vacuum Pkgd Spool	
S237519-053	1/16"	1.6	33 Lb (15 Kg) Vacuum Pkgd Spool	
Formula XL®- 550	E71T-1CJ/-9CJ/-12CJ H4			43
S245019-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S245019-027	1/16"	1.6	50 Lb (22.7 Kg) Spool	
S245019-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S245019-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
Formula XL®- 550 H4	E71T-1CJ/-9CJ/-12CJ H4			43
S245112-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
S245115-053	0.052"	1.4	33 Lb (15 Kg) Vacuum Pkgd Spool	

Flux-Cored ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Formula XL®-525	E71T-1M/-12MJ H8			44
S283208-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S283212-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S283212-056	0.045"	1.2	600 Lb (272 Kg) Exacto-Pak	
S283215-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S283215-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S283219-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S283219-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 771	E71T-1C/-12CJ H8			44
S283312-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S283312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S283315-025	0.052"	1.4	15 Lb (7 Kg) Spool	
S283315-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S283319-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S283319-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 910	E71T-1M/-12MJ			44
S288412-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S288412-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S288415-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S288419-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S288419-002	1/16"	1.6	60 Lb (27 Kg) Coil	
Mild Steel FCAW(self)				
Fabshield® 4	E70T-4			45
S224525-014	5/64"	2.0	50 Lb (22.7 Kg) Coil	
S224525-029	5/64"	2.0	33 Lb (15 Kg) Spool	
S224525-082	5/64"	2.0	20 Lb (9 Kg) Spool	
S224529-008	3/32"	2.4	600 Lb (272 Kg) Drum	
S224529-014	3/32"	2.4	50 Lb (22.7 Kg) Coil	
S224529-V14	3/32"	2.4	50 Lb (22.7 Kg) Coil	
S224541-008	0.120"	3.0	600 Lb (272 Kg) Drum	
S224541-014	0.120"	3.0	50 Lb (22.7 Kg) Coil	
Fabshield® XLNT-6	E70T-6			45
S225625-H82	5/64"	2.0	20 Lb (9 Kg) Vacuum Pkgd Spool	
S225629-014	3/32"	2.4	50 Lb (22.7 Kg) Coil	
S225629-H82	3/32"	2.4	20 Lb (9 Kg) Vacuum Pkgd Spool	
Fabshield® 7027	E70T-7			45
S222725-029	5/64"	2.0	33 Lb (15 Kg) Spool	
S222729-014	3/32"	2.4	50 Lb (22.7 Kg) Coil	
S222739-014	7/64"	2.8	50 Lb (22.7 Kg) Coil	
Fabshield® XLR-8	E71T-8JD H8			46
S225719-053	1/16"	1.6	33 Lb (15 Kg) Vacuum Pkgd Spool	
S225719-070	1/16"	1.6	12 Lb (5.4 Kg) Vacuum Pkgd Spool	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
S225719-082	1/16"	1.6	20 Lb (9 Kg) Vacuum Pkgd Spool	
S225724-014	0.072"	1.8	50 Lb (22.7 Kg) Coil	
S225724-053	0.072"	1.8	33 Lb (15 Kg) Vacuum Pkgd Spool	
S225724-070	0.072"	1.8	12 Lb (5.4 Kg) Vacuum Pkgd Spool	
S225724-082	0.072"	1.8	20 Lb (9 Kg) Vacuum Pkgd Spool	
S225725-014	5/64"	2.0	50 Lb (22.7 Kg) Coil	
S225725-053	5/64"	2.0	33 Lb (15 Kg) Vacuum Pkgd Spool	
S225725-070	5/64"	2.0	12 Lb (5.4 Kg) Vacuum Pkgd Spool	
S225725-082	5/64"	2.0	20 Lb (9 Kg) Vacuum Pkgd Spool	
Fabshield® 21B	E71T-11			46
S222106-019	0.030"	0.8	2 Lb (0.9 Kg) Spool	
S222106-022	0.030"	0.8	10 Lb (4.5 Kg) Spool	
S222106-027	0.030"	0.8	50 Lb (22.7 Kg) Spool	
S222108-019	0.035"	0.9	2 Lb (0.9 Kg) Spool	
S222108-022	0.035"	0.9	10 Lb (4.5 Kg) Spool	
S222108-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S222112-022	0.045"	1.2	10 Lb (4.5 Kg) Spool	
S222112-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S222119-022	1/16"	1.6	10 Lb (4.5 Kg) Spool	
S222119-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S222123-029	0.068"	1.7	33 Lb (15 Kg) Spool	
S222125-001	5/64"	2.0	14 Lb (6 Kg) Coil	
S222125-014	5/64"	2.0	50 Lb (22.7 Kg) Coil	
S222125-029	5/64"	2.0	33 Lb (15 Kg) Spool	
S222129-014	3/32"	2.4	50 Lb (22.7 Kg) Coil	
Fabshield® 23	E71T-14			46
S222312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S222312-056	0.045"	1.2	600 Lb (272 Kg) Exacto-Pak	
S222319-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
Low-Alloy FCAW(gas)				
FabCO® 81N1	E80T1-Ni1CJ H8/-Ni1MJ H8			48
S284229-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S284229-018	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCO® 811N1	E81T1-Ni1CJ H4/-Ni1 MJ H4			48
S283612-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S283612-053	0.045"	1.2	33 Lb (15 Kg) Spool	
S283615-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S283619-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S283619-027	1/16"	1.6	50 Lb (22.7 Kg) Spool	
S283619-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S283619-053	1/16"	1.6	33 Lb (15 Kg) Spool	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Formula XL®-8Ni1	E81T1-Ni1 MJ H8			48
S245312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S245319-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 803	E81T1-Ni2CJ H4/-Ni2MJ H4			49
S283712-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S283715-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S283715-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S283715-057	0.052"	1.4	600 Lb (272 Kg) Exacto-Pak	
S283719-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S283719-053	1/16"	1.6	33 Lb (15 Kg) Vacuum Pkgd Spool	
FabCO® 911N2	E91T1-Ni2C			49
S285212-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S285219-002	1/16"	1.6	60 Lb (27 Kg) Coil	
FabCO® 881K2	E81T1-K2CJ H8/-K2MJ H8			49
S284812-022	0.045"	1.2	10 Lb (4.5 Kg) Spool	
S284812-029	0.045"	1.2	33 Lb (15 Kg) Spool	
FabCO® 81K2-C	E81T1-K2CJ H8			50
S288112-023	0.045"	1.2	15 Lb (7 Kg) Spool	
S288115-064	0.052"	1.4	400 Lb (181 Kg) Exacto-Pak	
FabCO® 991K2	E91T1-K2C H8/-K2M H8			50
S285612-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S285619-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S285619-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 95K2	E90T5-K2C H4/-K2M H4			50
S659519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 101K3	E100T1-K3C			51
S282419-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S282429-002	3/32"	2.4	60 Lb (27 Kg) Coil	
FabCO® 115K3	E110T5-K3C/-K3M H4			51
S651519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S651519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S651519-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
S651529-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S651529-008	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCO® 110	E111T1-K3 MJ H8			51
S282812-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S282819-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 1101K3-C	E111T1-K3CJ H8			52
S282712-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S282715-029	0.052"	1.4	33 Lb (15 Kg) Spool	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
FabCO® 110K3-M	E111T1-K3MJ H4			52
S288712-029	0.045"	1.2	33 Lb (15 Kg) Spool	
FabCO® 115	E110T5-K4C			52
S243512-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S243519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S243529-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S243529-008	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCO® 125K4	E120T5-K4C H4			53
S655519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S655519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S655529-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S655529-008	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCO® 105D2	E100T5-D2C			53
S650412-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S650419-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S650429-002	3/32"	2.4	60 Lb (27 Kg) Coil	
FabCO® 811A1	E81T1-A1C			53
S653212-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S653219-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 811W	E81T1-W2C H8			54
S650612-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S650615-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S650619-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 811B2	E81T1-B2C H8			54
S283512-025	0.045"	1.2	15 Lb (7 Kg) Spool	
S283512-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S283519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S283519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® XTREME® B2	E81T5-B2M H8			54
S290112-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
FabCO® 91B3	E90T1-B3C			55
S659025-002	5/64"	2.0	60 Lb (27 Kg) Coil	
S659029-002	3/32"	2.4	60 Lb (27 Kg) Coil	
FabCO® 911B3	E91T1-B3C H4/-B3M H4			55
S285012-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S285012-064	0.045"	1.2	400 Lb (181 Kg) Exacto-Pak	
S285019-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S285019-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® XTREME® B3	E91T5-B3M H8			55
S290212-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
FabCO® B6	E81T1-B6C/-B6M			56
S652512-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	

Flux-Cored ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
FabCO® B9	E91T1-B9M			56
S247912-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
S247912-064	0.045"	1.2	400 Lb (181 Kg) Exacto-Pak	
FabCO® Element™ 81K2C	E81T1-GC H8			56
S292412-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S292415-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S292419-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S292419-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® Element™ 81K2M	E81T1-GM H8			57
S294412-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S294419-029	1/16"	1.6	33 Lb (15 Kg) Spool	
FabCO® 107G	E101T1-GC			57
S289712-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
FabCO® 101	E101T1-GM			57
S241012-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S241012-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
S241019-002	1/16"	1.6	60 Lb (27 Kg) Coil	
FabCO® XTREME® 120	E121T5-GC H4			58
S290019-053	1/16"	1.6	33 Lb (15 Kg) Vacuum Pkgd Spool	
Low-Alloy FCAW(self)				
Fabshield® 71T8	E71T8-Ni1 J H8			59
S228519-P01	1/16"	1.6	14 Lb (6 Kg) Coil	
S228519-P32	1/16"	1.6	10 Lb (4.5 Kg) Vacuum Pkgd Spool	
S228525-P01	5/64"	2.0	14 Lb (6 Kg) Coil	
S228525-P32	5/64"	2.0	10 Lb (4.5 Kg) Vacuum Pkgd Spool	
Fabshield® 81N1	E71T8-Ni1 J H8			59
S228125-P01	5/64"	2.0	14 Lb (6 Kg) Coil	
Fabshield® X80	E81T8-Ni2 J H8			59
S228819-P32	1/16"	1.6	10 Lb (4.5 Kg) Vacuum Pkgd Spool	
S228825-P32	5/64"	2.0	10 Lb (4.5 Kg) Vacuum Pkgd Spool	
S228825-P01	5/64"	2.0	14 Lb (6 Kg) Coil	
Fabshield® 71K6	E71T8-K6 J H8			60
S228625-P01	5/64"	2.0	14 Lb (6 Kg) Coil	
Fabshield® Offshore 71Ni	E71T8-K6 J H8			60
S292025-032	5/64"	2.0	10 Lb (4.5 Kg) Vacuum Pkgd Spool	
Fabshield® X90	E91T8-G H8			60
S228925-P01	5/64"	2.0	14 Lb (6 Kg) Coil	
S228925-P32	5/64"	2.0	10 Lb (4.5 Kg) Vacuum Pkgd Spool	

Metal-Cored part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Mild Steel Metal-Cored				
FabCOR® 86R	E70C-6M H4			62
S249408-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S249408-064	0.035"	0.9	400 Lb (181 Kg) Exacto-Pak	
S249412-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S249412-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S249412-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S249412-044	0.045"	1.2	44 Lb (20 Kg) Spool	
S249412-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S249412-075	0.045"	1.2	750 Lb (340 Kg) Exacto-Pak	
S249412-090	0.045"	1.2	900 Lb (408 Kg) Recyclable Exacto-Pak	
S249415-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S249415-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S249415-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S249415-044	0.052"	1.4	44 Lb (20 Kg) Spool	
S249415-050	0.052"	1.4	500 Lb (227 Kg) Exacto-Pak	
S249415-075	0.052"	1.4	750 Lb (340 Kg) Exacto-Pak	
S249415-090	0.052"	1.4	900 Lb (408 Kg) Recyclable Exacto-Pak	
S249415-096	0.052"	1.4	950 Lb (431 Kg) Flat Reel	
S249419-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S249419-017	1/16"	1.6	800 Lb (363 Kg) Recyclable Exacto-Pak	
S249419-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S249419-044	1/16"	1.6	44 Lb (20 Kg) Spool	
S249419-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
S249425-002	5/64"	2.0	60 Lb (27 Kg) Coil	
S249425-008	5/64"	2.0	600 Lb (272 Kg) Drum	
S249425-096	5/64"	2.0	950 Lb (431 Kg) Flat Reel	
S249429-002	3/32"	2.4	60 Lb (27 Kg) Coil	
S249429-008	3/32"	2.4	600 Lb (272 Kg) Drum	
FabCOR® Edge™	E70C-6M H4			62
S279308-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S279308-050	0.035"	0.9	500 Lb (227 Kg) Exacto-Pak	
S279312-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S279312-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S279312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S279312-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S279312-075	0.045"	1.2	750 Lb (340 Kg) Exacto-Pak	
S279312-090	0.045"	1.2	900 Lb (408 Kg) Recyclable Exacto-Pak	
S279315-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S279315-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S279315-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S279315-050	0.052"	1.4	500 Lb (227 Kg) Exacto-Pak	
S279315-075	0.052"	1.4	750 Lb (340 Kg) Exacto-Pak	
S279315-090	0.052"	1.4	900 Lb (408 Kg) Recyclable Exacto-Pak	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
S279319-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S279319-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S279319-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
FabCOR® Edge™ MC	E70C-6M H4			62
S276312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S276312-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S276312-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S276312-075	0.045"	1.2	750 Lb (340 Kg) Exacto-Pak	
S276315-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S276315-075	0.052"	1.4	750 Lb (340 Kg) Exacto-Pak	
S276319-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S276319-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
FabCOR® Matrix™	E70C-6M H4			63
S278112-049	0.045"	1.2	33 Lb (15 Kg) Vapor Controlled Spool	
S278112-079	0.045"	1.2	750 Lb (340 Kg) Vapor Controlled Exacto-Pak	
S278115-049	0.052"	1.4	33 Lb (15 Kg) Vapor Controlled Spool	
S278115-079	0.052"	1.4	750 Lb (340 Kg) Vapor Controlled Exacto-Pak	
S278119-044	1/16"	1.6	44 Lb (20 Kg) Vapor Controlled Spool	
Eclipse® ULTIMET 716	E70C-6M H4			63
S280812-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S280812-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S280812-020	0.045"	1.2	33 Lb (15 Kg) Spool	
S280812-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S280815-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S280815-050	0.052"	1.4	500 Lb (227 Kg) Exacto-Pak	
S280815-075	0.052"	1.4	750 Lb (340 Kg) Exacto-Pak	
S280819-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S280819-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S280819-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
FabCOR® X-CEL™	E70C-6M H4			63
S279419-048	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
FabCOR® 71	E70C-6M H4			64
S280912-053	0.045"	1.2	33 Lb (15 Kg) Vacuum Pkgd Spool	
FabCOR® CVN	E70C-6M H4			64
S280512-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S280512-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S280512-075	0.045"	1.2	750 Lb (340 Kg) Exacto-Pak	
S280515-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S280519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S280519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S280519-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
FabCOR® 702	E70C-3C			64
S248419-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S248419-B33	1/16"	1.6	33 Lb (15 Kg) Bulk Spool	
S248419-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S248439-010	7/64"	2.8	60 Lb (27 Kg) Bulk Coil	
S248439-002	7/64"	2.8	60 Lb (27 Kg) Coil	
FabCOR® Element™ 70C6	E70C-6M H4			65
S294612-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S294612-002	0.045"	1.2	60 Lb (27 Kg) Coil	
S294615-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S294615-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S294619-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S294619-002	1/16"	1.6	60 Lb (27 Kg) Coil	
FabCOR® F6	E70C-GS			65
S278308-029	0.035"	0.9	33 Lb (15 Kg) Spool	
S278308-050	0.035"	0.9	500 Lb (227 Kg) Exacto-Pak	
S278308-075	0.035"	0.9	750 Lb (340 Kg) Exacto-Pak	
S278310-029	0.039"	1.0	33 Lb (15 Kg) Spool	
S278310-075	0.039"	1.0	750 Lb (340 Kg) Exacto-Pak	
S278312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S278312-075	0.045"	1.2	750 Lb (340 Kg) Exacto-Pak	
Low-Alloy Metal-Cored				
FabCOR® Edge™ Ni1	E80C-Ni1 H4			65
S279512-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S279512-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S279512-064	0.045"	1.2	400 Lb (181 Kg) Exacto-Pak	
S279515-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S279515-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S279515-075	0.052"	1.4	750 Lb (340 Kg) Exacto-Pak	
S279519-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S279519-029	1/16"	1.6	33 Lb (15 Kg) Spool	
S279519-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
FabCOR® 209	E80C-Ni1-H4			66
S278912-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S278915-002	0.052"	1.4	60 Lb (27 Kg) Coil	
FabCOR® 80N1	E80C-Ni1 H8			66
S281312-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S283315-002	0.052"	1.4	60 Lb (27 Kg) Coil	
S283315-050	0.052"	1.4	500 Lb (227 Kg) Exacto-Pak	
FabCOR® 80N2	E80C-Ni2 H4			66
S281412-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S281412-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S281419-002	1/16"	1.6	60 Lb (27 Kg) Coil	

Metal-Cored ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
FabCOR® 90	E90C-K3 H4			67
S281612-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S281612-075	0.045"	1.2	750 Lb (340 Kg) Exacto-Pak	
S281619-002	1/16"	1.6	60 Lb (27 Kg) Coil	
S281619-056	1/16"	1.6	600 Lb (272 Kg) Exacto-Pak	
FabCOR® 100	E100C-K3			67
S280112-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S280112-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S280115-029	0.052"	1.4	33 Lb (15 Kg) Spool	
S280115-050	0.052"	1.4	500 Lb (227 Kg) Exacto-Pak	
FabCOR® 1100	E110C-K4			67
S280212-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S280212-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S280212-090	0.045"	1.2	900 Lb (408 Kg) Recyclable Exacto-Pak	
S280219-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
S280219-002	1/16"	1.6	60 Lb (27 Kg) Coil	
FabCOR® 80D2	E90C-D2			68
S281212-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S281212-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S281212-050	0.045"	1.2	500 Lb (227 Kg) Exacto-Pak	
S281215-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S281215-050	0.052"	1.4	500 Lb (227 Kg) Exacto-Pak	
S281219-K75	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
FabCOR® Edge D2	E90C-D2			68
S289612-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S289612-064	0.045"	1.2	400 Lb (181 Kg) Exacto-Pak	
S289615-027	0.052"	1.4	50 Lb (22.7 Kg) Spool	
S289615-064	0.052"	1.4	400 Lb (181 Kg) Exacto-Pak	
S289619-027	1/16"	1.6	50 Lb (22.7 Kg) Spool	
S289619-075	1/16"	1.6	750 Lb (340 Kg) Exacto-Pak	
FabCOR® 80B2	E80C-B2			68
S281012-029	0.045"	1.2	33 Lb (15 Kg) Spool	
S281012-064	0.045"	1.2	400 Lb (181 Kg) Exacto-Pak	
FabCOR® 90B3	E90C-B3			69
S281712-029	0.045"	1.2	33 Lb (15 Kg) Spool	
FabCOR® 4130 SR	E90C-K3 H4			69
S275512-053	0.045"	1.2	33 Lb (15 Kg) Spool	

Seamless (MEGAFIL) part numbers

Note: The following part numbers are exclusive to North American orders. For a complete list of international products please visit, <http://www.itw-welding.de/1/>

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Seamless Metal-Cored				
MEGAFIL 710M	E70C-6M H4			76
71003	0.039	1.0	35 Lb (15.9 Kg) Spool	
71012	0.045	1.2	11 Lb (5 Kg) Spool	
71015	0.045	1.2	35 Lb (15.9 Kg) Spool	
71027	0.052	1.4	35 Lb (15.9 Kg) Spool	
71033	1/16	1.6	35 Lb (15.9 Kg) Spool	
MEGAFIL 240M	E80C-Ni1 H4			76
24015	0.045	1.2	35 Lb (15.9 Kg) Spool	
24012	0.045	1.2	11 Lb (5 Kg) Spool	
MEGAFIL 940M	E80C-Ni2 H4			76
94009	0.045	1.2	35 Lb (15.9 Kg) Spool	
MEGAFIL 1100M	E120C-K4 H4			77
11015	0.045	1.2	35 Lb (15.9 Kg) Spool	
Seamless FCAW(gas)				
MEGAFIL 713R	E71T-1MJ H4/-1C H4/-9MJ H4/-9C H4/-12MJ H4/-12C H4			77
71303	0.039	1.0	35 Lb (15.9 Kg) Spool	
71312	0.045	1.2	11 Lb (5 Kg) Spool	
71315	0.045	1.2	35 Lb (15.9 Kg) Spool	
71333	1/16	1.6	35 Lb (15.9 Kg) Spool	
MEGAFIL 821R	E81T1-NiC H4/-NiM J H4			78
82115	0.045	1.2	35 Lb (15.9 Kg) Spool	
82133	1/16	1.6	35 Lb (15.9 Kg) Spool	
MEGAFIL 550R	E91T1-K2M J H4			78
55015	0.045	1.2	35 Lb (15.9 Kg) Spool	
55027	0.052	1.4	35 Lb (15.9 Kg) Spool	

Sub-Arc Fluxes part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
SWX 110				79
110022500H			55 Lb (25 Kg) EAE Bag	
110071T00H			2200 Lb (1000 Kg) DoubleBag™	
SWX 120				79
120022500H			55 Lb (25 Kg) EAE Bag	
120071T00H			2200 Lb (1000 Kg) DoubleBag™	
SWX 130				79
130022500H			55 Lb (25 Kg) EAE Bag	
130071T00H			2200 Lb (1000 Kg) DoubleBag™	
SWX 135				80
135022500H			55 Lb (25 Kg) EAE Bag	
135071T00H			2200 Lb (1000 Kg) DoubleBag™	
SWX 140				80
140022500H			55 Lb (25 Kg) EAE Bag	
140071T00H			2200 Lb (1000 Kg) DoubleBag™	
SWX 150				80
150022300H			50 Lb (22.5 Kg) EAE Bag	
SWX 160				81
160022300H			55 Lb (25 Kg) EAE Bag	
HA-495				81
S669410-055			55 Lb (25 Kg) Bag	
HN-511				81
S669310-055			55 Lb (25 Kg) Bag	
HN-590				82
S669610-055			55 Lb (25 Kg) Bag	
SWX 010				82
A100S2000N			44 Lb (20 Kg) Steel Can	
SWX 220				96
220022500H			55 Lb (25 Kg) EAE Bag	
SWX 305				97
305022300H			55 Lb (25 Kg) EAE Bag	
SWX 330				97
330022500H			55 Lb (25 Kg) EAE Bag	
SWX 340				97
340022500H			55 Lb (25 Kg) EAE Bag	
SWX 382				102
382022300H			55 Lb (25 Kg) EAE Bag	
SWX 282				102
282022500H			55 Lb (25 Kg) EAE Bag	
HF-N & SWX HF-N				144
S669810-Z55			55 Lb (25 Kg) Bag	

Sub-Arc Cored Wire part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
SubCOR™ EM12K-S				86
S282025-002	5/64"	2.0	60 Lb (27.2 Kg) Coil	
S282029-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S282043-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S282050-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
SubCOR™ EM13K-S				86
S280425-002	5/64"	2.0	60 Lb (27.2 Kg) Coil	
S280425-008	5/64"	2.0	60 Lb (27.2 Kg) Coil	
S280429-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S280429-008	3/32"	2.4	600 Lb (272 Kg) Drum	
S280443-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S280443-008	1/8"	3.2	600 Lb (272 Kg) Drum	
S280450-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
S280450-008	5/32"	4.0	600 Lb (272 Kg) Drum	
SubCOR™ EM13K-S MOD				86
S289329-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S289329-008	3/32"	2.4	600 Lb (272 Kg) Drum	
S289343-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S289343-008	1/8"	3.2	600 Lb (272 Kg) Drum	
S289350-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
S289350-008	5/32"	4.0	600 Lb (272 Kg) Drum	
SubCOR™ N1-S				92
S282229-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S282243-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S282243-008	1/8"	3.2	600 Lb (272 Kg) Drum	
S282250-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
SubCOR™ 92-S				92
S651329-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S651343-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S651350-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
SubCOR™ 100F3-S				92
S659929-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S659943-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
SubCOR™ W-S				92
S283229-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S282343-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S282350-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
SubCOR™ F2-S				92
S282129-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S282143-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	

Sub-Arc Cored Wire ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
SubCOR™ 4130 SR	ECF3			92
S298143-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
SubCOR™ 120-S	ECM4			93
S280329-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S280343-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S280350-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
SubCOR™ B2-S	ECB2			93
S282329-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S657729-002	1/8"	3.2	60 Lb (27.2 Kg) Coil	
S657743-008	1/8"	3.2	600 Lb (272 Kg) Drum	
S657750-002	5/32"	4.0	60 Lb (27.2 Kg) Coil	
SubCOR™ B3-S	ECB3			93
S657929-002	3/32"	2.4	60 Lb (27.2 Kg) Coil	
S657929-049	3/32"	2.4	40 Lb (18.1 Kg) Coil	

Note: The following part numbers are exclusive to North American orders. For a complete list of international part numbers, e-mail subarc@itw-welding.com.

Seamless Products (see note above)				
SubCOR™ SL 731				86
503241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
50324442FH	3/32"	2.4	550 Lb (250 Kg) Drum	
503401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
50340442FH	5/32"	4.0	550 Lb (250 Kg) Drum	
SubCOR™ SL 840 HC				86
508241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
508401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL 281 Cr				94
535401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL 742				94
5222410250	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
5224010250	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P1				94
541241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
541401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL 741				94
521241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
521401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	

SubCOR™ SL 745				94
5252410250	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P1 MOD				94
542241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
542401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P11				95
544241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
544401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P12 MOD				95
546241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
546401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P22				95
549241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
549401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P24				95
552241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
552401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P36				95
556241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
556401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P5				95
559241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
559401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P9				96
562241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
562401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P92				96
566241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
566401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL P91				96
565241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
565401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL 735 1W				96
511401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
51140442FH	5/32"	4.0	550 Lb (250 Kg) Drum	
SubCOR™ SL 735 2W				96
513401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL 735 4W				96
514401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SubCOR™ SL 735 5W				96
515401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	

Sub-Arc Strip part numbers

Note: The following part numbers are exclusive to North American orders.
For a complete list of international part numbers, e-mail subarc@itw-welding.com.

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Cromastrip 308L	EQ308L			100
B61300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B61600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B6160051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B6190051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	
Cromastrip 309LNb				100
B66300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B66600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B6660051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B6690051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	
Cromastrip 347	EQ347L			100
B62300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B62600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B6260051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
Cromastrip 309L	EQ309L			100
B65300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B65600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B6560051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B6590051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	
Cromastrip 316L	EQ316L			100
B63300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B63600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B6360051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B6390051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	
B6290051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Cromastrip 309LMO				100
6733005250	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
6736005500	1.18 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
Cromastrip 21.11 L				101
B71300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B71600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B7160051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B7190051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	
Cromastrip 21.11 LNb				101
B72300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B72600550H	2.36 x 0.02"	60 x 0.5	55 Lb (25 Kg) Coil	
B7260051WH	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B7290051WH	3.54 x 0.02"	90 x 0.5	265 Lb (120 Kg) Coil	
Cromastrip 21.13.3 L				101
B73300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B73600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B7360051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B7390051WH	3.54 x 0.02"	90 x 0.5	55 Lb (25 Kg) Coil	
Cromastrip NiCr-3	EQNiCr-3			103
B95300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B95600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B9560051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B9590051WH	3.54 x 0.02"	90 x 0.5	265 Lb (120 Kg) Coil	
Cromastrip NiCrMo-3	EQNiCrMo-3			103
B92300525H	1.18 x 0.02"	30 x 0.5	55 Lb (25 Kg) Coil	
B92600550H	2.36 x 0.02"	60 x 0.5	110 Lb (50 Kg) Coil	
B9260051WH	2.36 x 0.02"	60 x 0.5	265 Lb (120 Kg) Coil	
B9290051WH	3.54 x 0.02"	90 x 0.5	265 Lb (120 Kg) Coil	

Sub-Arc Solid Wire part numbers

Note: The following part numbers are exclusive to North American orders. For a complete list of international part numbers, e-mail subarc@itw-welding.com.

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
SDX S1-EL12	EL12			85
710201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
71020414FH	5/64"	2.0	1000 Lb (454 Kg) Drum	
710241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
71024414FH	3/32"	2.4	1000 Lb (454 Kg) Drum	
710321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
71032414FH	1/8"	3.2	1000 Lb (454 Kg) Drum	
710401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
71040414FH	5/32"	4.0	1000 Lb (454 Kg) Drum	
SDX S2Si-EM12K	EM12K			85
722161025H	1/16"	1.6	55 Lb (25 Kg) Wire Basket	
722201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
72220414FH	5/64"	2.0	1000 Lb (454 Kg) Drum	
722241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
72224414FH	3/32"	2.4	1000 Lb (454 Kg) Drum	
722321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
72232414FH	1/8"	3.2	1000 Lb (454 Kg) Drum	
72232501TH	1/8"	3.2	2200 Lb (1000 Kg) Wire Stand	
722401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
72240414FH	5/32"	4.0	1000 Lb (454 Kg) Drum	
72240501TH	5/32"	4.0	2200 Lb (1000 Kg) Wire Stand	
722481025H	3/16"	4.8	55 Lb (25 Kg) Wire Basket	
SDX EM13K	EM13K			85
712201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
71220443HH	5/64"	2.0	660 Lb (300 Kg) Drum	
71220473HH	5/64"	2.0	660 Lb (300 Kg) Drum	
712241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
71224443HH	3/32"	2.4	660 Lb (300 Kg) Drum	
712321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
71232443HH	1/8"	3.2	660 Lb (300 Kg) Drum	
712401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
71240443HH	5/32"	4.0	660 Lb (300 Kg) Drum	
SDX S3Si-EH12K	EH12K			85
732201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
732241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
73224414FH	3/32"	2.4	1000 Lb (454 Kg) Drum	
732321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
73232414FH	1/8"	3.2	1000 Lb (454 Kg) Drum	
73232501TH	1/8"	3.2	2200 Lb (1000 Kg) Wire Stand	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
732401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
73240414FH	5/32"	4.0	1000 Lb (454 Kg) Drum	
73240501TH	5/32"	4.0	2200 Lb (1000 Kg) Wire Stand	
SDX S4-EH14	EH14			85
740201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
740241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
740321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
740401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX S2Mo-EA2	EA2			90
724201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
724241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
72424414FH	3/32"	2.4	1000 Lb (454 Kg) Drum	
724321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
72432414FH	1/8"	3.2	1000 Lb (454 Kg) Drum	
72432501TH	1/8"	3.2	2200 Lb (1000 Kg) Wire Stand	
724401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
72440414FH	5/32"	4.0	1000 Lb (454 Kg) Drum	
72440501TH	5/32"	4.0	2200 Lb (1000 Kg) Wire Stand	
724481025H	3/16"	4.8	55 Lb (25 Kg) Wire Basket	
SDX S3TiB				90
866321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
86632501TH	1/8"	3.2	2200 Lb (1000 Kg) Wire Stand	
866401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
86640501TH	5/32"	4.0	2200 Lb (1000 Kg) Wire Stand	
SDX CrMo1-EB2R	EB2R			90
810241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
810321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
810401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX S3Mo-EA4	EA4			90
734201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
734241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
734321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
73432501TH	1/8"	3.2	2200 Lb (1000 Kg) Wire Stand	
734401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
73440501TH	5/32"	4.0	2200 Lb (1000 Kg) Wire Stand	
SDX S3MoTiB				90
864321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
86432501TH	1/8"	3.2	2200 Lb (1000 Kg) Wire Stand	
864401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
86440501TH	5/32"	4.0	2200 Lb (1000 Kg) Wire Stand	
SDX CrMo2-EB3R	EB3R			90
820241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
820321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
820401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
SDX S2Ni1-ENi1	ENi1			91
821241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
821321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
821401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX S2Ni1Cu				91
836201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
836241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
836321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
836401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX S3Ni1Mo-EF3	EF3			91
840241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
840321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
84032414FH	1/8"	3.2	1000 Lb (454 Kg) Drum	
840401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
84040414FH	5/32"	4.0	1000 Lb (454 Kg) Drum	
SDX S2Ni2-ENi2	ENi2			91
827201025H	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
827241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
827321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
827401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX S3Ni1Mo0.2-ENi5	ENi5			91
824241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
82424414FH	3/32"	2.4	1000 Lb (454 Kg) Drum	
824321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
82432414FH	1/8"	3.2	1000 Lb (454 Kg) Drum	
824401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
82440414FH	5/32"	4.0	1000 Lb (454 Kg) Drum	
SDX S3Ni2.5CrMo				91
843241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
843321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
843401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 308L	ER308L			98
S296025-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296029-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296043-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296050-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 309L	ER309L			98
S296125-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296129-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296143-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296150-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
SDX 309L Mo	ER347			98
S296225-055	5/64"	2.0	55 Lb (25 Kg) Coil	
S296229-055	3/32"	2.4	55 Lb (25 Kg) Coil	
S296243-055	1/8"	3.2	55 Lb (25 Kg) Coil	
S296250-055	5/32"	4.0	55 Lb (25 Kg) Coil	
SDX 316L	ER316L			98
S296325-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296329-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296343-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296350-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 317L	ER317L			98
S296425-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296429-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296443-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296450-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 347	ER347			98
S296525-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296529-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296543-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296550-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 410NiMo	ER410NiMo			99
979241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
979321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
979401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 2594	ER2594			99
988241025H	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
988321025H	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
988401025H	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX 2209	ER2209			99
S296625-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296629-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296643-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296650-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX NiCr-3	ERNiCr-3			102
S296925-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296929-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296943-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296950-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	
SDX NiCrMo-3	ERNiCrMo-3			102
S296725-055	5/64"	2.0	55 Lb (25 Kg) Wire Basket	
S296729-055	3/32"	2.4	55 Lb (25 Kg) Wire Basket	
S296743-055	1/8"	3.2	55 Lb (25 Kg) Wire Basket	
S296750-055	5/32"	4.0	55 Lb (25 Kg) Wire Basket	

Stainless Stick part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
308/308H Sterling® AP	E308-16 / E308H-16			105
S481830-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S481844-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S481851-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S481858-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
308/308L Sterling® AP	E308-16 / E308L-16			105
S481930-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S481944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S481951-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S481958-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
308L Sterling®	E308L-17			105
S493930-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S493944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S493951-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S493958-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
309 (H) Sterling® AP	E309-16 / E309H-16			106
S483830-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S483844-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
309Mo/309MoL	E309Mo-16 / E309MoL-16			106
S484944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S484951-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
312 AC-DC	E312-16			106
S480630-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S480644-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S480651-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
309/309L Sterling® AP	E309-16 / E309L-16			106
S483930-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S483944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S483951-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S483958-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
309L Sterling®	E309L-17			106
S493430-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S493444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
310 AC-DC	E310-16			106
S480430-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
S480444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S480451-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S480458-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
316/316H Sterling® AP	E316-16 / E316H-16			106
S482830-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S482844-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
316/316L Sterling® AP	E316-16 / E316L-16			107
S482930-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S482944-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S482951-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S482958-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
316/316L Sterling®	E316L-17			107
S494530-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S494544-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S494551-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S494558-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
347 AC-DC	E347-16			107
S483130-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S483144-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
410NiMo AC-DC	E410NiMo-16			107
S487644-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S487651-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S487658-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
317L AC-DC	E317L-16 / E317L-17			107
S482430-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S482444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S482458-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
410 AC-DC	E410-16			107
S481330-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S481344-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S481351-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S481358-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
2209 AC-DC	E2209-16			107
S486430-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S486444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S486451-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S486458-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	

Stainless Wire part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Fabshield® 308L-O	E308LT0-3			113
S672529-062	3/32"	2.4	60 Lb (27 Kg) Coil	
Fabshield® 309L-O	E309LT0-3			113
S670919-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S670919-062	1/16"	1.6	60 Lb (27 Kg) Coil	
S670929-062	3/32"	2.4	60 Lb (27 Kg) Coil	
FabCO® 410NiMoT1	E410NiMoT1-4/-1 H4			113
S681712-073	0.045"	1.2	30 Lb (14 Kg) Vacuum Pkgd Wire Spool (VPWB)	
S681719-062	1/16"	1.6	60 Lb (27 Kg) Coil	
S681719-043	1/16"	1.6	30 Lb (14 Kg) Vacuum Pkgd Wire Spool (VPWB)	
S681719-073	1/16"	1.6	30 Lb (14 Kg) Vacuum Pkgd Wire Spool (VPWB)	
S681729-062	3/32"	2.4	60 Lb (27 Kg) Coil	
ChromaWeld™ 308LT1	E308LT1-1/-4			114
S688412-Z78	0.045"	1.2	28 Lb (13 Kg) Spool	
S688419-Z78	1/16"	1.6	28 Lb (13 Kg) Spool	
ChromaWeld™ 309LT1	E309LT1-1/-4			114
S688512-Z78	0.045"	1.2	28 Lb (13 Kg) Spool	
S688519-Z78	1/16"	1.6	28 Lb (13 Kg) Spool	
ChromaWeld™ 316LT1	E316LT1-1/-4			114
S688612-Z78	0.045"	1.2	28 Lb (13 Kg) Spool	
308/308L	ER308, ER308L			119
S512508-I12	0.035"	0.9	10 Lb (4.5 Kg) Tube	
S512511-I12	1/16"	1.6	10 Lb (4.5 Kg) Tube	
S512512-I12	0.045"	1.2	10 Lb (4.5 Kg) Tube	
S512537-I12	3/32"	2.4	10 Lb (4.5 Kg) Tube	
S512546-I12	1/8"	3.2	10 Lb (4.5 Kg) Tube	
S512550-I12	5/32"	4.0	10 Lb (4.5 Kg) Tube	
S522506-I26	0.030"	0.8	30 Lb (14 Kg) Spool	
S522508-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S522512-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
S522518-I26	1/16"	1.6	30 Lb (14 Kg) Spool	
S522529-062	3/32"	2.4	60 Lb (27 Kg) Coil	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
308L HiSiI	ER308LSi			119
S526806-I26	0.030"	0.8	30 Lb (14 Kg) Spool	
S526808-I13	0.035"	0.9	500 Lb (227 Kg) Auto-Pak	
S526808-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S526812-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
S526818-I26	1/16"	1.6	30 Lb (14 Kg) Spool	
309 (H)	ER309			119
S510311-I12	1/16"	1.6	10 Lb (4.5 Kg) Tube	
S510337-I12	1/8"	1.6	10 Lb (4.5 Kg) Tube	
308/308H	ER308, ER308H			119
S510111-I12	1/16"	1.6	10 Lb (4.5 Kg) Tube	
S510137-I12	3/32"	2.4	10 Lb (4.5 Kg) Tube	
S510146-I12	1/8"	3.2	10 Lb (4.5 Kg) Tube	
S520108-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S520112-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
309/309L	ER309, ER309L			119
S510811-I12	1/16"	1.6	10 Lb (4.5 Kg) Tube	
S510812-I12	0.045"	1.2	10 Lb (4.5 Kg) Tube	
S510837-I12	3/32"	2.4	10 Lb (4.5 Kg) Tube	
S510846-I12	1/8"	3.2	10 Lb (4.5 Kg) Tube	
S520808-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S520812-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
S520818-I26	1/16"	1.6	30 Lb (14 Kg) Spool	
S520829-062	3/32"	2.4	60 Lb (27 Kg) Coil	
309L HiSiI	ER309LSi			119
S527508-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S527512-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
316/316L	ER316, ER316L			120
S512308-I12	0.035"	0.9	10 Lb (4.5 Kg) Tube	
S512311-I12	1/16"	1.6	10 Lb (4.5 Kg) Tube	
S512312-I12	0.045"	1.2	10 Lb (4.5 Kg) Tube	
S512337-I12	3/32"	2.4	10 Lb (4.5 Kg) Tube	
S512346-I12	1/8"	3.2	10 Lb (4.5 Kg) Tube	
S512350-I12	5/32"	4.0	10 Lb (4.5 Kg) Tube	
S522308-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S522312-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
316L HiSiI	ER316LSiI			120
S527406-I26	0.030"	0.8	30 Lb (14 Kg) Spool	
S527408-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
S527412-I26	0.045"	1.2	30 Lb (14 Kg) Spool	

Stainless Wire part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
347	ER347			120
S513137-I12	3/32"	2.4	10 Lb (4.5 Kg) Tube	
S513146-I12	1/8"	3.2	10 Lb (4.5 Kg) Tube	
S523108-I26	0.035"	0.9	30 Lb (14 Kg) Spool	
410	ER410			120
S521312-I26	0.045"	1.2	30 Lb (14 Kg) Spool	
312 AC-DC	ER312			120
S480630-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S480644-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S480651-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
GoldCor® 308LSi	EC308LSi			121
S690812-026	0.045"	1.2	30 Lb (14 Kg) Spool	
S690812-Z61	0.045"	1.2	250 Lb (113 Kg) Exacto-Pak	
GoldCor® 309LSi	EC309LSi			121
S690912-026	0.045"	1.2	30 Lb (14 Kg) Spool	
S690919-026	1/16"	1.6	30 Lb (14 Kg) Spool	
GoldCor® 316LSi	EC316LSi			121
S691612-026	0.045"	1.2	30 Lb (14 Kg) Spool	

Hardfacing Stick part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Hardalloy® 118				125
S540444-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540451-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540458-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540481-Z31	1/4"	6.4	50 Lb (22.7 Kg) Carton	
Chrome-Mang™				125
S542144-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S542151-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S542158-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 32				125
S540144-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540151-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540158-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540181-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
Hardalloy® 58				126
S540344-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540351-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540358-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 140				126
S544044-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S544051-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S544058-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 155				126
S542244-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S542251-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S542258-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	

Cast Iron Stick part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Hardalloy® M-932				127
S540758-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540781-035	1/4"	6.4	50 Lb (22.7 Kg) Hermetically Sealed Can	
S540751-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 600				127
S147844-Z33	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S147851-Z33	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S147858-Z33	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 148				127
S541044-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S541051-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S541058-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 40 TiC				128
S541144-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S541151-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S541158-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Hardalloy® 61				128
S540544-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S540551-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
GP				129
S582130-032	3/32"	2.4	6 Lb (3 Kg) Hermetically Sealed Can	
S582130-045	3/32"	2.4	5 Lb (2 Kg) Plastic Pak	
S582144-045	1/8"	3.2	5 Lb (2 Kg) Plastic Pak	
S582151-045	5/32"	4.0	5 Lb (2 Kg) Plastic Pak	

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Cast-Alloy™ ENiCl				129
S500531-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S500544-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S500551-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	
S500558-033	3/16"	4.8	10 Lb (4.5 Kg) Hermetically Sealed Can	
Cast-Alloy™ 60 ENiFe-Cl				129
S500631-033	3/32"	2.4	10 Lb (4.5 Kg) Hermetically Sealed Can	
S500644-033	1/8"	3.2	10 Lb (4.5 Kg) Hermetically Sealed Can	
S500651-033	5/32"	4.0	10 Lb (4.5 Kg) Hermetically Sealed Can	

Hardfacing Wire part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Tube-Alloy® Build Up-O				134
S600412-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S600419-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S600439-062	7/64"	2.8	60 Lb (27 Kg) Coil	
Tube-Alloy® 218-O				134
S601812-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S601819-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S601819-062	1/16"	1.6	60 Lb (27 Kg) Coil	
S601839-062	7/64"	2.8	60 Lb (27 Kg) Coil	
S601839-097	7/64"	2.8	100 Lb (45 Kg) Auto-Pak	
Tube-Alloy® AP-O				134
S600119-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S600139-062	7/64"	2.8	60 Lb (27 Kg) Coil	
S600139-097	7/64"	2.8	100 Lb (45 Kg) Auto-Pak	
Tube-Alloy® 258-O				135
S605812-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S605819-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S605839-062	7/64"	2.8	60 Lb (27 Kg) Coil	
Tube-Alloy® 240-O				135
S604012-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S604019-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S604019-062	1/16"	1.6	60 Lb (27 Kg) Coil	
S604039-062	7/64"	2.8	60 Lb (27 Kg) Coil	
S604039-097	7/64"	2.8	100 Lb (45 Kg) Auto-Pak	
Tube-Alloy® 255-O				135
S605519-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S605519-062	1/16"	1.6	60 Lb (27 Kg) Coil	
S605539-062	7/64"	2.8	60 Lb (27 Kg) Coil	
Tube-Alloy® 242-O				136
S604212-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S604219-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S604239-062	7/64"	2.8	60 Lb (27 Kg) Coil	
Armorwear™				136
S605708-Z22	0.035"	0.9	10 Lb (4.5 Kg) Spool	
Tube-Alloy® 219-O				136
S602919-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S602939-062	7/64"	2.8	60 Lb (27 Kg) Coil	
Tube-Alloy® 258TiC-O				137
S605919-029	1/16"	1.6	25 Lb (11 Kg) Spool	
S605939-062	7/64"	2.8	60 Lb (27 Kg) Coil	
Tube-Alloy® 244-O				137
S604439-065	7/64"	2.8	250 Lb (113 Kg) Auto-Pak	
S604439-066	7/64"	2.8	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® A43-O				137
S607719-029	1/16"	1.6	25 Lb (11 Kg) Spool	

Hardfacing Wire ... continued

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
VertiWear® 600				138
S607112-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S607119-029	1/16"	1.6	25 Lb (11 Kg) Spool	
Tube-Alloy® 255-G				138
S608412-029	0.045"	1.2	25 Lb (11 Kg) Spool	
VertiWear® AP				138
S606812-029	0.045"	1.2	25 Lb (11 Kg) Spool	
Tube-Alloy® Build Up-G				139
S235012-Z29	0.045"	1.2	25 Lb (11 Kg) Spool	
S235019-Z29	1/16"	1.6	25 Lb (11 Kg) Spool	
S235019-Z62	1/16"	1.6	60 Lb (27 Kg) Coil	
Tube-Alloy® 258-G				139
S595412-027	0.045"	1.2	50 Lb (22.7 Kg) Spool	
S595412-029	0.045"	1.2	25 Lb (11 Kg) Spool	
S595419-027	1/16"	1.6	50 Lb (22.7 Kg) Spool	
Tube-Alloy® 260-G				139
S234219-Z29	1/16"	1.6	25 Lb (11 Kg) Spool	
S234212-Z29	0.045"	1.2	25 Lb (11 Kg) Spool	
GP-O				144
S592119-062	1/16"	1.6	60 Lb (27 Kg) Coil	

Hardfacing-Sub-Arc Wire part numbers

Part Number	Dia. (IN)	Dia. (MM)	Package	Page
Tube-Alloy® BU-S				140
S613229-266	3/32"	2.4	500 Lb (227 Kg) Auto-Pak	
S613243-065	1/8"	3.2	250 Lb (113 Kg) Auto-Pak	
S613243-266	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
S613250-066	5/32"	4.0	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® 8620-S				140
S616729-266	3/32"	2.4	500 Lb (227 Kg) Auto-Pak	
S616743-008	1/8"	3.2	600 Lb (272 Kg) Auto-Pak	
Tube-Alloy® 861-S				140
S616543-466	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® 877-S				141
S611943-066	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® 242-S MOD				141
S614343-466	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® 258-S				141
S615829-266	3/32"	2.4	500 Lb (227 Kg) Auto-Pak	
S615850-066	5/32"	4.0	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® A2JL-S				142
S614543-008	1/8"	3.2	600 Lb (272 Kg) Auto-Pak	
Tube-Alloy® 887-S				142
S618029-466	3/32"	2.4	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® A250-S				142
S611643-066	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® A420M-S				143
S615643-266	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
S615650-466	5/32"	4.0	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® 865-S MOD				143
S614929-062	3/32"	2.4	60 Lb (27 Kg) Coil	
S614943-066	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	
Tube-Alloy® 952-S				143
S614043-466	1/8"	3.2	500 Lb (227 Kg) Auto-Pak	

Hobart. **It's** the tie that binds

EXPERTISE + PARTNERSHIP

2	Mild Steel Stick Electrodes
10	Low Alloy Electrodes
20	Steel Solid Wires
30	Aluminum Wires
37	Flux-Cored, Gas-Shielded Carbon Steel
45	Flux-Cored, Self-Shielded Carbon Steel
47	Flux-Cored, Gas-Shielded Low Alloy
59	Flux-Cored, Self-Shielded Low Alloy
61	Metal-Cored, Gas-Shielded Wires Carbon Steel
79	Submerged Arc
104	Stainless Steel Stick Electrodes
111	Stainless Steel Wires
123	Hardfacing Stick Electrodes
133	Hardfacing Wires
152	Part Numbers

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Thank you for considering Hobart. Our commitment to the science of welding — and to people finding welding solutions together — is what drives our passion.

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