Avesta 2507/P100 rutile

Covered electrode, high-alloyed, superduplex stainless steel

Classifications

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

Characteristics and typical fields of application

Covered electrode designed for welding of superduplex steel and equivalent steel grades such as EN 1.4410 / UNS S32570 and EN 1.4501 / UNS S32760. Superduplex steels are particularly popular for desalination, pulp & paper, flue gas desulphurization and sea water systems. Developed to satisfy severe requirements, such as those 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 (annealing at 1100 – 1150°C, followed by short air cooling and quenching).

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

EN 1.4410 X2CrNiMoN25-7-4, 1.4467 X2CrMnNiMoN 26-5-4, 1.4468, GX2 CrNiMoN 25-6-3, 1.4501 X2CrNiMoCuWN25-7-4, 1.4507 X2CrNiMoCuN 25-6-3, 1.4515 GX2CrNiMoCuN 26-6-3, 1.4517 GX2CrNiMoCuN 25-6-3-3; UNS S32750, S32760, J93380, S32520, S32550, S39274, S32950

Typical analysis of all-weld metal

Ferrite WRC-92

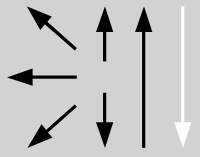
	C	Si	Mn	Cr	Ni	Mo	N	PREN	FN
wt.-%	0.03	0.4	1.0	24.8	9.3	3.7	0.23	>40	45

Typical mechanical properties of all-weld metal – typical values (min. values)

Heat treatment	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J		Hardness
	MPa	MPa	%	20°C	–46°C	HB
u	**700** (≥ 550)	**880** (≥ 760)	**26** (≥ 18)	80	45	**250**

u untreated, as-welded

Operating data



Polarity	Electrode ID	Ø (mm)	L mm	Current A
DC+	2507/P100 rutile	2.5	300	50 – 70
		3.2	350	80 – 100
		4.0	350	100 – 140

Suggested heat input is 0.3 – 1.5 kJ/mm, interpass temperature max. 100°C.

Re-drying of the electrode possible at 250 – 300°C for min. 2 h if necessary.

Metal recovery approx. 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.

Scaling temperature approx. 850°C (air)

Approvals

CE