United Cast Bar

UCB DATA SHEET USA

Continuously Cast Iron

Unibar 80-55-06 ASTM A536

(Comparable with Unibar 600-3, conforms to EN16482 EN-GJS-550-6C)
GUIDANCE ONLY

Characteristics

Unibar 80-55-06 offers reasonable machinability and excellent surface finish, combined with high wear resistance and increased strength, heat treatment response is improved over Unibar 65-45-12. Magnetic permeability, noise and vibration damping are also good in this grade.

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	1" – 27½"+ (25 – 698.5mm)
Square	1" x 1" – 24.6" x 24.6" (25mm x 25mm – 625mm x
Rectangle	625mm)
Supply condition	Up to 29½" x 21½" (750 – 550mm)
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

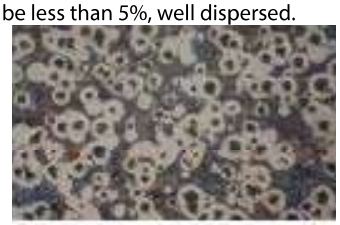
Typical Ranges (Analysis at the discretion of UCB)

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/square mm, and is predominantly pearlitic with the core containing 90/150 nodules/sq. mm. 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 80-55-06 is more responsive to heat treatment than the predominantly ferritic grades, in particular hardening and tempering, this along with all conventional surface hardening techniques, offer potential hardness's of 50Rc on the surface and increased depth of hardness throughout the section. Suitable for Austempering.

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 %	HB	MATRIX
Unibar 80-55-06 Comparable with Unibar 600-3	1 – 27 ½ + (25 – 698.5)	80,000 (552)	55,000 (379)	6	187 - 255	Predominantly Pearlitic

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

Grade colour code

Density

7.3 g/cc