

Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22 / SFA-5.22
T 19 9 L R M21 (C1) 3	TS 308L-F M21 / C1 0	E308LT0-4(1)

Characteristics and typical fields of application

Rutile flux-cored wire of T 19 9 L R / E308LT0 type designed for welding 1.4307 / 304L type stainless steels with very good corrosion resistance under fairly severe conditions, e.g. in oxidizing acids and cold or dilute reducing acids. Also suitable for welding stainless steels that are stabilized with titanium or niobium, such as 1.4541 / 321, 1.4878 / 321H and 1.4550 / 347 in cases where the construction will be operating at temperatures below 400°C. For higher temperatures, a niobium-stabilized consumable such as FOXcore 347-T0 is required. The scaling temperature is approximately 850°C in air. FOXcore 308L-T0 DG provides excellent weldability in flat as well as horizontal-vertical position. Great slag detachability and almost no spatter formation. Optimized to result in a shiny weld metal surface; also when welding with 100% CO₂. Due to the slow freezing rutile slag, the weld metal shows very smooth bead appearance and low temper discoloration, which makes post-weld cleaning easier. Welding in vertical-up and overhead positions is preferably done using FOXcore 308L-T1.

Base materials

1.4301 X5CrNi18-10, 1.4306 X2CrNi19-11, 1.4307 X2CrNi18-9, 1.4311 X2CrNiN18-9,
1.4312 GX10CrNi18-8, 1.4541 X6CrNiTi18-10, 1.4546 X5CrNiNb18-10, 1.4550 X6CrNiNb18-10
UNS S30400, S30403, S30453, S32100, S34700
AISI 304, 304L, 304LN, 302, 321, 347

Typical analysis

	C	Si	Mn	Cr	Ni	FN
wt.-%	0.03	0.7	1.5	19.5	10.5	3 – 12

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

Condition	Yield strength	Tensile strength	Elongation A	Impact energy ISO-V KV J		Hardness
	R _{p0.2}	R _m	(L ₀ =5d ₀)	20°C	-120°C	
u	365 (≥ 320)	530 (≥ 520)	42 (≥ 30)	57	39 (≥32)	200

u untreated, as-welded – shielding gas M21 (Ar + 18% CO₂)

Operating data

	Polarity	DC +	Dimension mm
	Shielding gas (EN ISO 14175)	M21, (C1)	1.2
			1.6

Welding with standard GMAW power source with DC+ polarity. No pulsing needed. Backhand (drag) technique preferred with a work angle of approximately 80°. Ar + 15 – 25% CO₂ offers the best weldability. 100% CO₂ can be also used, but the voltage should be increased by 2 V. Suitable gas flow rate is 15 – 20 l/min. Suggested heat input is max. 2.0 kJ/mm, interpass temperature max. 150°C and wire stick-out 15 – 20 mm. Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1050°C followed by water quenching.

Approvals

TÜV (19685), CWB, DB (43.014.53), ABS, CE