

Classifications

EN ISO 14343-A
AWS A5.9 / SFA-5.9

W 19 12 3 L

ER316L

Characteristics and typical fields of application

TIG rod and wire of W 19 12 3 L / ER316L type for joining and surfacing application with matching and similar unstabilized austenitic CrNi(N) and CrNiMo(N)-steels and cast steel grades. Corrosion resistance similar to matching low-carbon and stabilized austenitic 17Cr-12Ni-2Mo-steels and cast steel grades.

Excellent weld metal toughness down to -196°C . Max. service temperature 400°C .

Base materials

1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4409 GX2CrNiMo19-11-2, 1.4429 X2CrNiMoN17-12-3,

1.4432 X2CrNiMo17-12-3, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4571 X6CrNiMoTi17-12-2,

1.4580 X6CrNiMoNb17-12-2, 1.4583 X10CrNiMoNb18-12

UNS S31600, S31603, S31635, S31640, S31653

AISI 316L, 316Ti, 316Cb

Typical analysis


	C	Si	Mn	Cr	Ni	Mo
wt.-%	≤ 0.02	0.5	1.8	18.5	12.3	2.8

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact energy ISO-V KV J		
	MPa	MPa	%	20°C	-20°C	-196°C
u	470 (≥ 320)	610 (≥ 510)	38 (≥ 25)	140 (≥ 60)	130 (≥ 47)	58 (≥ 32)

u untreated, as-welded – shielding gas Ar

Operating data

	Polarity	DC-	Dimension mm
	Shielding gas (EN ISO 14175)	I1	
	Rod marking	+ W 19 12 3 L / ER 316 L	
		0.8	
		0.9	
		1.0	
		1.2	
	1.0 x 1000		
	1.2 x 1000		
	1.6 x 1000		
	2.0 x 1000		
	2.4 x 1000		
	3.2 x 1000		
	4.0 x 1000		

Heat input max. 2.0 kJ/mm , interpass temperature max. 150°C .

Approvals

TÜV (09500), DB (43.132.20), ABS, BV, DNV, LR, NAKS, CE