United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 500+

(EN-GJS-500-7C, EN 16482)
GUIDANCE ONLY

UNIBAR 500+

Characteristics

Unibar 500+ offers higher wear resistance, strength & heat-treatment response compared to Unibar 400-15,with improved ductility (elongation) against standard 500-7. Whilst complying with the mechanical characteristics required and the hardness values of Unibar 500-7 and encompassing certain hardness levels of Unibar 400-15. Possesses good machinability and excellent surface finish. Noise and vibration damping are good in this grade.
Conforms with EN-GJS-500-7C (EN 16482).

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/mm^2 minimum	0.2% Proof Stress N/mm^2 minimum	Elongation % minimum	HB	
Unibar 500+	20 < D ≤ 60	500	320	15	170-210	Ferritic-Pearlitic
	60 < D ≤ 120	450	300	14		
	120 < D ≤ 400	420	290	11		
	400 < D ≤ 700	420	290	11		

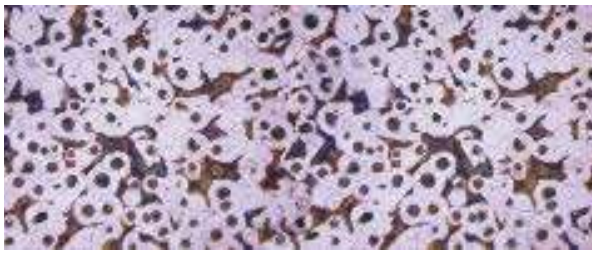
Taken from mid-radius of cast bar, not separately cast test bar.

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/mm^2, and is predominately ferritic (≥90%) with the core containing 90/150 nodules/mm^2. The core matrix is mixed ferritic/pearlitic (10–50% pearlite). Chill carbides will be less than 5%, well dispersed.



(Photo 100x magnification)

Heat Treat Response

Unibar 500+ can be hardened by conventional methods, but Unibar 600-3 and 700-2 are recommended.

Grade colour code

Density

7.3 g/cc