



# DAIKOWM 2CrMoS



CREEP RESISTING STEELS  
2Cr1Mo

## DESCRIPTION

### Solid wire for creep resisting 2¼Cr-1Mo steels

Similar to ER90S-B3, this wire rod has a higher content of Si and Mn in order to improve weldability and quality of the weld metal. It is designed for prolonged elevated temperature service up to about 600°C, especially in steam generation power plants (piping, valve bodies, turbine casting, boiler superheaters...). Suitable for corrosion resistance to sulphur bearing crude oil at 250-450° C. Used in chemical and petro-chemical industries for resistance to hydrogen attack in fabrication of hydrocrackers, coal liquefaction plant and NH3 pressure vessel operating at up to 450° C.

## SPECIFICATIONS

EN ISO 21952-A	G CrMo 2 Si	AWS A5.28	ER90S-G
Shielding	M20, M21	Positions	PA, PB, PC, PD, PE, PF
Current	DC+	Packaging Type	Drums, B300, D200 and D100 spools.

## ASME QUALIFICATIONS

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

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
C	0.07	Tensile strength R <sub>m</sub> MPa	620	640
Mn	1	Yield strength R <sub>p0.2</sub> MPa	400	540
Ni	0.08	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	15	21
Cr	2.5	Impact Charpy ISO-V	47J @ 20°C	150J @ 20°C
P	0.01	Impact Charpy ISO-V	-	-
S	0.01			
Mo	0.9			
Si	0.7			
Cu	0.15			
		<b>WELDING PARAMETERS</b>	1.0 mm	1.2 mm
		Ampere	180A - 240A	190A - 250A
		Voltage	22V - 29V	26V - 30V
		Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
		Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.





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## 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<sub>3</sub> 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

