

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9
W 19 13 4 L	ER317L

Characteristics and typical fields of application

TIG rod of W 19 13 4 L / ER317L type for welding 18Cr-14Ni-3Mo / 317L austenitic stainless steels and similar. The enhanced content of chromium, nickel and molybdenum compared to 1.4404/316L gives improved corrosion properties in acid chloride containing environments. The microstructure is austenite with 5 – 10% ferrite. Better resistance to general, pitting and intercrystalline corrosion in chloride containing environments than 1.4404 / 316L. Intended for severe service conditions, i.e. in dilute hot acids.

Base materials

CrNiMo(N) austenitic stainless steels with higher Mo content or corrosion resistant claddings on mild steels
1.4429 X2CrNiMoN17-13-3, 1.4434 X2CrNiMoN18-12-4, 1.4435 X2CrNiMo18-14-3, 1.4438 X2CrNiMo19-14-4, 1.4439 X2CrNiMoN17-13-5
AISI 316L, 316LN, 317L, 317LN, 317LMN
UNS S31600, S31653, S31703, S31726, S31753

Typical analysis


	C	Si	Mn	Cr	Ni	Mo	FN
wt.-%	0.02	0.4	1.7	19	13.5	3.5	9

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		Hardness
	MPa	MPa	%	20°C	-40°C	Brinell
u	440 (≥ 350)	630 (≥ 550)	28 (≥ 25)	100	(≥ 70)	200

u untreated, as-welded – shielding gas Ar + 5 He

Operating data

	Polarity	DC-	Dimension mm
	Shielding gas (EN ISO 14175)	I1 Ar + 1 – 5 % H ₂ Ar + 20 – 30% He	

Suggested heat input is max. 1.5 kJ/mm, interpass temperature max. 100°C.

Preheating and post-weld heat-treatment not necessary. In special cases, solution annealing can be performed at 1050°C followed by water quenching.

Approvals

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