

Classifications

EN ISO 3581-A

E Z 16 6 Mo B 6 2 H5

Characteristics and typical fields of application

Basic coated high efficiency electrode of E Z 16 6 Mo B type for welding of soft-martensitic forged and cast steels. The high chromium content enhances the corrosion resistance in water, steam and seawater atmosphere. Main applications are found in turbines, pumps and compressor parts. Popular in hydro turbine engineering. The electrode shows very good features in regard to arc stability, weld puddle control, slag detachability and seam cleanliness. The \varnothing 2.5 and 3.2 mm electrodes can be used for welding in all positions apart from vertical down. Low hydrogen is an essential and necessary prerequisite of this product.

Base materials

Soft-martensitic forged steels and cast steels

1.4405 GX4CrNiMo16-5-1, 1.4313 X3CrNiMo13-4, 1.4317 GX4CrNi13-4, 1.4411 GX4CrNiMo 16-5-2, 1.4418 X4CrNiMo16-5-1

ACI Grade CA 6 NM / UNS J91540

248 SV

Typical analysis

	C	Si	Mn	Cr	Ni	Mo
wt.-%	0.03	0.3	0.6	15.5	5.8	1.2

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	-60°C	
u	520	1050	13	28	21	370
a	650	920	15	42	31	340
a1	640	920	16	48	30	330
a2	680	880	24	75	50	295

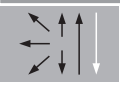
u untreated, as-welded

a annealed, 580°C for 4 h / cooling in air

a1 annealed, 590°C for 8 h / cooling in furnace down to 300°C then cooling in air

a2 solution annealed, 1030°C for 1 h / cooling in air + 590°C for 8 h / cooling in furnace down to 300°C then cooling in air

Operating data

	Polarity	DC+	Dimension mm	Current A
	Electrode identification	FOX CN 16/6 M-HD EZ16 6 Mo B	2.5 × 350	70 – 95
	Redrying	300 – 350°C / 2 h	3.2 × 450	110 – 140
			4.0 × 450	140 – 180
			5.0 × 450	180 – 230

The interpass temperature should preferably be kept between 70°C and 120°C for welding. Low interpass temperature minimizes distortion and risk of cracks. Preheating normally not necessary.

Post-weld heat treatment depends on the base material requirements. It is common to perform an annealing at 540 – 590°C for 6 h (after the weld has cooled down to room temperature). To reduce the hydrogen content, soaking can be performed at 250°C for 2 h. This treatment should be started immediately after welding. A slow cooling rate is necessary.

Metal recovery approximately 135%.

Approvals

TÜV (19071), CE