

## MMA Electrodes Chromium-Molybdenum steels

Basic coated MMA electrode for welding creep resistant and high-pressure hydrogen resistant steels in the fabrication of pressure vessels, boilers and pipes, for operating temperatures of up to +600 °C. Weld deposit features high toughness properties and is largely insensitive to in-service embrittlement, proven by simulated heat treatment STC = step cooling. Low X- and J-factors (X max. 15 ppm; J max. 150).

Classification	
AWS	A5.5: E9018-B3-H4
EN	1599: E CrMo 2 B 42 H5

Approvals	Grades
TÜV	

see Appendix, Classification Society Approvals, for details pag. 521

### Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.09	0.50	0.30	≤ 0.012	≤ 0.010	2.40	-	1	-	-	-	-

### All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm <sup>2</sup>	Tensile Strength N/mm <sup>2</sup>	Elongation A5 (%)	Impact Energy ISO - V (J) - 30 °C	Hardness
PWHT 690 °C x 17 h/air	≥ 400	550-650	≥ 22	≥ 100	-
PWHT 690 °C x 17 h/air +STC	≥ 400	550-650	≥ 22	≥ 70	-

### Materials

10CrMo9-10, 12CrMo9-10; A387 Gr.22, Cl 1 and 2, A 182 Gr.F 22, A 336 Gr.F22

### Storage and redrying

Keep dry and avoid condensation.

HD ≤ 5: Re-dry at 340-360 °C for 2 hours, 5 times max.

### Current condition and welding position

DC+



### Packaging data

Diameter (mm)	Length (mm)	Current (A)	Electrode average weight (g)	Weld metal weight per electrode (g)
2,5	300	65-95	19,7	11,5
3,2	350	90-130	37,5	21,5
4,0	350	125-165	53,0	31,0
5,0	450	170-220	109,7	70,0