

## 9018-B9 (P92)

**CATEGORY** SMAW Stick Electrodes

**TYPE** Basic, Cr and Mo-alloyed electrode for heat resistant steels T/P92

**APPLICATIONS** Headers, main steam piping and turbine casings, in fossil fuelled power generating plants. Oil refineries and coal liquefaction and gasification plants. Preheat and Interpas temperature 200°C - 300°C.

**PROPERTIES** 9018-B9 (P92) is designed to weld equivalent 'type T/P92 CrMo steels modified with 1,6% Tungsten to match the basemetal creep properties. These consumables are specifically intended for high integrity structural service at elevated temperature so the minor alloy additions responsible for its creep strength are kept above the minimum considered necessary to ensure satisfactory performance. In this case, weldments will be weakest in the softened (intercritical) HAZ region of parent material, as indicated by so-called 'type IV' failure in transverse weld creep tests.

**CLASSIFICATION** AWS A 5.5: E 9018-B9  
EN ISO 3580-A: E ZCrMoWVNb 911B42 H5

**SUITABLE FOR** For matching T/P92, 9%Cr1.7%W0.5%Mo, creep resisting martensitic steels. X10CrWMoVNb 9 2, ASTM: A182 grade F92, A213 grade T92, A335 grade P92, A387 grade 92, 1.4901, NF 616

**APPROVALS** CE approved

**WELDING POSITIONS:**



**ANALYSES %**

C	Mn	Si	Cr	Ni	Mo	V	Nb	N	W
0.1	0.9	0.3	9.0	0.4	0.9	0.2	0.05	+	1.0

PWHT: 760°C/2hr, oven cooling till 300°C and then cooled on air.

**MECHANICAL PROPERTIES**

Heat Treatment	R <sub>p0,2</sub> (N/mm <sup>2</sup> )	R <sub>m</sub> (N/mm <sup>2</sup> )	A <sub>5</sub> (%)	Impact Energy (J) ISO-V			Hardness HRc / HV
				+20°C	-40°C	-60°C	
PWHT 760°C/2hr	>520	620-850	>17	>50			

**WELDING PARAMETERS / PACKING**

D (mm)	Welding Parameters			Packing		
	Length (mm)	Current (A)	kg / can	kg / 6pack	kg / 1000	
2.5	300	65-85	2.5	15	19.8	
3.2	350	100-130	2.6	15.6	36.4	
4.0	450	140-180	3.1	18.6	66.7	
5.0	450	180-230	3.1	18.6	101.9	

**REDRYING TEMPERATURE** 400C / 1hr