DAIKOWS 1CrMo

SAW

CREEP RESISTING STEELS
1CrMo

DESCRIPTION

Solid wire for creep resisting 1¼Cr- ½Mo steels

Wire rod 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. The wire has low levels of tramp elements (Sn, As, Sb and P) providing a low Bruscato Factor (X< 12 ppm) for temper embrittlement resistant applications.

SPECIFICATIONS

EN ISO 24598-A	S CrMo1 FB	**AWS A5.23**	EB2
Shielding	DAIKOFLUX 982	**Positions**	PA, PB, PC
Current	DC/AC	**Packaging Type**	K415 spool and drums.

ASME QUALIFICATIONS

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

CHEM. COMP. %	DEFAULT
C	0.06
Mn	0.8
Cr	1.2
P	0.01
S	0.01
Mo	0.5
Si	0.2
Cu	0.15

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	510	560
Yield strength $R_{p0.2}$ MPa	355	480
Elongation A (L_0=5d_0) %	20	24
Impact Charpy ISO-V	47J @ 20°C	50J @ -20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	2.4 mm	3.2 mm	4.0 mm
Ampere	350A - 450A	430A - 530A	480A - 580A
Voltage	27V - 31V	27V - 31V	27V - 31V
Packaging	Ø 2,0÷4,0mm	Ø 2,0÷4,0mm	Ø 2,0÷4,0mm
Packaging Type	K415 spool and drums.	K415 spool and drums.	K415 spool and drums.

NOTES

Preheat and interpass temperature 150 to 250 °C, post-weld heat treatment of test piece 660 to 700°C for 1h. SAW mechanical properties depend on wire/flux combination, refer to flux TDS.

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DESCRIPTION

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