

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 18 8 Mn B 2 2	E307-15 (mod.)

Characteristics and typical fields of application

Basic coated, core wire alloyed austenitic electrode of E 18 8 Mn B / E307-15 type for welding and cladding in all positions except vertical down. Versatile electrode for numerous applications – welding of "hard-to-weld" steels, dissimilar welding as well as repair and maintenance. For tough buffer and intermediate layers for cladding of rails and switches, valve seats and in hydropower plants. The weld metal offers exceptionally high ductility and elongation together with outstanding crack resistance. Good resistance to embrittlement when operating at service temperatures from –100°C up to 650°C. The weld metal work hardens and offers good resistance to cavitation. The weld metal is resistant to scaling up to 850°C, but at temperatures above 500°C there is not sufficient resistance to sulfurous combustion gases. The weld deposit offers high ductility, elongation and resistance to hot cracking, also after high dilution of "hard-to-weld" steels.

Base materials

Dissimilar joints, tough buffer and intermediate layers prior to hardfacing, 14Mn-steels, 13 – 17% Cr and heat resistant Cr and austenitic steels up to 850°C, armor plates, high carbon and quenched and tempered steels, surfacing of gears, valves, turbine blades, etc. For welding of unalloyed / low-alloyed or Cr-steels with high-alloyed Cr and CrNi-steels. Welding of austenitic high manganese steels and with other steels.

Typical analysis

	C	Si	Mn	Cr	Ni
wt.-%	0.09	0.7	6.5	18.6	8.8

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	–40°C	–110°C
u	460 (≥ 350)	640 (≥ 500)	39 (≥ 25)	90	70	34 (≥ 32)

u untreated, as-welded

Operating data

	Polarity	DC+	Dimension mm	Current A
	Electrode identification	FOX A 7 / E 18 8 Mn B		2.5 x 300
			3.2 x 350	80 – 100
			4.0 x 350	100 – 130
			5.0 x 450	140 – 170
			6.0 x 450	160 – 200

Preheat, interpass temperature and post-weld heat treatment as required by the base metal.

Approvals

TÜV (06786), DB (30.014.24), DNV, CE