



MIG F691

Old reference: MIG 90SB9

Classification

AWS A5.28 : ER90S-B9

ISO 21952-A : G CrMo91

Description & Applications

Copper coated solid wire for gas (Ar + CO₂) metal arc welding of creep resistant steels alloyed Chromium and Molybdenum (9% Cr - 1% Mo) like P91 applied at service temperature up to 650°C. Creep resistance improved due to Niobium (Nb), Vanadium (V) and Nitrogen (N) addition.

Main applications: Chemical and petrochemical industry...

Base materials:

Creep resisting steels :

EN	ASTM
X10CrMoVNb 9-1	A 182 gr F9
	A 199 gr T9
	A 200 gr T91
	A 213 gr T91
	A 217 gr C12A
	A 234 gr WP91
	A 335 gr P91
	A 387 gr 91

Typical Chemical Composition (%)

	C	Si	Mn	Cr	Ni	Mo	Cu	Nb	Al	V	N	P	S	O/T
Min	0.07	0.15	0.4	8.00	0.40	0.85		0.03		0.15	0.03			
Max	0.13	0.50	1.20	10.50	0.80	1.20	0.20	0.10	0.04	0.30	0.07	0.010	0.010	0.50
Type	0.09	0.25	0.60	8.8	0.65	0.95	0.03	0.06	0.005	0.20	0.05	0.007	0.002	<0.50

All Weld Metal Mechanical Properties*

	R _e (MPa)	R _m (MPa)	A ₅ (%)	KV (J)
Min	415	620	17	+20°C >47
Max				
Type	630	720	18	+20°C 60

* After PWHT at 760°C/2h

Welding Current & Instructions

Welding mode	Wire Ø (mm)	Welding parameters		Shielding Gas
		Current (A)	Voltage (V)	
GMAW = +	0.8	60 - 200	16 - 28	ISO 14175: M12 (Ar/CO ₂) 12-15 l/min
	1.0	80 - 260	17 - 32	
	1.2	100 - 360	18 - 34	
	1.6	130 - 450	19 - 38	

Preheating and interpasses temperature: 250-320°C

FT En-MF11-191113

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