



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

ISO 21952-A	G CrMo 2 Si	AWS A5.28	ER90S-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)	4

FERRITE

Ferrite	-
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PREN

PREN	-
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HARDNESS

Hardness	-
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CHEM. COMP. %

CHEM. COMP. %	DEFAULT
C	0.07
Mn	1
Ni	0.08
Cr	2.5
P	0.01
S	0.01
Mo	0.9
Si	0.7
Cu	0.15

MECHANICAL PROPERTIES

MECHANICAL PROPERTIES	MIN	VARIANT
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

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.

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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

Engineered for extended high-temperature use, reaching up to 600°C, these consumables find primary applications in steam-generating power plants. They excel in various components, such as piping, turbine castings, steam chests, valve bodies, and boiler superheaters. Some also serve in refineries, ensuring corrosion resistance to sulfur-bearing crude oil within the range of 250-450°C. In the chemical and petrochemical industries, they resist hydrogen attack during the fabrication of hydrocrackers, coal liquefaction plants, and NH₃ pressure vessels (up to 450°C). In their as-welded state, these consumables yield a valuable 300HV hardness weld deposit suitable for build-up or hard surfacing, effectively countering metal-to-metal wear, heavy impact, and aiding in the repair of P20 mold steel. Maintaining a minimum preheat and interpass temperature of 250°C, rising to 300°C for thick sections, is crucial throughout the welding cycle and post-welding. Unless specified for unique applications, post-weld heat treatment (PWHT) is always necessary, typically at 690°C, with the duration contingent on 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), G5-18CrMo 9 10 (1.7379), G5-12CrMo 9 10 (1.7380), 6CrMo 9 10 (1.7385), 12CrMo 9 10 (1.7375).

ASTM: A387 Gr 21G22, A182 F22, A217 WC9, A234 WP22, A199 T21,T22, A200 T21,T22, A335 P22, A234 WP22.

