# DAIKOWT 3Ni

GTAW

CRYOGENIC STEELS
3Ni

## DESCRIPTION

**Solid rod for welding 3%Ni steel**

Wire rod designed for welding low-alloy steels with 3,5% Ni. Suitable for the construction of cryogenic plant and pipework in petrochemical industry and for general low temperature applications down to -70°C.

## SPECIFICATIONS

| | | | |
|---|---|---|---|
| **ISO 14341-B** | W 57 P 7 M22 SN71 | **AWS A5.28** | ER80S-Ni3 |
| **DIN** | - | **Werkstoff Number** | - |
| **Certifications** | - | **Shielding** | I1 |
| **Positions** | PA, PB, PC, PD, PE, PF | **Current** | DC- |

## ASME QUALIFICATIONS

| | |
|---|---|
| F-No (QW432) | 6 |
| A-No (QW442) | 10 |

## FERRITE

-

## PREN

-

## HARDNESS

-

## CHEM. COMP. %

| | DEFAULT |
|---|---|
| C | 0.1 |
| Mn | 1 |
| Ni | 3.5 |
| P | 0.01 |
| S | 0.01 |
| Mo | 0.03 |
| Si | 0.6 |
| Cu | 0.12 |

## MECHANICAL PROPERTIES

| | MIN | VARIANT |
|---|---|---|
| Tensile strength $R_m$ MPa | 550 | 620 |
| Yield strength $R_{p0.2}$ MPa | 490 | 540 |
| Elongation A ($L_0$=5$d_0$) % | 17 | 24 |
| Impact Charpy ISO-V | 27J @ -70°C | 50J @ -70°C |
| Impact Charpy ISO-V | - | - |

## WELDING PARAMETERS

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

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DAIKO

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DESCRIPTION



## APPLICATION

Engineered for welding low-alloy steels containing 3.5% Ni, these consumables prove to be highly effective in various applications. Their primary suitability lies in the construction of cryogenic plants and pipework within the petrochemical industry, as well as for general low-temperature purposes extending down to -80ºC. When utilizing these consumables, it's crucial to adhere to a preheating regimen aligned with the specifics of the base material and its thickness. While AWS consumable specifications advocate for post-weld heat treatment (PWHT), it's noteworthy that many fabrications often opt to retain the as-welded condition. The decision on whether to employ PWHT is typically determined by the applicable design codes governing the specific project or application.

## ALLOY TYPE

Nominally 3,5%Ni low alloy steels.

## MICROSTRUCTURE

In the as-welded condition the microstructure is ferritic with a component of acicular ferrite for optimum toughness.

## MATERIALS

Low temperature applications, fine-grained steels that contain up to 3.5% Nickel.
**ASTM**: A203 gr. D, E, F, A350 gr. LF3, A352 gr. LC3, A333 Gr. 3.
**UNS**: K22103, K21703, J42015.