



DAIKOWM 625



NICKEL ALLOYS

625

DESCRIPTION

Solid wire for Nickel based 625 alloy

This wire rod is used for its high temperature strength and structural stability and for its resistance to general corrosion, pitting, crevice and stress corrosion cracking in severe chloride media. Useful properties from -269°C to above 550°C are achieved. It is used for welding of alloy 625, alloy 825, alloy 25-6MO, and a range of high alloy austenitic and super austenitic stainless steels. It is also used for surfacing of steel, for welding 9% Ni steels, and for welding various corrosion-resistant alloys such as alloy 20. Widely used in oil and gas production and processing.

SPECIFICATIONS

| | | | |
|----------------|----------------------------|------------------|------------|
| ISO 18274 | S Ni 6625 | AWS A5.14 | ERNiCrMo-3 |
| DIN | - | Werkstoff Number | - |
| Certifications | CE, TUV | Shielding | I1, I3 |
| Positions | PA, PB, PC, PD, PE, PF, PG | Current | DC+ |

ASME QUALIFICATIONS

| | |
|--------------|----|
| F-No (QW432) | 43 |
| A-No (QW442) | - |

FERRITE

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

PREN

| | |
|------|------|
| PREN | 51.7 |
|------|------|

HARDNESS

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

CHEM. COMP. %

| CHEM. COMP. % | DEFAULT |
|---------------|---------|
| C | 0.01 |
| Mn | 0.01 |
| Ni | 65 |
| Cr | 22 |
| Nb | 3.6 |
| Al | 0.01 |
| P | 0.003 |
| S | 0.001 |
| Mo | 9 |
| Si | 0.07 |
| Cu | 0.02 |
| Fe | 0.4 |
| Ti | 0.2 |

MECHANICAL PROPERTIES

| MECHANICAL PROPERTIES | MIN | VARIANT |
|---------------------------------------------------|------|--------------|
| Tensile strength R _m MPa | 760* | 780 |
| Yield strength R _{p0.2} MPa | 0 | 430 |
| Elongation A (L ₀ =5d ₀) % | 0 | 50 |
| Impact Charpy ISO-V | - | 60J @ -196°C |
| Impact Charpy ISO-V | - | - |

WELDING PARAMETERS

| WELDING PARAMETERS | 1 mm | 1.2 mm |
|--------------------|--------------------------------------------------|--------------------------------------------------|
| Ampere | 140A - 200A | 150A - 210A |
| Voltage | 23V - 27V | 25V - 29V |
| Packaging | Ø 0,8÷1,6mm | Ø 0,8÷1,6mm |
| Packaging Type | Drums, DIN 760 reel, B300, D200 and D100 spools. | Drums, DIN 760 reel, B300, D200 and D100 spools. |

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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DESCRIPTION

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APPLICATION

Engineered to replicate the composition of alloy 625, this consumable is widely recognized for its exceptional resistance to general corrosion, pitting, crevice, and stress corrosion cracking, especially in challenging chloride environments. Elevated levels of Cr, Mo, and Nb contribute to its remarkable performance, endowing it with unparalleled strength that surpasses standard nickel-base alloys. With a broad operational range spanning from -269°C to above 1000°C , it is well-suited for welding heat-resistant alloys like Inconel 601, Incoloy 800/800H, or their combinations with other alloys, catering to various applications in furnace equipment, petrochemical plants, and power generation facilities. This consumable is versatile for performing overmatching corrosion-resistant welds in alloy 825, Hastelloys G and G3, alloy 28, 904L, and the 6%Mo superaustenitic stainless steel 2545Mo. Additionally, it is employed for overlays on pumps, valves, and shafts, particularly in demanding offshore and marine environments where high pitting resistance ($\text{PRE} = 50$) and tolerance to dilution are imperative. In welding high-strength ferrous alloys, including cryogenic 9% nickel steels, and for the reclamation of dies demanding rapid work-hardening and toughness, this consumable stands as a preferred choice. Notably, no preheat is required, and the maximum interpass temperature is set at 250°C . For superaustenitic alloys, the interpass temperature should be rigorously controlled, not exceeding 100°C .

ALLOY TYPE

Consumables matching the nickel base 625 alloy with typical composition of Ni-21%Cr-9%Mo-3.5%Nb.

MICROSTRUCTURE

In the as-welded condition this nickel base weld metal consists of solid-solution strengthened austenite with carbides.

MATERIALS

Also suitable to join 9%Ni steels.

EN W.Nr.: 2.4856.

ASTM: A494 CW-6MC, 904L.

UNS: N06625, S31254.

PROPRIETARY: Inconel® 625, 601 (Special Metals), Nicrofer 6020hMo, 6022hMo (VDM), 2545MO (Outokumpu), Incoloy® 800H, 825 (Special Metals).

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