



DAIKOMCW 1CrMo



CREEP RESISTING STEELS
1CrMo

DESCRIPTION

Metal all position flux cored wire for 1/4Cr-1/2Mo creep resisting alloy for elevated temperature service

Metal core wire for prolonged elevated temperature service up to about 550°C, especially in steam generation power plants. Virtually spatter free in the spray-arc range. The weld profile is easily controllable making this wire well suited for gap bridging and positional welding. Used in chemical and petrochemical industries for resistance to hydrogen attack in fabrication of hydrocrackers, coal liquefaction plant and NH3 pressure vessel operating at up to 450° C applications.

SPECIFICATIONS

EN ISO 17634-A	T CrMo1 M M21 1 H5	AWS A5.28	E80C-B2H4
Shielding	M21	Positions	PA, PB, PC, PD, PE, PF, PG
Current	DC+	Packaging Type	B5300 spool

ASME QUALIFICATIONS

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

CHEM. COMP. %

C	0.06
Mn	1.1
Cr	1.2
P	0.02
S	0.02
Mo	0.5
Si	0.4
Cu	0.15

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R _m MPa	550	620
Yield strength R _{p0.2} MPa	470	460
Elongation A (L ₀ =5d ₀) %	17	18
Impact Charpy ISO-V	-	47J @ 20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1.2 mm	1.6 mm
Ampere	100A - 300A	160A - 420A
Voltage	16V - 28V	31V - 35V
Packaging	Ø 1,2÷1,6mm	Ø 1,2÷1,6mm
Packaging Type	B5300 spool	B5300 spool

NOTES

Preheat and interpass temperature 150 to 250 °C, post-weld heat treatment of test piece 660 to 700°C for 1h.



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DESCRIPTION

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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

