

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

ISO 21952-A	G CrMo 1 Si	AWS A5.28	ER80S-G
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	M20, M21
Positions	PA, PB, PC, PD, PE, PF	Current	DC+

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	3

FERRITE

-

PREN

-

HARDNESS

-

CHEM. COMP. %

DEFAULT

C	0.08
Mn	1
Ni	0.04
Cr	1.2
P	0.008
S	0.01
Mo	0.47
Si	0.66
Cu	0.15

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R _m MPa	550	620
Yield strength R _{p0.2} MPa	0	510
Elongation A (L ₀ =5d ₀) %	0	22
Impact Charpy ISO-V	-	100J @ 20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

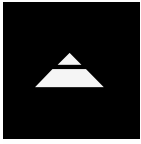
	1 mm	1.2 mm
Ampere	180A - 240A	190A - 250A
Voltage	22V - 29V	26V - 30V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.

V 01/2024



The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit www.daikowelding.com.





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APPLICATION

Designed for prolonged elevated temperature service up to 550°C, these consumables have primary applications in steam-generating power plants. These consumables excel in various components like piping, turbine castings, steam chests, valve bodies, and boiler superheaters. They also provide corrosion resistance in refineries for sulfur-bearing crude oil (250-450°C) and resist hydrogen attack in chemical and petrochemical industries for hydrocrackers, coal liquefaction plants, and NH₃ pressure vessels (up to 450°C). In the as-welded state, these consumables yield a weld deposit with a useful 300HV hardness, suitable for build-up or hard surfacing to combat metal-to-metal wear and heavy impact. A minimum preheat and interpass temperature of 200°C is recommended, extending up to 300°C for thicker sections. It is crucial to maintain these temperatures throughout the welding cycle and for some time after the completion of welding. With the exception of specific applications, post-weld heat treatment (PWHT) is invariably necessary, typically at a temperature of 690°C, the duration of which depends on the thickness of the section.

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.

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