

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
Aluminum1.30

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)

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 (490MPa)
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