United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 100-07-03 ASTM A536

(Comparable with Unibar 700-2)
GUIDANCE ONLY

Characteristics

Unibar 100-70-03 offers improved wear resistance , increased strength with superior heat treatment response compared to other SG/Nodular grades while possessing reasonable machinability with an excellent surface finish. Noise and vibration damping are good in this grade

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	1" – 27½"+ (25 – 698.5mm)
Square	1" x 1" – 24" 6x24.6 (25mm x 25mm – 625mm x
Rectangle	625mm)
Supply condition	Up to 29½" x 21½" (750 – 546mm)
Length	As-cast, turned, peeled, milled and cut

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)

Brinell Hardness (BHN)

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 I & II nodular (spheroidal) graphite, in accordance with ASTM A247. The rim contains approximately 200/250 nodules/ mm2, and is predominately pearlitic (>70%) with the core containing 90/150 nodules/mm2. The core matrix is greater than 70% pearlite with some ferrite. Chill carbides will be less.



(Photo 100x magnification)

Heat Treat Response

Unibar 100-70-03 is more responsive to heat treatment than 80-55-06 and the predominantly ferritic grades, in particular hardening and tempering, and is ideally suitable for Austempering, this along with all conventional surface

Mechanical Properties

MATERIAL GRADE	MATERIAL SECTION inches (mm)	TENSILE (UTS) lbs/Sq inch (N/mm^2)	0.2% Proof Stress lbs/Sq inch (N/mm^2)	ELONGATION %	BHN	MATRIX
Unibar 100-70-02 Comparable with Unibar 700-2	0.984 – 27.5625 + (25 – 698.5)	100,000 (690)	70,000 (483)	3	241- 302	Predominantly pearlitic

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

Grade colour code

Density

7.3 g/cc