



Product Data Sheet

Shield-Bright 309L

T 'Tubular cored electrode arc welding'

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Neil Farrow	borgtz	Neil Farrow	EN010704	EN010304	2023-06-08	1 (2)

REASON FOR ISSUE

UKCA approval added.

GENERAL

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.

Shielding Gas: M21, C1 (EN ISO 14175) **Alloy Type:** C Cr Ni

Polarity: DC+ **Fill Type:** Rutile

CLASSIFICATIONS Weld Metal

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)

CHEMICAL COMPOSITION

All Weld Metal (%)

	M21 Shielding Gas		C1 Shielding gas	
	Min	Max	Min	Max
C		0.04		0.04
Si		1.0		1.0
Mn	0.50	2.5	0.50	2.5
P		0.030		0.030
S		0.025		0.025
Cr	22.0	25.0	22.0	25.0
Ni	12.0	14.0	12.0	14.0
Mo		0.3		0.3
Cu		0.5		0.5



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MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Shielding Gas	Condition	Rp0.2 [MPa/ksi]		Rm [MPa/ksi]			A4 [%]	
		Min	Typ	Min	Max	Typ	Min	Typ
M21 Shielding Gas	As welded		377/55	520/75		559/81	30	39
C1 Shielding Gas	As welded		368/53	520/75		543/79	30	44

Comments:

Shielding Gas	Condition	Temp [°C/°F]	Charpy V [J/ft-lb]	
			Min	Typ
C1 Shielding Gas	As welded	-29/-20 -196/-321		55/41 18/13
M21 Shielding Gas	As welded	-29/-20 -196/-321		45/33 15/11

Comments:

ECONOMICS & CURRENT DATA

Dimension	Current (A)		W	η	N	H			Feed			U		
Ø	Min	Max	Nom	Nom	Nom	Min	Max	Nom	Min	Max	Nom	Min	Max	Nom
1.2 mm (0.045 in.)	130	220	20	83		1.9 kg/h (4.2 lb/h)	4.6 kg/h (10.1 lb/h)		5.8 m/min (228 in/min)	14.4 m/min (567 in/min)		24	29	

W = Gas consumption (l/min)

η = Filler metal efficiency (g weld metal x 100 / g wire)(%)

N = Deposition efficiency (g weld metal x 100 / g electrode)(%)

H = Deposition rate (kg weld metal/hour arc time)

Feed = Wire feed speed (m/min)

U = Arc voltage (V)