

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9
G 25 9 4 N L	ER2594

Characteristics and typical fields of application

Solid wire of G 25 9 4 N L / ER2594 type with intentionally added W and Cu for welding superduplex steel and equivalent steel grades such as 1.4410 / UNS S32570, 1.4507 / UNS S32550 and 1.4501 / UNS S32760. Can also be used for joints between superduplex and austenitic alloys or carbon steels. For welding of duplex type 1.4462 / UNS S32205 if extra high corrosion resistance is required. The properties of the weld metal match those of the parent metal, offering excellent resistance to stress corrosion cracking and localized corrosion in chloride containing environments. Pitting resistance is in accordance with ASTM G48A Methods A, B and E (> 40°C). To minimize pore formation Ar/He shielding gas mixtures with max. 0.5% CO₂ can be used.

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	W	N	Cu	PRE _N	PRE _W	FN
wt.-%	0.02	0.35	0.9	25.5	9.5	3.8	0.6	0.22	0.5	> 41.5	43	45

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	-50°C	
	MPa	MPa	%			HB
u	600 (≥ 550)	830 (≥ 620)	27 (≥ 18)	140 (≥ 80)	100 (≥ 47)	280

u untreated, as-welded – shielding gas Ar + 30% He + 0,25% CO₂

Operating data

	Polarity	DC+	Dimension mm
	Shielding gas (EN ISO 14175)	M12 max. 0.5% CO ₂ Z-ArHeC-30/0,25	0.8
			1.0
			1.2

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

Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1100 – 1150°C followed by water quenching.

Approvals

TÜV (19525)