

# UCB DATA SHEET

## Continuously Cast Iron

# UNIBAR 400-18

(EN-GJS-400-18C, EN 16482)

GUIDANCE ONLY

### Characteristics

Unibar 400-18 offers superior machinability combined with good impact, fatigue, electrical conductivity and magnetic permeability, along with an increase in ductility over 400-15. Noise and vibration damping are good in this grade. Compares with standard EN-GJS-400-18C (EN 16482).

### 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>	3.25 – 3.70
<b>Silicon</b>	2.40 – 3.00
<b>Manganese</b>	0.10 – 0.40
<b>Sulphur</b>	0.005 – 0.020
<b>Phosphorous</b>	0.015 – 0.08
<b>Magnesium</b>	0.04 – 0.07
<b>Others/Alloying</b>	Residual
<b>Iron</b>	Balance

Typical Ranges (Analysis at the discretion of UCB)

### Mechanical Properties

MATERIAL GRADE	MATERIAL SECTION mm	ANTICIPATED VALUES				HB	MATRIX
		Tensile UTS N/mm <sup>2</sup> minimum	0.2% Proof Stress N/mm <sup>2</sup> minimum	Elongation % minimum			
Unibar 400-18	25 < D ≤ 60	400	250	18	120-180	Predominantly Ferritic	
	60 < D ≤ 120	390	250	15			
	120 < D ≤ 400	370	240	12			
	400 < D ≤ 700+	370	240	12			

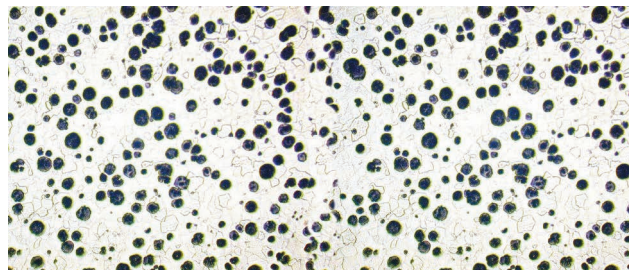
Taken from mid-radius of cast bar, not separately cast test bar.

### 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 V & VI nodular (spheroidal) graphite in accordance with ISO 945. The rim contains approximately 200/250 nodules/mm<sup>2</sup>, and is predominately ferritic (>90%), with the core containing 90/150 nodules/mm<sup>2</sup>. The core matrix is essentially ferritic with ≤10% pearlite. Chill carbides will be less than 5%, well dispersed.



(Photo 100x magnification)

### Heat Treat Response

Unibar 400-18 is not recommended for hardening and tempering. The higher pearlitic grades Unibar 600-3 and 700-2 are more suitable.

### Grade colour code



### Density

7.3 g/cc