

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 13 4 B 4 2	E410NiMo-15

Characteristics and typical fields of application

Basic coated, cored wire alloyed low-hydrogen electrode of E 13 4 B / E410NiMo-15 type for welding soft-martensitic and martensitic-ferritic rolled, forged, and cast steels. Mainly used in the construction of hydro turbines and compressors. Corrosion resistance similar to matching 13Cr(Ni)-steels. Thanks to an optimum balance of alloying components, the weld deposit shows good ductility, toughness and cracking resistance – despite the high strength. Excellent slag detachability, smooth bead appearance and low hydrogen weld metal (HD < 5 ml/100 g).

Base materials

1.4313 X3CrNiMo13-4, 1.4317 GX4CrNi13-4, 1.4407 GX5CrNiMo13-4, 1.4414 GX4CrNiMo13-4
 ACI Grade CA 6 NM
 UNS S41500

Typical analysis

	C	Si	Mn	Cr	Ni	Mo
wt.-%	0.03	0.3	0.6	12.2	4.5	0.5

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 HV ₁₀
				20°C	-20°C	-60°C	
u	800	950	16	35			370 – 395
a	680 (≥ 500)	910 (≥ 760)	18 (≥ 15)	70	60	55	270 – 315
a1	670 (≥ 500)	850 (≥ 760)	18 (≥ 15)	105			

u untreated, as-welded

a annealed, 600°C for 2 h / cooling in air

a1 quenched + tempered, 950°C for 0.5 h / cooling in air + 600°C for 2 h / cooling in air

Operating data

	Polarity	DC+	Dimension mm	Current A
	Electrode identification	FOX CN 13/4 SUPRA 410NiMo-15 E 13 4 B	2.5 × 300	55 – 80
			3.2 × 350	90 – 110
			4.0 × 350	120 – 145
			5.0 × 450	140 – 200

Preheating and interpass temperatures of heavy-wall components 100 – 130°C.

Maximum heat input 1.5 kJ/mm.

Re-drying at 300 – 350°C for min. 2 h if necessary.

Post-weld heat treatment at 580 – 620°C.

Metal recovery approximately 103%.

Approvals

TÜV (01581), CE