



DAIKOWT SG3 HQ



CARBON STEELS
STRUCTURAL STEEL

DESCRIPTION

Copper coated GTAW rod for welding carbon and C-Mn steels with special surface treatment

Copper coated GTAW rod for welding carbon and carbon-manganese steels with tensile strength up to 530 MPa. The special surface treatment ensures consistent welding performance, low spatters and optimal rod feeding. Used for the fabrication of vessel, pipework and for structural steel applications. Due to the high current load capacity, the stable arc and the nearly residual free weld surface the wire offers the best conditions for productive welding processes. Excellent feeding characteristics provides high wire feed rates especially during robotic welding.

SPECIFICATIONS

ISO 636-A	W 46 5 W 4 S i 1	AWS A5.18	ER70S-6
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	11
Positions	PA, PB, PC, PD, PE, PF	Current	DC-

ASME QUALIFICATIONS	FERRITE	PREN	HARDNESS
F-No (QW432) 6	-	-	-
A-No (QW442) 1	-	-	-

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN	VARIANT
C	0.07	Tensile strength R _m MPa	490	600
Mn	1.64	Yield strength R _{p0.2} MPa	460	500
Cr	0.03	Elongation A (L ₀ =5d ₀) %	22	26
P	0.01	Impact Charpy ISO-V	27J @ -50°C	50J @ -50°C
S	0.015	Impact Charpy ISO-V	-	-
Si	0.95			
Cu	0.05			
		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.





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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).

