



# DAIKOWT SG1

GTAW

CARBON STEELS  
STRUCTURAL STEEL

## DESCRIPTION

Copper coated GTAW rod for welding carbon and C-Mn steels

Copper coated GTAW rod suitable for welding carbon and carbon-manganese steels with resistance tensile strength up to 500 MPa. Suitable for tanks, boilers, carpentry work, earthmoving and construction. Used in the first passes and at the bottom of the groove as a support pass or where it is reverse recovery impossible. Excellent mechanical characteristics and toughness at low temperatures.

## SPECIFICATIONS

ISO 636-A	W 42 5 W 2 S i	AWS A5.18	ER70S-3
DIN	-	Werkstoff Number	-
Certifications	CE	Shielding	11
Positions	PA, PB, PC, PD, PE, PF	Current	DC-

## ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	1

## FERRITE

Ferrite	-
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## PREN

PREN	-
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## HARDNESS

Hardness	-
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## CHEM. COMP. %

### DEFAULT

C	0.08
Mn	1.21
Cr	0.02
P	0.01
S	0.01
Si	0.5
Cu	0.04

## MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R <sub>m</sub> MPa	490	550
Yield strength R <sub>p0.2</sub> MPa	420	440
Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	22	32
Impact Charpy ISO-V	27J @ -50°C	60J @ -40°C
Impact Charpy ISO-V	-	-

## WELDING PARAMETERS

	1.6 mm	2.4 mm
Ampere	95A - 135A	145A - 205A
Voltage	-	-
Packaging	Ø 1,2÷3,2 mm	Ø 1,2÷3,2 mm
Packaging Type	5kg carton tube	5kg carton tube

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).





# STRUCTURAL STEEL

DESCRIPTION

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STRUCTURAL STEEL

## APPLICATION

Carbon-manganese (C-Mn) steels serve as the predominant structural steels extensively used across various applications in the engineering industry. Successful welding of C-Mn steel fabrications is generally achievable, provided the steel composition is known, necessary precautions are taken, and qualified procedures are adhered to. Weldability varies among C-Mn steels, with potential cracking mechanisms, including hydrogen cracking, solidification cracking, and reheat cracking, depending on specific circumstances. These consumables effectively resist such issues, emphasizing the importance of a meticulous welding procedure. While preheat and post-weld heat treatment (PWHT) may not be universally required, the actual specifications depend on the grade and thickness of the base material being welded. Attaining the required mechanical properties in a welded joint with C-Mn steels is achievable through the use of appropriate welding consumables. However, the intricate structural changes during the weld thermal cycle necessitate careful evaluation of properties such as heat-affected zone (HAZ) toughness and hardness.

## ALLOY TYPE

Consumables for welding mild and C-Mn steels of 340-510MPa tensile strength.

## MICROSTRUCTURE

Predominantly ferrite.

## MATERIALS

**EN W.Nr.:** EN AW-Al 99,0 (1200), EN AW-Al 99,7 (1070A), EN AW-Al 99,5 (1050A), EN AW-Al 99,5 (1350), EN AW-Al 99,8 (1080A).

