



# G-TECH 1CrMo

SMAW

CREEP RESISTING STEELS

1CrMo

## DESCRIPTION

Basic coated electrode for creep resisting steels and cast steels up to 530°C

Designed for prolonged elevated temperature service up to about 530°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 petrochemical industries for resistance to hydrogen attack in fabrication of hydrocrackers, coal liquefaction plant and NH3 pressure vessel operating at up to 450° C. These electrodes have good weldability in all positions. Low spatter loss, good bead appearance. Ready striking and deslagging.

## SPECIFICATIONS

ISO 3580-A	E Cr Mo 1 B 32	AWS A5.5	E8018-B2
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC, PD, PE, PF	Current	DC+, AC

## ASME QUALIFICATIONS

F-No (QW432)	4
A-No (QW442)	3

## FERRITE

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

## PREN

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

## HARDNESS

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

## CHEM. COMP. %

### DEFAULT

C	0.08
Mn	0.8
Ni	0.05
Cr	1.25
P	0.015
S	0.01
Mo	0.6
Si	0.6
Cu	0.05

## MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R <sub>m</sub> MPa	550	680
Yield strength R <sub>p0.2</sub> MPa	460	580
Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	19	22
Impact Charpy ISO-V	-	100J @ 20°C
Impact Charpy ISO-V	-	-

## WELDING PARAMETERS

	2.5 mm	3.2 mm	4 mm	
Ampere	65A - 90A	90A - 130A	140A - 180A	190A -
Voltage	-	-	-	-
Packaging	45 pcs/kg	21 pcs/kg	14 pcs/kg	10 pcs/kg
Packaging Type	Carton box	Carton box	Carton box	Carton box

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](http://www.daikowelding.com).

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DESCRIPTION

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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 NH<sub>3</sub> 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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