



DAIKOWM 1CrMoS



CREEP RESISTING STEELS
1CrMo

DESCRIPTION

Solid wire for creep resisting 1¼Cr- ½Mo steels

Wire rod with higher content of Si and Mn in order to improve weldability and quality of the weld metal. Designed for prolonged elevated temperature service up to about 550°C, especially in steam generation power plants. 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 1 Si	AWS A5.28	ER80S-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)	3

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
C	0.08	Tensile strength R _m MPa	550	620
Mn	1	Yield strength R _{p0.2} MPa	0	510
Ni	0.04	Elongation A (L ₀ =5d ₀) %	0	22
Cr	1.2	Impact Charpy ISO-V	-	100J @ 20°C
P	0.008	Impact Charpy ISO-V	-	-
S	0.01			
Mo	0.47			
Si	0.66			
Cu	0.15			
		WELDING PARAMETERS	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

These consumables are designed for long-term use at high temperatures, up to 550 °C. The main applications include power plant components operating with steam, such as pipes, turbine casings, steam chambers, valve bodies, and boiler superheaters. Some materials are also used in refineries, offering resistance to corrosion from sulfur-containing crude oil, with operating temperatures between 250 and 450 °C. Additionally, these materials are used in the chemical and petrochemical industries, providing resistance to hydrogen attack in the production of hydrocrackers, coal liquefaction plants, and NH₃ pressure vessels, operating up to 450 °C. In the as-welded condition, the materials offer deposits with a hardness of 300 HV, ideal for hardfacing, essential to withstand metal-to-metal wear and heavy impacts. A minimum preheat and interpass temperature of 200 °C is recommended, up to 300 °C for thicker sections, maintaining this temperature throughout the entire welding process and for a certain period afterwards. For most applications, it is essential to perform Post Weld Heat Treatment (PWHT), which generally occurs at a temperature of 690 °C, with duration varying based on material thickness.

ALLOY TYPE

1¼Cr-½Mo alloyed steel consumables for elevated temperature service.

MICROSTRUCTURE

After PWHT, the microstructure consists of tempered bainite.

MATERIALS

EN W.Nr.: 13CrMo 4-5 (1.7355), 13CrMo 4-4 (1.7335), 16CrMo 4-4 (1.7337), 11CrMo 5-5 (1.7339), GS-25CrMo 4 (1.7128), GS-17CrMo 5-5 (1.7357)

ASTM: A387 Gr 11 & 12, A182 F11 & F12, A217 WC6 & WC11, A234 WP11 & WP12, A199 T11, A200 T11, A213 T11 & T12, A335 P11 & P12

