

Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22
T Z19 12 3 L P M21 1	TS316L-F M21 (C1) 1	E316LT1-4
T Z19 12 3 L P C1 1		E316LT1-1

Characteristics and typical fields of application

Rutile flux cored welding wire, with controlled weld metal ferrite content (3-6 FN), particularly for good cryogenic toughness and lateral expansion down to $-196\text{ }^{\circ}\text{C}$ like specified for LNG applications. The slag system of the wire provides excellent positional welding characteristics and fast travel speeds.

Base materials

1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-13-3, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4583 X10CrNiMoNb18-12, 1.4409 GX2CrNiMo19-11-2
UNS S31603, S31653; AISI 316L, 316 Ti, 316Cb

Typical analysis of the wire and of all-weld metal (wt.-%)

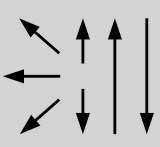
	C	Si	Mn	Cr	Mo	Ni
wt.-%	0.03	0.7	1.4	18.1	2.1	12.5

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p0,2}$	Tensile strength R_m	Elongation ($L_0=5d_0$)	Impact work ISO-V KV J		Lateral expansion mm
	MPa	MPa	%	+20 °C	-196 °C	-196 °C
u	390 (≥ 320)	550 (≥ 510)	40 (≥ 30)	75	45 (≥ 32)	≥ 0.38

u untreated, as welded – shielding gas Ar + 18 % CO₂

Operating data

	Polarity: DC (+)	Shielding gases: Argon + 15 – 25 % CO ₂ 100 % CO ₂	Redrying: possible 150°C / 24 h	ø (mm) 1.2	Amps A 100 – 220	Voltage V 20 – 31
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Welding with standard GMAW-facilities possible, slightly trailing torch position (angel appr. 80°), slight weaving is recommended for positional welding; when using 100 % CO₂ as shielding gas it is necessary to increase the voltage by 2 V; the gas flow should be 15 – 18 l/min

Approvals

TÜV (12823.), CE