


<b>Technical data sheet</b>  <small>011121MBA</small>	<b>Cored welding Wire</b>  <b>HARDFACE NICARB60</b>	
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### CLASSIFICATION

EN 14700: T Ni20

### DESCRIPTION

- Flux cored hardfacing wire containing 46 to 60% tungsten carbides (according to wire diameter)
- Nickel matrix
- Can be used with or without external gas shielding
- Ultimate wear resistance in single layer deposits (limit to two layers)
- Optimised combination of toughness and wear resistance due to the heterogeneous weld metal composed of tungsten carbides distributed in a hard and very tough matrix
- Up to 60 HRc hardness in a single layer
- Excellent wetting characteristics

### APPLICATIONS

- Applications requiring extreme abrasion resistance combined with corrosion resistance

#### Examples

Brick and clay mill augers, earthmoving equipment (such as plows), rubber mixers and generally all parts undergoing severe abrasion in the mining, steelmaking and public works.

### TYPICAL CHARACTERISTICS – ALL-WELD METAL

Tungsten carbide has two stable forms at room temperature: WC, which is lower hardness but more stable at high temperatures and W<sub>2</sub>C, which is higher hardness, but less stable at higher temperatures.

HARDFACE NICARB60 is filled with cast tungsten carbides (CTC) which result from an eutectic mixture of mono tungsten carbide (70 - 80 wt-%) and di-tungsten carbide (20 - 30 wt-%). These particles have a very fine feather like internal structure which results in very high hardness values.

HARDFACE NICARB60 combines the characteristic of the above CTC carbides with an exclusive matrix design for maximum resistance to wear from the first layer.

HARDFACE NICARB60 is a nickel base product. It contains 46 - 50 % cast tungsten carbides, boron carbides and mineral + metallic additions to control wetting and weldability,

#### Structure:

Tungsten carbides: 2000 – 2500 HV0.5 Typical: 2360 HV0.5  
 Nickel matrix: 600 - 700 HV  
 Bulk Hardness: 53 - 60 HRc  
 Tungsten carbide size: 45 - 250 µm  
 Density: 10 g/cm<sup>3</sup>

### CONDITIONS OF USE

Current type	Shielding gas	
DC+	EN ISO 14175	I1: 100 % argon
		M12: Ar + 0.5 – 5 % O <sub>2</sub>
		M21: Ar + 15 – 25 % CO <sub>2</sub>

Surfaces to be welded should be free of rust, scale, oil or any other contamination

Work with low heat input to avoid melting or sinking of the tungsten particles

### OPERATING CONDITIONS

Diameter [mm]	Current [A]		Voltage [V]		Stick-out [mm]	
	Range	Optimum	Range	Optimum	Range*	Optimum
1.6	120 - 180	150	19 - 22	21	≤ 20 mm	15

Recovery: 99 %

\*A longer electrical stick out length is recommended for open arc hardfacing (≤ 30 mm)

### WELDING POSITIONS

Flat, half up, half down

### PACKAGING

Diameter	1.6 mm
Standard packaging	Spool EN ISO 544: BS300
Weight	15 kg

Other packaging and other diameters: please consult us

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