

STICK ELECTRODE PRODUCT CATALOGUE

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Mild Steel Stick Electrodes



Code & Specification

ASME SFA/AWS A5.1 E6010

Description

BLUME® E6010 is a mild steel all position stick electrode.

Applications

BLUME® E6010 is an all position electrode including vertical down hand. Typically used on pipe or general welding on large diameter pipe.

Mechanical Properties

	As-welded
Yield Point, MPa	415
Tensile Strength, MPa	470
Elongation, %(L=4d)	26

Charpy V-Notch Impact Properties

Testing Temp.	As-welded (J)
-20°F (-29°C)	37 - 76

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si
0.08	0.50	0.20

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 12" (2.5mm x 300mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
5/32" x 16" (4.0mm x 400mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	DC±
3/32" x 12" (2.5mm x 300mm)	40 - 80
1/8" x 14" (3.2mm x 350mm)	70 - 130
5/32" x 16" (4.0mm x 400mm)	100 - 180

Approvals





Code & Specification

ASME SFA/AWS A5.1 E6011

Description

BLUME® E6011 is designed for deep penetration and welding on dirty, rusty, or painted surfaces. It can be used with both AC and DC power sources, making it suitable for a variety of applications, including fieldwork. Known for its fast-freeze characteristics, E6011 is ideal for vertical and overhead welding, providing strong, reliable welds even in challenging conditions such as outdoor or repair work.

Applications

BLUME® E6011 is ideal for welding in industries that require deep penetration and the ability to weld through rust or dirty surfaces. It is commonly used for galvanized steel, farm equipment, and pipelines.

Mechanical Properties

	As-welded
Yield Point, MPa	330
Tensile Strength, MPa	430
Elongation, %(L=4d)	22

Charpy V-Notch Impact Properties

Testing Temp.	As-welded (J)
-20°F (-29°C)	55 - 90

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Ni	Mo
0.10 - 0.15	0.30 - 0.80	0.10 - 0.30	≤ 0.30	≤ 0.30

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 12" (2.5mm x 300mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
5/32" x 16" (4.0mm x 400mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	AC	DC±
3/32" x 12" (2.5mm x 300mm)	50 - 85	40 - 75
1/8" x 14" (3.2mm x 350mm)	75 - 120	70 - 110
5/32" x 16" (4.0mm x 400mm)	90 - 160	80 - 145

Approvals





Code & Specification

ASME SFA/AWS A5.1 E6013

Description

BLUME® E6013 is a mild steel stick electrode. Operable with low amperages on sheet metal. Excellent bead appearance.

Applications

BLUME® E6013 is used for welding of sheet metal and for irregular short welds that change position. Typically used for maintenance or repair welding. Can be used on small AC Welders with low open circuit voltage.

Mechanical Properties

	As-welded
Yield Point, MPa	400 - 440
Tensile Strength, MPa	460 - 515
Elongation, %(L=4d)	20 - 23

Charpy V-Notch Impact Properties

Testing Temp.	As-welded (J)
-20°F (-29 °C)	37 - 76

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
0.04 - 0.07	0.30 - 0.45	0.15 - 0.25	≤ 0.015	≤ 0.015
Ni	Cr	Mo		
≤ 0.07	0.02 - 0.04	≤ 0.02		

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 12" (2.5mm x 300mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32" x 16" (4.0mm x 400mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	AC	DC±
3/32" x 12" (2.5mm x 300mm)	75 - 115	70 - 105
1/8" x 14" (3.2mm x 350mm)	110 - 140	100 - 135
5/32" x 16" (4.0mm x 400mm)	160 - 200	145 - 180

Approvals





Code & Specification

ASME SFA/AWS A5.1 E7018-1

Description

BLUME® E7018 is a mild steel stick electrode. Clear weld puddle without slag interference. Flat bead profile.

Applications

BLUME® E7018 is used in several industries such as power generation, petrochemical, pressure vessels and pressure piping. Typically used for mild steel welding.

Mechanical Properties

	As-welded
Yield Point, MPa	440 - 550
Tensile Strength, MPa	540 - 600
Elongation, %(L=4d)	> 27

Charpy V-Notch Impact Properties

Testing Temp. (°C)	As-welded (J)
-20°F (-29 °C)	27 min

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
0.06 - 0.08	1.20 - 1.50	0.40 - 0.60	0.01 - 0.02	0.01 - 0.02
Ni	Cr	Mo		
≤ 0.1	≤ 0.1	≤ 0.1		

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 12" (2.5mm x 300mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32" x 16" (4.0mm x 400mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	AC	DC±
3/32" x 12" (2.5mm x 300mm)	80 - 120	70 - 110
1/8" x 14" (3.2mm x 350mm)	100 - 160	90 - 160
5/32" x 16" (4.0mm x 400mm)	130 - 220	120 - 220

Approvals





Code & Specification

ASME SFA/AWS A5.4 E308L-16

Description

BLUME® E308L-16 is a stainless steel stick electrode. Flux coating provides a smooth arc transfer for all welding positions. Used to weld austenitic steels. Designed with low carbon levels to help eliminate carbide precipitation in high temperature service.

Applications

BLUME® E308L-16 is used to weld type 302, 304 and 308 stainless steels and A743 and A744 type CF-8 cast materials.

Mechanical Properties

	As-welded
Yield Point, MPa	370 - 420
Tensile Strength, MPa	540 - 595
Elongation, %(L=4d)	50 - 55

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
0.02 - 0.04	0.7 - 2.0	0.30 - 0.60	≤ 0.02	≤ 0.03
Ni	Cr	Mo		
9.5 - 10.5	19.0 - 20.0	0.15 - 0.25		

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 14" (2.5mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32" x 14" (4.0mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	AC	DC±
3/32" x 14" (2.5mm x 350mm)	40 - 70	40 - 70
1/8" x 14" (3.2mm x 350mm)	60 - 100	60 - 100
5/32" x 14" (4.0mm x 350mm)	90 - 140	90 - 140

Approvals





Stainless Steel Stick Electrodes

Code & Specification

ASME SFA/AWS A5.4 E309L-16

Description

BLUME® E309L-16 is a low-carbon SMAW electrode designed for welding dissimilar metals, particularly stainless steel to carbon steel, and for cladding applications. Its low carbon content reduces the risk of intergranular corrosion in high-temperature or corrosive environments. This electrode produces strong, smooth welds with stable arcs and minimal spatter, making it ideal for use in industries such as petrochemical, power generation, and chemical processing.

Applications

BLUME® E309L-16 is ideal for welding dissimilar metals, such as stainless steel to carbon steel, and for cladding in high-temperature or corrosive environments. It is commonly used in industries like petrochemical, power generation, and chemical processing, where corrosion resistance and strength are essential. The electrode provides smooth arcs and strong welds with minimal spatter, making it suitable for both fabrication and repair work.

Mechanical Properties

	As-welded
Yield Point, MPa	455 - 470
Tensile Strength, MPa	570 - 585
Elongation, %(L=4d)	38 - 47

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
0.02 - 0.04	1.0 - 1.5	0.30 - 0.40	≤ 0.03	≤ 0.03
Ni	Cr	Mo		
12.5- 13.5	22.50 - 24.50	≤ 0.75		

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 14" (2.5mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32" x 14" (4.0mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	AC	DC±
2.5mm x 350mm (3/32" x 14")	40 - 70	40 - 70
3.2mm x 350mm (1/8" x 14")	60 - 100	60 - 100
4.0mm x 350mm (5/32" x 14")	90 - 140	90 - 140

Approvals





Stainless Steel Stick Electrodes



Code & Specification

ASME SFA/AWS A5.4 E316L-16

Description

BLUME® E316L-16 is a stainless steel stick electrode. Flux coating provides a smooth arc transfer for all welding positions. Molybdenum grade for increased corrosion resistance. Delivers exceptional puddle control, a smooth arc, and excellent slag release.

Applications

BLUME® E316L-16 is used to weld type 316 and 316L. Used for molybdenum bearing austenitic stainless steels.

Mechanical Properties

	As-welded
Yield Point, MPa	425 - 450
Tensile Strength, MPa	560 - 585
Elongation, %(L=4d)	40 - 54

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
0.03 - 0.04	0.7 - 0.9	0.3 - 0.4	≤ 0.02	≤ 0.02
Ni	Cr	Mo		
11.5 - 13.0	18.0 - 19.0	2.2 - 2.4		

Packaging

Ø x L	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 14" (2.5mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8" x 14" (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32" x 14" (4.0mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

Ø x L	AC	DC±
3/32" x 14" (2.5mm x 350mm)	40 - 70	40 - 70
1/8" x 14" (3.2mm x 350mm)	60 - 100	60 - 100
5/32" x 14" (4.0mm x 350mm)	90 - 140	90 - 140

Approvals





Cast Iron, Non Ferrous & Others



Code & Specification

ASME SFA/AWS A5.15 E NiCu-7

Description

BLUME® E NiCu-7 is a Monel electrode for joining and surfacing of nickel copper alloys. Low iron deposit exhibit maximum corrosion resistance. Medium penetration weld. Easily machinable deposit in as welded and stress relieved condition. Passes 180° bend test on monel alloy 400 plate.

Applications

BLUME® E NiCu-7 welding Monel to itself, to stainless steels or carbon steels. Overlaying on steel to obtain a corrosion resistant surface. Used for refineries, off shore, foundries, chemical and fertiliser plants, heat exchanger, pressure vessel and column manufacturing units, food, pumps & valves manufacturing units.

Mechanical Properties

	Condition	UTS, Mpa	EL%
Specification	As Welded	490-590	30-40

Redrying Condition : 300°F (150°C) for 1 Hour

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	Cu
≤ 0.08	1.0-3.0	0.20-0.80	≤ 0.015	≤ 2.5
Ni	Fe			
62.0-68.0	1.0-2.5			

Packaging

Ø x L	Amperage, A	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 14" (2.5mm x 350mm)	40-80	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
1/8" x 14" (3.2mm x 350mm)	80-110	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
5/32" x 14" (4.0mm x 350mm)	110-140	2.2 lbs (1 kg)	10	22 lbs (10 kgs)

Approvals





Cast Iron, Non Ferrous & Others



Code & Specification

ASME SFA/AWS A5.15 E NiFe-CI

Description

BLUME® E NiFe-CI is a Ni-Fe type machinable electrode for Repair and Welding of Cast Iron. Produces dense, soft and ductile weld with adequate strength. Provides porosity are welding. Controlled dilution and penetration. Does not require preheating for large heavy casting.

Applications

BLUME® E NiFe-CI is used for repair of broken heavy casting along with welding and repairing of all cast iron components. Main items used to repair are pump casting and gears, cast iron dies, gear boxes and gear teeth.

Mechanical Properties

	Condition	Hardness (3 Layer), BHN
Specification	As Welded	150-190

Redrying Condition : 300°F (150°C) for 1 Hour

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	Cu
≤ 2.0	≤ 2.50	≤ 4.0	≤ 0.03	≤ 2.5
Ni	Fe			
45.0-60.0	3.0-6.0			

Packaging

Ø x L	Amperage, A	Wt./Carton	Carton/Box	Net wt./Box
3/32" x 14" (2.5mm x 350mm)	40-70	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
1/8" x 14" (3.2mm x 350mm)	70-110	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
5/32" x 14" (4.0mm x 350mm)	90-120	2.2 lbs (1 kg)	10	22 lbs (10 kgs)

Approvals





Xycore Inc.

Publisher:

Xycore Inc.

Contacts:

Group Communications & Client Relations
info@xycoreinc.com

Website:

www.xycoreinc.com

To Order Publications:

Use The Xycore Inc. Website Or Write To:

Group Communications & Client Relations
Xycore Inc.
350 W Passaic Street
Suite #401
Rochelle Park
NJ 07662
USA

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