

Classifications

AWS A5.9 / SFA-5.9

EN ISO 14343-A

ER316L

W 19 12 3 L

Characteristics and typical fields of application

TIG rod of ER316L / W 19 12 3 L type for joining and surfacing applications 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 -320°F. Max. service temperature 752°F.

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	
	ksi	ksi	%	68°F	-320°F
u	68 (≥ 46)	88 (≥ 74)	38 (≥ 25)	103	43 (≥ 24)

u untreated, as-welded – shielding gas Ar

Operating data

	Polarity	DC-	Dimension inch
	Shielding gas (EN ISO 14175)	I1	0.035" × 39"
			0.045" × 39"
	Rod marking	W 19 12 3 L ER 316 L	1/16" × 39"
			5/64" × 39"
			3/32" × 39"

Approvals

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