

Classifications

EN ISO 3580-A	AWS A5.5 / SFA-5.5
E Z CrMo2V B 4 2 H5	E9015-G

Characteristics and typical fields of application

BÖHLER FOX CrMo 2V is a core wire alloyed electrode with basic coating for welding of 2.25Cr-1Mo-0.25V steels. The weld metal exhibits a bainitic microstructure with favorable mechanical properties in tempered condition. The range of application covers joint welding of similar alloyed creep resistant steel for the fabrication of thick walled pressure vessel in the petrochemical industry. FOX CrMo 2V is approved for application under creep condition at design temperatures up to 550 °C. Impact energy is excellent down to temperatures < -30 °C. Due to the low content of residual and tramp elements the weld metal offers a Bruscato factor < 15 ppm. Thus, being resistant to temper embrittlement and complies with the requirements on step-cooling testing. The optimized coating results in minimal moisture pick up and guarantees low level of diffusible hydrogen in the weld metal.

Base materials

Similar alloyed creep resistant steels and castings like
 2.25Cr-1Mo-0.25V steels;
 1.7703 – 13CrMoV9-10
 ASTM SA 542 type D Cl. 4a; SA 832 Gr. 22V; SA 336 Gr. F22V; SA 541 Gr. 22V; SA 182 Gr. 22V

Typical analysis


	C	Si	Mn	Cr	Mo	V	Nb
wt.-%	0.09	0.25	0.75	2.5	1.0	0.25	0.01

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	-20 °C	-30 °C	-40 °C
	MPa	MPa	%				
T1	550 (415-620)	660 (585-760)	19 (18)	140	100	70 (54)	55
T2	490 (415-620)	605 (585-760)	22 (18)			120 (54)	

T1: tempered (705 °C / 8 h)
 T2: tempered (705 °C / 32 h)

Operating data

	Polarity	DC +	Dimension mm	Current A
	Electrode identification	FOX CrMo 2V / E ZCrMo2V B / E9015-G		3.2 × 350
Redrying	300 -350 °C / 2 h		3.2 × 450	100 - 145
			4.0 × 350	100 - 145
			4.0 × 450	140 - 190
			4.0 x 450	140 - 190
			5.0 × 450	160 - 240
			5.0 x 450	160 - 240

Preheating, interpass temperature, and post-weld heat treatment as required by the base metal. Preheating can normally be recommended being in a range of 180 to 250 °C . Common post weld heat treatments are carried out at 705 °C for 8 h. Before cooling down to roomtemperature the weldment should be intermediate stress relieved in a temperature range from 650 to 680 °C or a dehydrogenating treatment at 350 °C for 4 h should be carried out direct from welding heat in order to minimize the risk for cold cracking. In order to optimize impact energy values a welding technique aiming on small layer thickness should be applied.

Approvals

VdTÜV (10230)