

## Classifications

EN ISO 3580-A	EN ISO 3580-B	AWS A5.5	AWS A5.5M
E CrMo91 B 4 2 H5	E6215-9C1MV H5	E9015-B9	E6215-B9

## Characteristics and typical fields of application

Basic core wire alloyed electrode suited for high temperature martensitic 9 – 12 % chromium steels, in turbine and boiler fabrication and in the chemical industry especially for T 91 and P91 steels and operating temperatures up to +620 °C (approved up to +650 °C). High creep rupture strength and good toughness properties under long term stresses. Low hydrogen content.

The electrode is suitable in all positions except vertical down. It features excellent striking and re-striking properties.

## Base materials

Similar alloyed creep resistant steels

1.4903 X10CrMoVNb9-1, GX12CrMoVNbN9-1

ASTM A 335 Gr. P91, A 336 Gr. F91, A 369 Gr. FP91, A 387 Gr. 91, A 213 Gr. T91

## Typical analysis of all-weld metal (wt.-%)

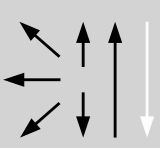
	C	Si	Mn	Cr	Ni	Mo	Nb	V	N
wt-%	0.10	0.2	0.6	8.5	0.5	1.0	0.06	0.2	0.04

## Mechanical properties of all-weld metal

Condition	Yield strength R <sub>e</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact work ISO-V KV J
	MPa	MPa	%	+20 °C
a1	<b>580</b>	<b>710</b>	<b>19</b>	<b>75 (≥ 47)</b>

a1 annealed, 760 °C/2h / furnace down to 300 °C/air

## Operating data

	Polarity: DC (+)	Redrying if necessary: 300 – 350 °C / min. 2 h	Electrode identification: FOX C 9 MV 9015-B9 E CrMo91 B	ø (mm)	L mm	Amps A
				2.5	250	60 – 80
				3.2	350	90 – 120
				4.0	350	110 – 150
				5.0	450	150 – 210

Preheating and interpass temperature 200 – 300 °C. After welding the joint should be cooled down below 80 °C to finish the martensite transformation. A cooling down to room temperature is possible up to a wall thickness of 45 mm. In case of greater wall thickness or complex components the possibility of residual stresses must be considered.

The following post weld heat treatment is recommended: annealing 760 °C/min. 2h, max. 10 h, heating and cooling rates up to 550 °C max. 150 °C/h, above 550 °C max. 80°C/h.

For optimised toughness values a welding technology should be applied which produces thin welding layers (app. 2 mm).

## Approvals

TÜV (6762.), SEPROZ, CE