



DESCRIPTION

Solid wire 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	G 57 P 7 M22 SN71	AWS A5.28	ER80S-Ni3
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	M20, 21
Positions	PA, PB, PC, PD, PE, PF	Current	DC+

ASME QUALIFICATIONS

F-No (QW432)	5
A-No (QW442)	10

FERRITE

Ferrite	-
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PREN

PREN	-
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HARDNESS

Hardness	-
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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 =5d ₀) %	17	24
Impact Charpy ISO-V	27J @ -70°C	50J @ -70°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1 mm	1.2 mm
Ampere	100A - 220A	150A - 360A
Voltage	18V - 28V	30V - 34V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.





3Ni

DESCRIPTION

CRYOGENIC STEELS

3Ni

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 -80°C . 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.

