



G-TECH Mo.B

SMAW

CREEP RESISTING STEELS

0.5Mo

DESCRIPTION

Basic coated electrode for creep resisting steels and cast steels up to 450°C

Designed for prolonged elevated temperature service up to about 450°C, especially in fabrication of vessel, pipework, and valve bodies. These electrodes have good weldability in all positions. Its basic coating ensures excellent positional welding characteristics with good gap bridging ability. The weld pool and slag are easy to control and facilitate the achievement of a clean bead surface even in narrow preparations and in root pass. Ready striking and deslagging.

SPECIFICATIONS

ISO 3580-A	E Mo B 42 H5	AWS A5.5	E7018-A1
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC, PD, PE, PF	Current	DC+, AC

ASME QUALIFICATIONS

F-No (QW432)	4
A-No (QW442)	2

FERRITE

Ferrite	-
---------	---

PREN

PREN	-
------	---

HARDNESS

Hardness	-
----------	---

CHEM. COMP. %

	DEFAULT
C	0.07
Mn	0.8
Ni	0.05
P	0.015
S	0.01
Mo	0.5
Si	0.6
Cu	0.05

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R _m MPa	490	680
Yield strength R _{p0.2} MPa	390	580
Elongation A (L ₀ =5d ₀) %	22	22
Impact Charpy ISO-V	-	90J @ -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.





0.5Mo

DESCRIPTION

CREEP RESISTING STEELS

0.5Mo

APPLICATION

Incorporating a nominal 0.5% Mo alloying element, this alloy delivers improved elevated temperature performance compared to C-Mn steels. It is utilized in crafting vessels and associated pipework, specifically designed for applications demanding exceptional creep rupture strength and ductility at temperatures up to approximately 450°C. The Mo content also enhances resistance to hydrogen attack during chemical process plant operations. These consumables exhibit favorable mechanical properties in both as-welded and stress-relieved weld metal, proving valuable in welding structural and general engineering steels for service in ambient or sub-zero temperatures. Notably related to higher-strength manganese-molybdenum alloyed steel consumables, the welding process involves preheat and interpass temperatures typically ranging from 100-250°C, depending on the thickness being welded and restraint. The post-weld tempering heat treatment (PWHT) temperature varies per code, ranging from 550°C to 720°C, with the most common range being 630-670°C. Some codes permit omitting PWHT for materials up to 20mm thick.

ALLOY TYPE

Ferritic creep resisting 0.5%Mo steels for elevated temperature service.

MICROSTRUCTURE

In the stress-relieved condition the microstructure consists of acicular ferrite with some tempered bainite.

MATERIALS

EN W.Nr.: 10028-2 gr. 16Mo3 (1.5415), 16Mo5 (1.5423), 10MnMo 4 5 (1.5424), 11MnMo 4 5 (1.5425), GS-22Mo 4 (1.5419).

ASTM: A335 gr. P1, A209 & A 250 gr. T1, A336 gr. F1, A204 gr. A, B, C, A217 gr. WC1, A352 gr. LC1.

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.

DAIKO