



## DESCRIPTION

### Basic coated electrode for 1% Ni steels

Basic coated electrode developed for welding all fine-grained steels with operating temperatures down to -60°C and 1% Ni steel. Excellent mechanical characteristics, low hydrogen content. It is advisable to use a short arc and low forward speed to obtain the best results. It welds in all positions except the descending vertical and its deposit is free from cracks. It is widely used in all important constructions such as cryogenic, petrochemical, shipyards etc. Ease of slag removal reduces post-welding cleaning operations to a minimum.

## SPECIFICATIONS

EN ISO 2560-A	E 46 6 1NiMo B 42	AWS A5.5	E8018-C3
Shielding	-	Positions	PA, PB, PC, PD, PE, PF
Current	DC+, AC	Packaging Type	Carton box

## ASME QUALIFICATIONS

F-No (QW432)	4
A-No (QW442)	10

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD			PRODUCT
C	0.05	Tensile strength R <sub>m</sub> MPa	550			600
Mn	1.1	Yield strength R <sub>p0.2</sub> MPa	460			500
Ni	1	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	19			24
P	0.01	Impact Charpy ISO-V	47J @ -60°C			50J @ -60°C
S	0.01	Impact Charpy ISO-V	-			-
Mo	0.3					
Si	0.6					
Cu	0.1					
		WELDING PARAMETERS	2.5 mm	3.2 mm	4.0 mm	5.0 mm
		Ampere	65A - 95A	100A - 140A	130A - 190A	180A - 240A
		Voltage	-	-	-	-
		Packaging	45 pcs/kg	21 pcs/kg	14 pcs/kg	10 pcs/kg
		Packaging Type	Carton box	Carton box	Carton box	Carton box

## NOTES

Pcs/kg is indicative, actual number may vary ± 5%.



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# 1Ni

DESCRIPTION

CRYOGENIC STEELS

1Ni

## APPLICATION

Designed for welding high-strength steel structures where post-weld heat treatment (PWHT) is not feasible, this material ensures a high level of toughness and crack resistance. The inclusion of approximately 1% Nickel (Ni) contributes to the refinement of the microstructure, offering better tolerance to procedural variations compared to unalloyed Carbon-Manganese (CM-N) welding metals. Additionally, Nickel enhances weather resistance and optimizes the electrochemical balance between the base metal and the weld metal, minimizing corrosion in the weld zone, particularly under marine conditions. In offshore oil field applications and acidic environments, a maximum content of 1.0% Ni is often required in accordance with the NACE MR0175 standard. This material is especially suitable when design specifications demand toughness tests on high-strength low-alloy steels at temperatures as low as -50°C, as in the case of offshore constructions, pipelines, and pressure vessels. The need for preheating varies depending on the grade and thickness of the base material.

## ALLOY TYPE

Low alloy steel alloyed with nominally 1%Ni for improved toughness. Actual Ni content is kept below 1% to ensure conformance with NACE MR0175.

## 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 1 % Nickel.

**EN W.Nr.:** S460N (1.8901), S355N (1.0545), S460NL (1.8903), S460QL (1.8906)

**ASTM:** A333 & A334 gr. 6, A350 gr. LF2 & LF5, A352 gr. LCB & LCC (cast), A572 gr.50

**API:** 5L X65

