



DAIKOWS S4



CARBON STEELS
STRUCTURAL STEEL

DESCRIPTION

Solid SAW wire for C-Mn steel

Copper coated wire for submerged arc welding of C-Mn steels, structural steels, pressure vessels steels, fine-grained steels, etc. Suitable for single pass or multipass welding of non alloy steels. It can be used for boilers fabrication, industrial machinery construction, car production. The minimum guaranteed yield reaches a maximum of 460Mpa for applications down to -40 ° C depending on the flux combination.

SPECIFICATIONS

| | | | |
|----------------|------------|------------------|-------------------------------|
| ISO 14171-A | S4 | AWS A5.23 | EH14 |
| DIN | - | Werkstoff Number | - |
| Certifications | - | Shielding | DAIKOFLUX 470-W, 480-W, 490-W |
| Positions | PA, PB, PC | Current | DC/AC |

ASME QUALIFICATIONS

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

FERRITE

| | |
|---------|---|
| Ferrite | - |
|---------|---|

PREN

| | |
|------|---|
| PREN | - |
|------|---|

HARDNESS

| | |
|----------|---|
| Hardness | - |
|----------|---|

CHEM. COMP. %

DEFAULT

| | |
|----|-------|
| C | 0.1 |
| Mn | 2 |
| Ni | 0.1 |
| Cr | 0.15 |
| Al | 0.03 |
| P | 0.025 |
| S | 0.025 |
| Mo | 0.15 |
| Si | 0.1 |
| Cu | 0.3 |

MECHANICAL PROPERTIES

| | MIN | VARIANT |
|---|-----|-------------|
| Tensile strength R _m MPa | - | 590 |
| Yield strength R _{p0.2} MPa | - | 400 |
| Elongation A (L ₀ =5d ₀) % | - | 22 |
| Impact Charpy ISO-V | - | 27J @ -20°C |
| Impact Charpy ISO-V | - | - |

WELDING PARAMETERS

| | 2.4 mm | 3.2 mm | 4 mm |
|----------------|---|-------------|-------------|
| Ampere | 350A - 450A | 430A - 530A | 480A - 580A |
| Voltage | 26V - 30V | 27V - 32V | 27V - 32V |
| Packaging | Ø 2,0÷4,8mm | Ø 2,0÷4,8mm | Ø 2,0÷4,8mm |
| Packaging Type | K415 spool and drums. K415 spool and drums. K415 spool and drums. | | |

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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.





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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).

