



# DAIKOFCW Mo.B



CREEP RESISTING STEELS

0.5Mo

## DESCRIPTION

### Basic flux cored wire for flat and horizontal position

Basic flux cored wire designed for prolonged elevated temperature service up to about 450°C for welding of low alloy and creep resistant steels. Application area includes boiler, pressure vessel, tanks, pipeline, and crane constructions as well as in structural steel engineering. It shows excellent weldability in flat and horizontal position, smooth and bright bead, very low spatter losses, easy to remove slag and exceptional mechanical properties even at low temperatures.

## SPECIFICATIONS

|                |                 |                  |                |
|----------------|-----------------|------------------|----------------|
| ISO 17634-A    | T 46 6 Mo B M 3 | AWS A5.36        | E80T5-M21P8-A1 |
| DIN            | -               | Werkstoff Number | -              |
| Certifications | -               | Shielding        | M21            |
| Positions      | PA, PB, PC      | Current          | DC+            |

## ASME QUALIFICATIONS

|              |   |
|--------------|---|
| F-No (QW432) | 6 |
| A-No (QW442) | 2 |

## FERRITE

|              |   |
|--------------|---|
| F-No (QW432) | 6 |
| A-No (QW442) | 2 |

## PREN

|              |   |
|--------------|---|
| F-No (QW432) | 6 |
| A-No (QW442) | 2 |

## HARDNESS

|              |   |
|--------------|---|
| F-No (QW432) | 6 |
| A-No (QW442) | 2 |

## CHEM. COMP. %

### DEFAULT

|    |      |
|----|------|
| C  | 0.06 |
| Mn | 1.4  |
| P  | 0.02 |
| S  | 0.02 |
| Mo | 0.5  |
| Si | 0.5  |
| Cu | 0.15 |

## MECHANICAL PROPERTIES

|   | MIN         | VARIANT     |
|---|-------------|-------------|
| Tensile strength R <sub>m</sub> MPa               | 550         | 620         |
| Yield strength R <sub>p0.2</sub> MPa              | 460         | 470         |
| Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) % | 17          | 20          |
| Impact Charpy ISO-V                               | 47J @ -60°C | 47J @ -60°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 | BS300 spool | BS300 spool |

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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](http://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.

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