

# UCB DATA SHEET

## Continuously Cast Iron

# UNIBAR NR-S2

(EN-GJSA-XNiCr20-2)  
GUIDANCE ONLY

### Characteristics

Austenitic SG (Ni-resist) iron offering exceptional resistance to heat, corrosion and wear, and is non-magnetic at any temperature. It has improved tensile strength and ductility over NR-F1. It has good machinability. Noise and vibration damping are also good in this grade. Compares with standard EN-GJSA-XNiCr20-2.

### Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
<b>Round</b>	25mm – 700mm
<b>Square</b>	25mm x 25mm – 550mm x 550mm
<b>Rectangle</b>	Up to 750mm x 550mm
<b>Supply condition</b>	As-cast, turned, peeled, milled and cut
<b>Length</b>	Standard 3080mm, other lengths available

### Chemistry

ELEMENT	TYPICAL %
<b>Carbon</b>	3.00 Max
<b>Silicon</b>	1.50 to 2.8
<b>Manganese</b>	0.50 to 1.50
<b>Sulphur</b>	0.020 Max
<b>Phosphorous</b>	0.050 Max
<b>Nickel</b>	18.00 - 22.00
<b>Copper</b>	0.50 Max
<b>Chromium</b>	1.00 to 2.50

Typical Ranges (Analysis at the discretion of UCB)

### Mechanical Properties

MATERIAL SPECIFICATION	TENSILE STRENGTH (UTS) N/mm <sup>2</sup> minimum	0.2% PROOF STRESS N/mm <sup>2</sup> minimum	ELONGATION % minimum	HARDNESS HB
Unibar NR-S2	370 Min	210	7 Min	140 - 200

All sizes above 50mm dia are subject to normal UCB order procedures; however all sizes below will require discussion prior to order.

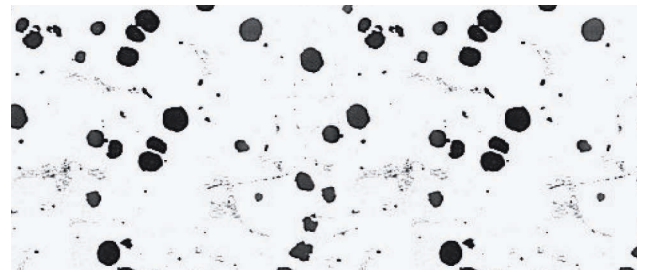
Taken from mid-radius of cast bar, not separately cast test bar.

### Brinell Hardness (HB)

Test 10mm dia Ball 3000Kg load depending on section size. Hardness readings are taken across the entire section of the bar. Hardness values for rectangles depend on the ratio of height to width and can be supplied upon request.

### Microstructure

Contains type I & II nodular (spheroidal) graphite in accordance with ISO 945. The rim contains approximately 200/250 nodules/mm<sup>2</sup>. 90/150 nodules/mm<sup>2</sup>. The matrix is fully austenitic with up to 10% alloy carbides.



(Photo 100x magnification)

### Heat Treat Response

Unibar NR-S2 cannot be hardened.

### Grade colour code



### Density

7.3 g/cc