United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 400-15

(EN-GJS-400-15C, EN 16482)
GUIDANCE ONLY

UNIBAR 400-15

Characteristics

Unibar 400-15 offers superior machinability and surface finish combined with good fatigue strength, electrical conductivity and magnetic permeability. Noise and vibration damping are good in this grade.

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	25mm – 700mm
Square	25mm x 25mm – 625mm x 625mm
Rectangle	Up to 750mm x 550mm
Supply condition	As-cast, turned, peeled, milled and cut
Length	Standard 3080mm, other lengths available

Chemistry

ELEMENT	TYPICAL %
Carbon	3.25 – 3.70
Silicon	2.40 – 3.00
Manganese	0.10 – 0.60
Sulphur	0.005 – 0.020
Phosphorous	0.015 – 0.080
Magnesium	0.04 – 0.07
Others/Alloying	Residual
Iron	Balance

Typical Ranges (Analysis at the discretion of UCB)

Mechanical Properties

MATERIAL GRADE	MATERIAL SECTION mm	Tensile UTS N/mm² minimum	0.2% Proof Stress N/mm² Minimum	Elongation % Minimum	HB	
Unibar 400-15	20 < D ≤ 60	400	250	15	120-180	Ferritic
	60 < D ≤ 120	390	250	14		
	120 < D ≤ 400	370	240	11		
	400 < D ≤ 700	370	240	11		

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/mm², and is predominately ferritic (>90%), with the core containing 90/150 nodules/mm². 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 400-15 is not recommended for heat treatment, the higher pearlitic Unibar 600-3 and 700-2 are more suitable.

Grade colour code

Density

7.3 g/cc