

Classifications

EN ISO 3581-A	AWS A5.4
E 20 25 5 Cu N L B 2 2	E385-15 (mod.)

Characteristics and typical fields of application

Basic (with rutile contents) electrode, core wire alloyed, for corrosion resisting high-molybdenum CrNi steels like 1.4539 / N08904. Recommended for highly corrosive environments encountered e.g. in the chemical industry, in flue gas desulphurisation and sea water desalination plants, as well as in cooling and power plants using brackish or sea water. Particularly recommended for steels containing up to 5 % molybdenum. The above average molybdenum content (6.5 %) is characteristic to BÖHLER FOX CN 20/25 M, thus compensating for segregation in high molybdenum alloyed weld metals.

The fully austenitic weld metal possess a marked resistance towards pitting and crevice corrosion in chloride containing media. Highly resistant against Sulphur-, Phosphorus-, Acetic- and Formic acid, as well as sea- and brackish water. Caused from the low C-content of the weld metal, the risk of intergranular corrosion can be avoided. The high Ni-content in comparison to standard CrNi-weld metals leads to high resistance against stress corrosion cracking.

It is advisable to grind out the end craters of root passes. For root pass welding it is expedient to apply the GTAW process using BÖHLER CN 20/25 M-IG.

Base materials

Same-alloyed high-Mo Cr-Ni-steels
1.4539 X1NiCrMoCu25-20-5, 1.4439 X2CrNiMoN17-13-5, 1.4537 X1CrNiMoCuN25-25-5
UNS N08904, S31726

Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Ni	Mo	Cu	N		PRE _N
wt-%	≤ 0.04	0.4	3.8	20.0	25.0	6.3	1.4	0.14		≥ 45

Mechanical properties of all-weld metal

Condition	Yield strength R _{p0,2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	-269 °C
u	440 (≥ 320)	650 (≥ 510)	35 (≥ 25)	75	42 (≥ 32)

u untreated, as welded

Operating data

	Polarity: DC (+)	Redrying if necessary: 250 – 300 °C, min. 2 h	Electrode identification: FOX CN 20/25 M E 20 25 5 Cu N L B	Ø (mm)	L mm	Amps A
				2.5	300	60 – 80
				3.2	350	80 – 100
				4.0	350	100 – 130

Weaving width max. 2x core wire diameter. Arc should be kept short. End crater grinding is highly recommended. The electrode can be used in all position except vertical down. Preheating and post weld heat treatment are not required for the weld metal. The interpass temperature should not exceed 150 °C.

Approvals

TÜV (4882.), Statoil, SEPROZ, CE