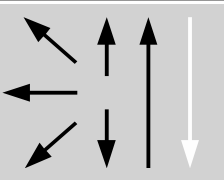


Classification							
EN ISO 17633-A		EN ISO 17633-B			AWS A5.22 / SFA-5.22		
T 19 12 3 L P M21 (C1) 1		TS 316L-F M21 (C1) 1			E316LT1-4(1)		
Characteristics and typical fields of application							
<p>Rutile flux-cored wire of T 19 12 3 L P / E316LT1 type for welding of stainless steels such as 1.4404, 1.4432 / 316L. The fast freezing slag offers excellent weldability and slag control in all positions. Easy handling and high deposition rate result in high productivity with excellent welding performance and very low spatter formation. Increased travel speeds as well as self-releasing slag with little demand for cleaning and pickling provide considerable savings in time and money. The wide arc ensures even penetration and side-wall fusion to prevent lack of fusion. Suitable for service temperatures from -120°C to 400°C. The scaling temperature is approximately 850°C in air. For flat welding positions, BÖHLER EAS 4-FD (FOXcore 316L-T0) or Avesta FCW-2D 316L/SKR (FOXcore 316L-T0 DG) may be preferred.</p>							
Base materials							
<p>1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4409 GX2CrNiMo19-11-2, 1.4432 X2CrNiMo17-12-3, 1.4429 X2CrNiMoN17-12-3, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4583 X10CrNiMoNb18-12</p> <p>UNS S31600, S31603, S31635, S31640, S31653</p> <p>AISI 316L, 316Ti, 316Cb</p>							
Typical analysis of all-weld metal							Ferrite WRC 92
	C	Si	Mn	Cr	Ni	Mo	FN
wt.-%	0.03	0.7	1.5	19.0	12.0	2.7	3 – 10
Mechanical properties of all-weld metal – typical values (minimum values)							
Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation $A (L_0=5d_0)$	Impact work ISO-V KV J			
	MPa	MPa	%	20°C	-20°C	-120°C	
u	430 (≥ 320)	560 (≥ 510)	34 (≥ 30)	65	55	40 (≥ 32)	
u untreated, as-welded – shielding gas Ar + 18% CO ₂							
Operating data							
	Ø mm	Wire feed m/min	Arc length mm	Current A	Voltage V		
	0.9	8.0 – 15.0	~ 3	100 – 160	22 – 27		
	1.2	6.0 – 13.0	~ 3	150 – 250	22 – 29		
	1.6	4.5 – 9.5	~ 3	200 – 360	23 – 28		
<p>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 as shielding gas offers the best weldability. 100% CO₂ can be also used, but the voltage should be increased by 2 V. Suitable gas flow rate for welding outdoors is 18 – 25 l/min. The heat input should not exceed 2.0 kJ/mm, the interpass temperature be limited to max. 150°C and the 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.</p>							
Approvals							
TÜV (09118), DB (43.014.24), LR (M21), DNV GL, ABS, BV (M21 + Ø 1.2 mm), NAKS, CE							