United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 500-7

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

Characteristics

Unibar 500-7 has an increased pearlitic structure against Unibar 400-15, resulting in higher wear resistance and increased strength with improved heat-treatment response when compared to Unibar 400-15 and is therefore recommended for applications in which good machinability and surface finish are required, as well as minimal friction with other parts and/or materials.

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	MATRIX
Unibar 500-7	20 < D ≤ 60	500	320	7	170-240	Ferritic-Pearlitic
	60 < D ≤ 120	450	300	7		
	120 < D ≤ 400	420	290	5		
	400 < D ≤ 700	420	290	5		

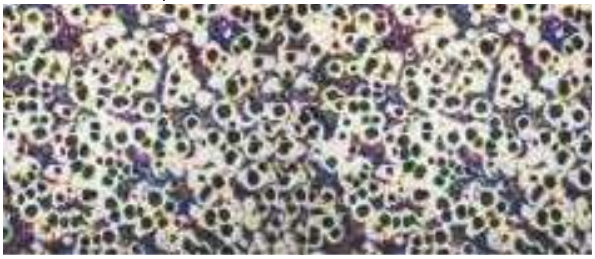
Taken from mid-radius of cast bar, not separately cast test bar.

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 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 500-7 can be hardened by conventional methods, but Unibar 600-3 and 700-2 are recommended.

Grade colour code

Density

7.3 g/cc