

## AA 90S-B9

**CATEGORY** FCAW Flux-Cored

**TYPE** Metal core wire for heat and creep resistant applications

**APPLICATIONS** Headers, main steam piping and turbine casings, in fossil fuelled power generating plants. Oil refineries and coal liquefaction and gasification plants.

**PROPERTIES** AA 90S-B9 is designed to weld equivalent 'type 91' P91 9CrMo steels modified with small additions of niobium, vanadium and nitrogen to give improved long term 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	5.28 : E90C-B9 A5.28M : E90C-B9
EN ISO	17634-B:2006 T69T15-0M-9C1MV

**SUITABLE FOR** A 213 T91 (seamless tubes), A 335 P91 (seamless tubes), A 387 Gr91 (plates), A 182 / A336 F91 (forgings), X10CrMoVnNb 91, 1503 Gr91, AFNOR NF A-49213/A-49219 Gr TU Z 10, CDVnB 09-01

**APPROVALS** CE approved

**WELDING POSITIONS:**



**(WELD METAL WT %)**

C	Mn	Si	Cr	Ni	Mo	Nb	V	N	Cu	S	P	Al
0.1	1.0	0.30	9	0.30	1.0	0.05	0.20	0.05	0.05	0.008	0.01	0.03

**MECHANICAL PROPERTIES**

Heat treatment Typical	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 HB
				+20C	-40°C	-60C	
SR (gas M21)	650	780	17	27			260
SR (gas Ar/He/Co <sub>2</sub> )	650	780	17	35			260

SR: stress relieved, 760°C / 2h

**WELDING PARAMETERS PACKING**

Welding Parameters			Packing		
D (mm)	Voltage (V)	Current (A)	Spools	kg / spool	kg / pallet
1,2	28	260	K-300	15	1080

**REDRYING TEMPERATURE** 150°C/24hr

**GAS ACC. EN ISO: 14175:** M12 / M13