

Shield-Bright 309L

FCAW wire for 22%Cr - 12%Ni stainless steel. For all-position welding. Designed for welding type 309 wrought or cast forms, but used extensively for welding type 304 to mild or carbon steel. Also used for welding 304 clad sheets and for applying stainless steel sheet linings to carbon steel. Carbon content 0.04% maximum.

Specifications

Classifications

SFA/AWS A5.22 : E309LT1-1
SFA/AWS A5.22 : E309LT1-4
JIS Z 3323 : YF-309LC
KS D 3612 : YF-309LC
EN ISO 17633-A : T 23 12 L P C1 2
EN ISO 17633-A : T 23 12 L P M21 2

Approvals

ABS : E309LT1-1
ABS : E309LT1-4
BV : 309L (C1)
BV : SA 309L (M21)
CCS : 309L (C1)
CE : EN 13479
ClassNK : KW309LG(C)
CWB : E 309LT1-1 (M21)
CWB : E 309LT1-4 (C1)
DNV : VL 309L (M21)
KR : RW309LG(C) (C1)
LR : SS/CMn
RS : A-9sp(x8CrNi 24 14)
UKCA : EN 13479
VdTÜV : 04833 (M20,M21)

Approvals are based on factory location. Please contact ESAB for more information.

Welding Current

DC+

Alloy Type

C Cr Ni

Shielding Gas

M21, C1 (EN ISO 14175)

Tensile Properties

Testing Condition	Yield Strength	Tensile Strength	Elongation
M21 Shielding Gas			
As Welded	377 MPa (55 ksi)	559 MPa (81 ksi)	39 %
C1 Shielding Gas			
As Welded	368 MPa (53 ksi)	543 MPa (79 ksi)	44 %

Charpy Testing

Testing Condition	Testing Temp	Impact Value
M21 Shielding Gas		
As Welded	-29 °C (-20 °F)	45 J (33 ft-lb)
As Welded	-196 °C (-321 °F)	15 J (11 ft-lb)
C1 Shielding Gas		
As Welded	-196 °C (-321 °F)	18 J (13 ft-lb)
As Welded	-29 °C (-20 °F)	55 J (41 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr
M21 Shielding Gas						
0.030	1.30	0.90	0.007	0.024	12.5	23.5
C1 Shielding gas						

Shield-Bright 309L

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr
0.029	1.10	0.80	0.007	0.024	12.4	23.1

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate
1.2 mm (0.045 in.)	130-220 A	24-29 V	5.8-14.4 m/min (228-567 in./min)	1.9-4.6 kg/h (4.2-10. lbs/h)