

Pipeliners® 6P+

Mild Steel, Cellulosic • AWS E6010

Key Features

- ▶ High operator appeal and control
- ▶ Easy slag removal
- ▶ Q2 Lot® - Certificate showing actual deposit chemistry available online
- ▶ Standard in the pipe welding industry

Typical Applications

- ▶ Cross country and in-plant pipe welding
- ▶ Root pass on up to X80 grade pipe
- ▶ Hot, fill and cap pass on up to X60 grade pipe

Conformances

AWS A5.1/A5.1M: 2004	E6010
ASME SFA-A5.1:	E6010
ABS:	E6010
CWB/CSA W48-06:	E4310

Welding Positions

All

DIAMETERS / PACKAGING

Diameter mm (in)	Length in (mm)	10 lb (4.5 kg) Easy Open Can 30 lb (13.6 kg) Master Carton	50 lb (22.7 kg) Easy Open Can
2.5 (3/32)	12 (300)	ED032609	
3.2 (1/8)	14 (350)	ED032610	ED030848
4.0 (5/32)	14 (350)	ED032611	ED030849

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @-29°C (-20°F)
Requirements - AWS E6010	330 (48) min.	430 (60) min.	22 min.	27 (20) min.
Typical Results ⁽³⁾ - As-Welded	405-515 (59-75)	495-620 (72-90)	22-36	27-85 (20-63)

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	%C	%Mn	%Si	%P	%S
Requirements - AWS E6010	0.20 max.	1.20 max.	1.00 max.	Not Specified	Not Specified
Typical Results ⁽³⁾ - As-Welded	0.11-0.20	0.51-0.77	0.15-0.32	0.006-0.016	0.005-0.011
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E6010	0.30 max.	0.20 max.	0.30 max.	0.08 max.	
Typical Results ⁽³⁾ - As-Welded	0.01-0.04	0.01-0.04	0.01-0.02	≤ 0.01	

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)		
	2.5 mm (3/32 in)	3.2 mm (1/8 in)	4.0 mm (5/32 in)
DC+	50-85	75-135	100-175
DC-	50-85	75-135	100-175

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽⁴⁾Preferred polarity is listed first.

Fleetweld® 180

Mild Steel, Cellulosic • AWS E6011

Key Features

- ▶ AC polarity welding
- ▶ Performs on low amperages and OCV
- ▶ Easy to strike arc

Typical Applications

- ▶ Small AC welders
- ▶ Sheet metal
- ▶ Edge, corner and butt joints
- ▶ Welding on galvanized and specially coated steels

Welding Positions

All

Conformances

AWS A5.1/A5.1M: 2004	E6011
ASME SFA-A5.1:	E6011
CWB/CSA W48-06:	E4311

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	1 lb (0.5 kg) Plastic Tube 6 lb (2.7 kg) Master Carton	5 lb (2.3 kg) Plastic Tube 20 lb (9.1 kg) Master Carton*	50 lb (22.7 kg) Easy Open Can
3/32 (2.4)	12 (300)	ED031152	ED032448	ED010110
1/8 (3.2)	14 (350)	ED031722		ED010105
5/32 (4.0)	14 (350)			ED010114

NOTE: Retail Small Packaging (RSP). All RSP products carry AWS compliance. Unlike the standard products, RSP products have no other agencies approvals.

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @-29°C (-20°F)
Requirements - AWS E6011	330 (48) min.	430 (60) min.	22 min.	27 (20) min.
Typical Results ⁽³⁾ - As-Welded	460-490 (67-71)	570-590 (83-86)	22-32	35-72 (26-53)

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%P	%S
Requirements - AWS E6011	0.20 max.	1.20 max.	1.00 max.	Not Specified	Not Specified
Typical Results ⁽³⁾ - As-Welded	0.13-0.20	0.44-0.71	0.23-0.45	0.009-0.014	0.005-0.008
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E6011	0.30 max.	0.20 max.	0.30 max.	0.08 max.	
Typical Results ⁽³⁾ - As-Welded	≤ 0.03	≤ 0.03	≤ 0.01	≤ 0.01	

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)		
	3/32 in (2.4 mm)	1/8 in (3.2 mm)	5/32 in (4.0 mm)
AC	40-90	65-120	115-150
DC±	40-80	60-110	105-135

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer on pg. 18. ⁽⁴⁾Preferred polarity is listed first.

Fleetweld® 35

Mild Steel, Cellulosic • AWS E6011

Key Features

- ▶ Stable arc performance
- ▶ High operator appeal
- ▶ AC and DC welding

Typical Applications

- ▶ Sheet metal
- ▶ In-plant pipe welding
- ▶ Steel with moderate surface contaminants
- ▶ Welding on galvanized and specially coated steels

Conformances

AWS A5.1/A5.1M: 2004	E6011
ASME SFA-A5.1:	E6011
ABS:	E6011
Lloyd's Register:	3M
EN ISO 2560-B:	E4311 A

Welding Positions

All

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	50 lb (22.7 kg) Carton
3/32 (2.4)	14 (350)	ED028152
1/8 (3.2)	14 (350)	ED028153
5/32 (4.0)	14 (350)	ED028154
3/16 (4.8)	14 (350)	ED028155
7/32 (5.6)	18 (450)	ED032301
1/4 (6.4)	18 (450)	ED028157

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @-29°C (-20°F)
Requirements - AWS E6011	330 (48) min.	430 (60) min.	22 min.	27 (20) min.
Typical Results ⁽³⁾ - As-Welded	385-415 (56-60)	470-510 (68-74)	26-33	56-101 (42-75)

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	%C	%Mn	%Si	%P	%S
Requirements - AWS E6011	0.20 max.	1.20 max.	1.00 max.	Not Specified	Not Specified
Typical Results ⁽³⁾ - As-Welded	0.11-0.16	0.32-0.60	0.09-0.28	0.006-0.011	0.004-0.013
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E6011	0.30 max.	0.20 max.	0.30 max.	0.08 max.	
Typical Results ⁽³⁾ - As-Welded	≤ 0.06	0.01-0.04	≤ 0.02	≤ 0.01	

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)					
	3/32 in (2.4 mm)	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)	7/32 in (5.6 mm)	1/4 in (6.4 mm)
AC	50-85	75-120	90-160	120-200	150-260	190-300
DC±	40-75	70-110	80-145	110-180	135-235	170-270

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽⁴⁾Preferred polarity is listed first.

Fleetweld® 35LS

AWS E6011 • Mild Steel, Cellulosic

Conformances

AWS A5.1/A5.1M: 2004	E6011
ASME SFA-A5.1:	E6011
CWB/CSA W48-06:	E4311

Welding Positions

All

Key Features

- ▶ Use for tack welds under Innershield® deposits
- ▶ Light, easy to remove slag
- ▶ AC and DC welding

Typical Applications

- ▶ Tack welding
- ▶ Steel with moderate surface contaminants

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	50 lb (22.7 kg) Carton
1/8 (3.2)	14 (350)	ED028158
5/32 (4.0)	14 (350)	ED028159

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
Requirements - AWS E6011	330 (48) min.	430 (60) min.	22 min.	27 (20) min.
Typical Results ⁽³⁾ - As-Welded	400-435 (58-63)	495-560 (72-81)	22-31	29-64 (22-47)

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	%C	%Mn	%Si	%P	%S
Requirements - AWS E6011	0.20 max.	1.20 max.	1.00 max.	Not Specified	Not Specified
Typical Results ⁽³⁾ - As-Welded	0.09-0.19	0.32-0.90	0.03-0.13	0.007-0.017	0.005-0.011
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E6011	0.30 max.	0.20 max.	0.30 max.	0.08 max.	
Typical Results ⁽³⁾ - As-Welded	≤ 0.06	0.01-0.04	≤ 0.02	0.01 max.	

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)	
	1/8 in (3.2 mm)	5/32 in (4.0 mm)
AC	80-130	120-160
DC±	70-120	110-150

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽⁴⁾Preferred polarity is listed first.

Fleetweld® 5P

Mild Steel, Cellulosic • AWS E6010

Key Features

- ▶ Deep arc penetration
- ▶ Light slag with minimal arc interference
- ▶ Excellent vertical and overhead capability

Typical Applications

- ▶ Steel with moderate surface contaminants
- ▶ Cross country and in-plant pipe welding
- ▶ Square edge butt welds
- ▶ Welding on galvanized and specially coated steels

Conformances

AWS A5.1/A5.1M: 2004	E6010
ASME SFA-A5.1:	E6010
ABS:	E6010
Lloyd's Register:	3M
CWB/CSA W48-06:	E4310
TUV:	EN ISO 2560-A: E 42 3 C25

Welding Positions

All

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	5 lb (2.3 kg) Plastic Tube 20 lb (9.1 kg) Master Carton	10 lb (4.5 kg) Easy Open Can 30 lb (13.6 kg) Master Carton	50 lb (22.7kg) Easy Open Can
3/32 (2.4)	12 (300)	ED032402	ED032561	ED010211
1/8 (3.2)	14 (350)	ED032403	ED032562	ED010203
5/32 (4.0)	14 (350)		ED032563	ED010216
3/16 (4.8)	14 (350)			ED010207
7/32 (5.6)	14 (350)			ED010219
1/4 (6.4)	14 (350)			ED010200

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @-29°C (-20°F)
Requirements - AWS E6010	330 (48) min.	430 (60) min.	22 min.	27 (20) min.
Typical Results ⁽³⁾ - As-Welded	420-475 (61-69)	515-570 (75-83)	25-31	41-68 (30-50)

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	%C	%Mn	%Si	%P	%S
Requirements - AWS E6010	0.20 max.	1.20 max.	1.00 max.	Not Specified	Not Specified
Typical Results ⁽³⁾ - As-Welded	0.09-0.17	0.40-0.63	0.09-0.43	0.005-0.017	0.005-0.014
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E6010	0.30 max.	0.20 max.	0.30 max.	0.08 max.	
Typical Results ⁽³⁾ - As-Welded	0.01-0.05	0.01-0.05	≤ 0.03	≤ 0.01	

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)					
	3/32 in (2.4 mm)	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)	7/32 in (5.6 mm)	1/4 in (6.4 mm)
DC+	40-80	70-130	90-165	140-225	200-275	220-325
DC-	50-85	75-135	100-175	–	–	–

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽⁴⁾Preferred polarity is listed first.

Fleetweld® 5P+

AWS E6010 • Mild Steel, Cellulosic

Conformances

AWS A5.1/A5.1M: 2004	E6010
ASME SFA-A5.1:	E6010
ABS:	E6010
CWB/CSA W48-06:	E4310
TUV:	EN ISO 2560-A: E 42 3 C25

Welding Positions

All

Key Features

- ▶ High operator appeal and control
- ▶ Easy slag removal
- ▶ Standard in the pipe welding industry

Typical Applications

- ▶ Cross country and in-plant pipe welding
- ▶ Steel with moderate surface contaminants
- ▶ Repair welding

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	10 lb (4.5 kg) Easy Open Can 30 lb (13.6 kg) Master Carton	50 lb (22.7kg) Easy Open Can
3/32 (2.4)	12 (300)	ED032564	ED010283
1/8 (3.2)	14 (350)	ED032565	ED010278
5/32 (4.0)	14 (350)	ED032566	ED010285
3/16 (4.8)	14 (350)		ED010281

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @-29°C (-20°F)
Requirements - AWS E6010	330 (48) min.	430 (60) min.	22 min.	27 (20) min.
Typical Results ⁽³⁾ - As-Welded	415-500 (60-73)	500-610 (73-88)	22-29	51-93 (38-69)

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.1/A5.1M: 2004

	%C	%Mn	%Si	%P	%S
Requirements - AWS E6010	0.20 max.	1.20 max.	1.00 max.	Not Specified	Not Specified
Typical Results ⁽³⁾ - As-Welded	0.09-0.20	0.46-0.79	0.10-0.32	0.005-0.017	0.004-0.014
	%Ni	%Cr	%Mo	%V	
Requirements - AWS E6010	0.30 max.	0.20 max.	0.30 max.	0.08 max.	
Typical Results ⁽³⁾ - As-Welded	≤ 0.04	≤ 0.04	≤ 0.02	≤ 0.01	

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)			
	3/32 in (2.4 mm)	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)
DC+	50-85	75-135	100-175	140-225
DC-	50-85	75-135	100-175	–

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽⁴⁾Preferred polarity is listed first.