Selectarc B691NM

Basic coated Electrode
For creep resisting steels

Classification

AWS A5.5	:	E9015-B9	EN 1599	:	E CrMo91 B 4 2 H5
AWS A5.5M	:	E6215-B9	ISO 3580-A	:	E CrMo91 B 4 2 H5

Description & Applications

Low hydrogen basic coated electrode for welding creep resistant steels of similar chemical composition (known as P91) used at service temperatures up to 650°C. Especially designed for welding castings which require Mn+Ni<1.0%. The deposit is resisting to temperature and creep up to 650°C and highly resistant to hot gas and overheated steam.

Main applications: For power plants, heat exchangers, tubes, steam boilers,...

Base materials

Plates and pipes for boiler and pressure vessels

Mat. N°	EN	UNS	ASTM
1.7386	X12CrMo9-1	K91560	A187 Gr F9 ; A336 Gr F9; A335 Gr P9
1.7389	GX12CrMo10-1	J84090	A217 C12
1.4903	X10CrMoVNb9-1		Â199 gr. T91 ; A335 gr. P91 ; A213 gr T91

Typical Weld Metal Composition (%)

C	Si	Mn	Cr	Ni	Mo	Cu	V	Nb	N	P	S	Mn+Ni
0.09	0.25	0.45	8.9	0.45	1.0	0.04	0.2	0.05	0.04	0.01	0.008	<1,0

All Weld Metal Mechanical Properties *

$R_{p0,2}$ (MPa)	R_m (MPa)	A_5 (%)	KV (J)
620	730	18	+20°C 60

* After heat treatment at 760°C/2h

Welding Current & Instructions

Electrode	ØxL (mm)	2,5x300	3,2x350	4,0x450	5,0x450
Current	(A)	80	115	150	180

Redrying: 1h at 300°C, if necessary. Preheating of joints to weld at 200°C. Interpass temperature: 200-300°C. Slow air cooling to a temperature below 80°C followed by an annealing at 760°C / 2-6h, then slow cooling. To achieve improved impact resistance, thin layers with about 2mm thickness should be welded.

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FT En-871-190305