

Excalibur® 316/316L-15, -16, -17

316/316L-15: AWS E316-15/E316L-15; 316/316L-16: AWS E316-16/E316L-16; 316/316L-17: AWS E316-17/E316L-17

**KEY FEATURES**

- Q2 Lot® - Certificate showing actual deposit chemistry and calculated ferrite number (FN) available online
- Designed with low carbon levels to help eliminate carbide precipitation in high temperature service
- Molybdenum grade for increased corrosion resistance

316/316L-15

- Flux coating is fast freezing for vertical down welding and slag is self-peeling for easy removal
- Smooth bead appearance with evenly spaced ripples and flat face

316/316L-16

- Flux coating provides smooth arc transfer and slag is self-peeling for easy removal

316/316L-17

- Flux coating provides smooth arc transfer in the flat and horizontal positions and slag is self-peeling for easy removal

CONFORMANCES

AWS A5.4/A5.4M: 2006:

316/316L-15	E316-15, E316L-15
316/316L-16	E316-16, E316L-16
316/316L-17	E316-17, E316L-17

ASME SFA-A5.4:

Same as Above

ABS:

316/316L-15	E316-15, E316L-15
316/316L-16	E316-16, E316L-16

CWB/CSA W48-06:

316/316L-15	E316-15, E316L-15
316/316L-16	E316-16, E316L-16
316/316L-17	E316-17, E316L-17

MIL-E-22200/2:

316/316L-16	MIL-316-16, MIL-316L-16 <input type="checkbox"/>
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APPLICATIONS

- Molybdenum bearing austenitic stainless steels
- Type 316 and 316L

WELDING POSITIONS

316/316L-15	All
316/316L-16	All, except vertical down
316/316L-17	Flat & Horizontal

DIAMETERS / PACKAGING

Diameter		Length		8 lb (3.6 kg) Easy Open Can		
in	(mm)	in	(mm)	316/316L-15	316/316L-16	316/316L-17
3/32	(2.4)	12	(300)	ED033108	ED033104	ED033110
1/8	(3.2)	14	(350)	ED033109		

Diameter		Length		10 lb (4.5 kg) Easy Open Can		
in	(mm)	in	(mm)	316/316L-15	316/316L-16	316/316L-17
1/8	(3.2)	14	350)		ED033105	ED033111
5/32	(4.0)	14	(350)		ED033106	ED033112
3/16	(4.8)	14	(350)		ED033107	ED033113

MECHANICAL PROPERTIES(1) – As Required per AWS A5.4/A5.4M: 2006

	Yield Strength(2)	Tensile Strength	Elongation	Ferrite
	MPa (ksi)	MPa (ksi)	%	Number
Requirements				
AWS E316-15, -16, -17	Not	520 (75) min.	30	Not
AWS E316L-15, -16, -17	Specified	490 (70) min.	min.	Specified
Typical Performance(3)				
As-Welded				
316/316L-15	470 (68)	620 (90)	38	4 - 12
316/316L-16	425 - 450 (62 - 65)	560 - 585 (81 - 85)	40 - 54	8 - 13
316/316L-17	470 (68)	585 (85) □	45	13

DEPOSIT COMPOSITION(1) – As Required per AWS A5.4/A5.4M: 2006

	%C(4)	%Cr	%Ni	%Mo	%Mn
Requirements					
AWS E316L-15, -16, -17	0.04 max.	17.0 - 20.0	11.0 - 14.0	2.0 - 3.0	0.5 - 2.5
Typical Performance(3)					
316/316L-15	0.02	18.6 - 19.3	12.0 - 12.4	2.2 - 2.6	0.7
316/316L-16	0.03 - 0.04	18.7 - 19.2	11.4 - 12.1	2.2 - 2.4	0.7 - 0.9
316/316L-17	0.03	19.1 - 19.7	11.6 - 12.7	2.1 - 2.4	0.8 - 1.0
	%Si	%P	%S	%Cu	
Requirements					
AWS E316L-15, -16, -17	1.00 max	0.04 max.	0.03 max.	0.75 max.	
Typical Performance(3)					
316/316L-15	0.72 - 0.74	0.02	0.01	0.24	
316/316L-16	0.29 - 0.39	0.02	0.02	0.26	
316/316L-17	0.61 - 0.72	0.02	0.01	0.26	

TYPICAL OPERATING PROCEDURES

Polarity	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)
316/316L-15				
DC+/AC	60 - 70	90 - 100	–	–
316/316L-16				
DC+/AC	40 - 70	60 - 100	90 - 140	120 - 185
316/316L-17				
DC+/AC	40 - 80	75 - 110	95 - 150	130 - 200