TIG F691

Old reference: TIG 90SB9

Classification

AWS A5.28 : ER90S-B9 ISO 21952-A : W CrMo91

Description & Applications

Copper coated solid rod for GTAW of creep resistant steels alloyed with Chromium and Molybdenum (9% Cr - 1% Mo) like P91 applied at service temperature up to 650°C. Creep resistance improved due to Niobium (Nb), Vanandium (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	V	N	Al	P	S
Min	0.07	0.15	0.40	8.0	0.40	0.85		0.03	0.15	0.03			
Max	0.13	0.50	1.20	10.5	0.80	1.20	0.20	0.10	0.30	0.07	0.04	0.010	0.010
Type	0.09	0.25	0.60	8.8	0.65	0.95	0.03	0.06	0.20	0.05	0.005	0.007	0.002

All Weld Metal Mechanical Properties (*)

	R_e (MPa)	R_m (MPa)	A_5 (%)	KV (J)	
Min	415	620	17	+20°C	47
Max					
Type	670	770	19	+20°C	100

* After PWHT at 760°C/2h

Welding Current & Instructions

Welding mode	Shielding Gas
TIG = -	ISO 14175: I1 (Ar): 6-12 l/min Back shielding : I1 (Ar) / N1 (Nitrogen) : 3-6 l/min

Preheating and interpasses temperature: 250-300°C

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