DAIKOWT 2CrMo

GTAW

CREEP RESISTING STEELS
2Cr1Mo

DESCRIPTION

Rod for 2¼% Cr-1% Mo steel resistant to creep

Rod developed to ensure continuous service at high temperatures up to about 600 °C, specifically for use in steam generation power plants. Ideal for welding pipes, valve bodies, turbine castings, and boiler superheaters, it also offers excellent resistance to corrosion in the presence of sulfur-containing crude oil in the range of 250–450 °C. Used in chemical and petrochemical industries, it guarantees high performance against hydrogen attack, being employed in hydrocrackers, coal liquefaction plants, and ammonia (NH_3) pressure vessels up to 450 °C.

SPECIFICATIONS

EN ISO 21952-B	W 62 I1 2C1M	**AWS A5.28**	ER90S-B3
Shielding	I1	**Positions**	PA, PB, PC, PD, PE, PF
Current	DC-	**Packaging Type**	5kg carton tube

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	4

CHEM. COMP. %

C	0.08
Mn	0.6
Ni	0.08
Cr	2.4
P	0.01
S	0.01
Mo	0.8
Si	0.5
Cu	0.15

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	620	640
Yield strength $R_{p0.2}$ MPa	400	540
Elongation A (L_0=5d_0) %	15	21
Impact Charpy ISO-V	47J @ 20°C	150J @ 20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1.6 mm	2.4 mm
Ampere	95A - 135A	145A - 205A
Voltage	-	-
Packaging	Ø 1,2÷3,2mm	Ø 1,2÷3,2mm
Packaging Type	5kg carton tube	5kg carton tube

NOTES

Preheat and interpass temperature 200 to 300 °C, post-weld heat treatment of test piece 690 to 750°C for 1h.

DAIKO

2Cr1Mo

DESCRIPTION

APPLICATION

The 2Cr1Mo consumables are designed to ensure durability and performance at high temperatures, up to 600 °C. These materials are widely used in steam power plants, essential for the construction of pipework, turbine casings, steam chambers, valve bodies, and boiler superheaters. Additionally, they are used in refineries for their resistance to corrosion caused by sulfur-containing crude oil, effectively operating at temperatures between 250 and 450 °C. In the chemical and petrochemical industry, these materials are crucial for resisting hydrogen attack. They are employed in the manufacture of hydrocrackers, coal liquefaction plants, and NH_3 pressure vessels operating up to 450 °C. Under welding conditions, the materials offer deposits with a hardness of 300 HV, ideal for build-up or hardfacing, metal-to-metal wear resistance, heavy impact, and repairs of P20 tool steel. A minimum preheat and interpass temperature of 250 °C is recommended, increased up to 300 °C for sections of considerable thickness, maintaining the temperature throughout the welding cycle and subsequently. Unless otherwise specified, it is imperative to perform post-weld heat treatment (PWHT), generally carried out at 690 °C, with duration varying based on the section thickness.

ALLOY TYPE

2¼Cr-1Mo alloyed steel consumables for elevated temperature service.

MICROSTRUCTURE

After PWHT, the microstructure consists of tempered bainite.

MATERIALS

EN W.Nr.: 11 CrMo 9-10 (1.7383), 10 CrMo 9-10 (1.7380), GS-18CrMo 9 10 (1.7379), GS-12CrMo 9 10 (1.7380), 6CrMo 9 10 (1.7385), 12CrMo 9 10 (1.7375)
ASTM: A387 Gr 21&22, A182 F22, A217 WC9, A234 WP22, A199 T21,T22, A200 T21,T22, A335 P22, A234 WP22