Avesta 2507/P100 rutile

Covered electrode, high-alloyed, superduplex stainless

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 25 9 4 N L R 4 2	E2594-16

Characteristics and typical fields of application

Rutile coated electrode of E 25 9 4 N L R / E2594-16 type. Designed for welding of superduplex steel and equivalent steel grades such as 1.4410 / UNS S32750, 1.4507 / UNS S32550 and 1.4501 / UNS S32760, used in desalination, pulp & paper, flue gas desulfurization and seawater systems. Developed to fulfill severe requirements stated in NORSOK M-601 and similar standards. Properties of the weld metal match those of the parent metal, offering high tensile strength and toughness as well as an excellent resistance to stress corrosion cracking and localized corrosion in chloride containing environments. Meets the corrosion test requirements for ASTM G48 Methods A, B and E (40°C) in both as-welded condition and after post-weld heat treatment. Over-alloyed in nickel to promote austenite formation. Designed for welding in all positions. The operating temperature range is –50°C to 220°C.

Base materials

1.4410 X2CrNiMoN25-7-4, 1.4467 X2CrMnNiMoN26-5-4, 1.4468 GX2CrNiMoN25-6-3, 1.4501 X2CrNiMoCuWN25-7-4, 1.4507 X2CrNiMoCuN25-6-3, 1.4515 GX2CrNiMoCuN26-6-3, 1.4517 GX2CrNiMoCuN25-6-3-3
UNS S32750, S32760, J93380, S32520, S32550, S39274, S32950

Typical analysis

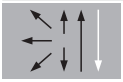
	C	Si	Mn	Cr	Ni	Mo	N	PRE_N	FN
wt.-%	0.03	0.4	1.0	24.8	9.3	3.7	0.23	≥ 40	45

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	–50°C	HB
u	720 (≥ 550)	910 (≥ 760)	30 (≥ 18)	105	50 (≥ 32)	250

u untreated, as-welded

Operating data



Polarity	DC+
Electrode identification	2507/P100

Dimension mm	Current A
2.5 × 300	50 – 70
3.2 × 350	80 – 100
4.0 × 350	100 – 140

Suggested heat input 0.3 – 1.5 kJ/mm and interpass temperature max. 100°C.
Re-drying needed: 350°C for min. 2 h.
Metal recovery approximately 107 – 110% at max. welding current.
Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1100 – 1150°C followed by water quenching.

Approvals

CE