United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 600-3

(EN-GJS-600-3C, EN 16482)
GUIDANCE ONLY

UNIBAR 600-3

Characteristics

Unibar 600-3 offers reasonable machinability and excellent surface finish, combined with high wear resistance and increased strength, heat treatment response is good compared to Unibar 400-15 and 500-7. Noise and vibration damping are good in this grade.
Conforms with EN-GJS-600-3C (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/mm² minimum	0.2% Proof Stress N/mm² minimum	Elongation % minimum	HB	
Unibar 600-3	20 < D ≤ 60	600	380	3	200-290	Pearlitic-Ferritic
	60 < D ≤ 120	600	360	3		
	120 < D ≤ 400	550	340	3		
	400 < D ≤ 700	550	340	3		

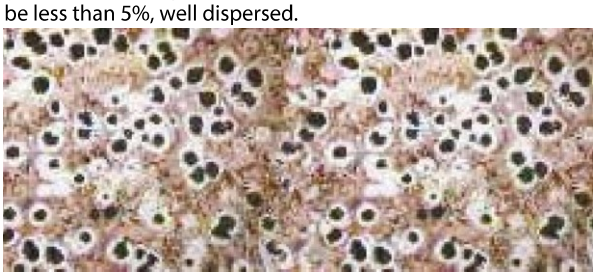
Taken from mid-radius of cast bar, not separately cast test bar.

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 predominantly pearlitic with the core containing 90/150 nodules/mm². The core matrix is greater than 50% pearlite with some ferrite. Chill carbides will be less than 5%, well dispersed.



(Photo 100x magnification)

Heat Treat Response

Unibar 600-3 is more responsive to heat treatment than the predominantly ferritic grades, in particular hardening and tempering, this along with all conventional surface hardening techniques. And potential hardness of 50Rc on the surface and increased depth of hardness through the section.

Grade colour code

Density

7.3 g/cc