

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 20 25 5 Cu N L R 3 2	E385-17 (mod.)

Characteristics and typical fields of application

Rutile-coated core-wire alloyed stick electrode of type E 20 25 5 Cu N L R / E385-17 (mod.) for highly molybdenum-alloyed austenitic stainless steels such as 1.4539 / UNS S08904. Used in highly corrosive environments encountered in e.g. sulfur and phosphorus production, pulp & paper industry, flue gas desulfurization plants; desalination plants, fertilizer production and petrochemical industry; acetic and formic acid production, in pickling plants as well as heat exchangers and power plants using brackish or seawater. Very high pitting resistance equivalent (PRE_n ≥ 44). Over-alloyed in molybdenum (6.2 wt.-%) to compensate weld metal segregation and improve local corrosion resistance. The fully austenitic weld metal possesses high resistance to pitting and crevice corrosion in chloride containing media. Low C-content makes the weld metal resistant to intergranular corrosion and high Ni-content results in high resistance to stress corrosion cracking. Excellent operating characteristic and easy handling in all positions, except vertical down. The weld metal shows good slag detachability as well as smooth, fine rippled beads with no residuals.

Base materials

1.4505 X4NiCrMoCuNb20-18-2, 1.4506 X5NiCrMoCuTi20-18, 1.4537 X1CrNiMoCuN25-25-5, 1.4538 X2NiCrMoCuN20-18, 1.4539 X1NiCrMoCu25-20-5, 1.4586 X5NiCrMoCuNb22-18
UNS S31726, S08904, N08904
ANSI 904L

Typical analysis


	C	Si	Mn	Cr	Ni	Mo	N	Cu	PRE _n
wt.-%	0.03	0.7	1.7	20.1	25	6.2	0.17	1.4	≥ 44

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength	Tensile strength	Elongation A	Impact energy ISO-V KV J		
	R _{p0.2}	R _m	(L ₀ =5d ₀)	20°C	-60°C	-196°C
u	460 (≥ 320)	680 (≥ 510)	35 (≥ 25)	70	55	33 (≥ 32)

u untreated, as-welded

Operating data

	Polarity	DC+ / AC	Dimension mm	Current A
	Electrode identification	FOX CN 20/25 M-A E 20 25 5 Cu N L R	2.5 × 300	50 – 80
	Redrying	250 – 300°C min. 2 h if necessary	3.2 × 350	80 – 110
			4.0 × 350	100 – 135

Suggested heat input is max. 1.5 kJ/mm and interpass temperature max. 150°C.

Preheating and post-weld heat treatment generally not needed. Avoid weaving more than two times the core wire diameter during welding. Keep the arc short and grind out root pass end craters.

TIG welding can be used for the root pass using Thermanit 20/25 Cu.

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

Approvals

TÜV (06634), CE