BÖHLER FOX CN 13/4

Stick electrode, high-alloyed, soft-martensitic stainless

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 13 4 B 6 2	E410NiMo-15

Characteristics and typical fields of application

Basic coated, 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 yields very good ductility, toughness and cracking resistance despite the high strength. Excellent operating characteristics with easy slag removal, smooth bead appearance and low hydrogen content in the weld metal (HD < 5 ml/100 g). The Ø 2.5 and 3.2 mm electrodes can be used for welding in all positions apart from vertical down. Higher recovery rate and better re-striking properties than BÖHLER FOX CN 13/4 SUPRA.

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, J91540

Typical analysis

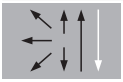
	C	Si	Mn	Cr	Ni	Mo
wt.-%	0.035	0.3	0.5	12.2	4.5	0.5

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
	MPa	MPa	%	20°C	–20°C	–60°C	HV_{10}
u	890	1090	12	33			401
a	680 (≥ 500)	910 (≥ 760)	17 (≥ 15)	66	55	50	301
a1	670 (≥ 500)	850 (≥ 760)	18 (≥ 15)	95			

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 +
Electrode identification	FOX CN 13/4 410NiMo-15 E 13 4 B

Dimension mm	Current A
2.5 × 350	60 – 90
3.2 × 450	90 – 130
4.0 × 450	120 – 170
5.0 × 450	160 – 220

Preheating and interpass temperatures of heavy-wall components 100 – 130ºC.
Maximum heat input 1.5 kJ/mm. Post-weld heat treatment at 580 – 620ºC.
Re-drying at 300 – 350ºC for min. 2 h if necessary.
Metal recovery approximately 130%.

Approvals

TÜV (03232), CE