

MMA Electrodes Chromium-Molybdenum steels

Basic coated MMA electrode producing an extremely low hydrogen weld metal, designed for welding creep resistant and high-pressure hydrogen resistant steels used in the fabrication of pressure vessels, boilers and pipes, with operating temperatures of up to +600 °C. Weld metal features high toughness properties and is largely insensitive to in-service embrittlement, proven by simulated heat treatment STC = step cooling. Very low X- and J-factor (X max. 15ppm ; J max. 120ppm).

Efficiency 100%.

Classification	
AWS	A-5.5: E9015-B3 H4
EN	1599: E CrMo2 B 22 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
0.10	0.70	0.25	≤ 0.010	≤ 0.010	2.30	-	1.10	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) - 40 °C	Hardness
PWHT 690 °C x 8 h	≥ 400	550-650	≥ 22	≥ 80	-
PWHT 690 °C x 8 h + STC	≥ 400	550-650	≥ 22	≥ 60	-

Materials

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

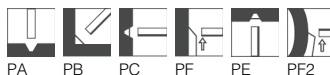
Storage and redrying

Keep dry and avoid condensation.

HD ≤ 5: Re-dry at 400-420 °C for 1 hour, once only.

Current condition and welding position

DC+



Packaging data

Diameter (mm)	Length (mm)	Current (A)	Electrode average weight (g)	Weld metal weight per electrode (g)
3,2	350	85-130	33,5	20,0
4,0	450	140-180	60,2	36,0
5,0	450	180-230	94,9	57,0