

WSG P91							
Classification DIN EN ISO				Classification AWS			
21952-A WCrMo91				A5.28 ER90S-B9			
Approvals				Material No.			
TÜV 11950.00, CE				1.4903			
Characteristics and application							
TIG/GTAW rod for high temperature, creep resistant, modified 9%Cr1%Mo martensitic steel (T91/P91). T91/P91 steel is commonly used at service temperatures up to 600°C. V, Nb and N additions provide this 'creep strength enhanced ferritic' (CSEF) alloy with improved high temperature creep resistance compared to standard CrMo creep resistant alloys. Alloy T91/P91 is widely used in the power generating industry for fossil fuel ultra-super-critical (USC) power plant boilers and turbines; the alloy is also finding applications in the chemical and oil and gas industries.							
Base materials							
For matching P91, 9%Cr1%Mo modified, creep resisting martensitic steels. X10CrMoVNB 9 1 ASTM: A182/A336 F91, A213 T91, A217 C12A, A234 WP91, A335 P91, A387 91							
Typical analysis in %							
C	Si	Mn	Cr	Ni	Mo	V	Nb
0,10	0,25	0,50	8,70	0,60	1,00	0,20	0,04
Typical heat treatment							
Preheat temperature: 200°C Interpass temperature: max. 300°C PWHT: 760°C							
Mechanical properties of the pure weld metal							
Yield strength in Mpa		Tensile strength in Mpa		Elongation in %		Charpy-V-Value (ISO-V) in J	
≥ 520		≥ 620		4d/5d: ≥16		RT ≥ 47	