United Cast Bar

UCB DATA SHEET USA

Continuously Cast Iron

Unibar Class 40 ASTM A48

(Comparable with Unibar 300)
GUIDANCE ONLY

Characteristics

Unibar Class 40 is alloyed to achieve the specified properties, giving excellent wear resistance, strength & heat treatment response compared to Unibar 200 and Unibar 250 while still possessing reasonable machinability and an excellent surface finish.
Noise and vibration damping are excellent 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 625mm)
Rectangle	Up to 29½" x 21½" (750 – 550mm)
Supply condition	As-cast, turned, peeled, milled and cut
Length	Standard 12`, other lengths available (3658mm)

Chemistry

ELEMENT	TYPICAL %
Carbon	2.70 – 3.45
Silicon	2.10 – 2.90
Manganese	0.50 – 0.80
Sulphur	0.04 – 0.10
Phosphorous	0.15 max
Tin	0.10 max
Copper	0.60 max
Iron	Balance

Typical Ranges (Analysis at the discretion of UCB)

Mechanical Properties

MATERIAL GRADE	MATERIAL SECTION inches (mm)	TENSILE STRENGTH lbs/Sq inch (N/mm^2 min^m)	HB	MATRIX
Unibar Class 40 Comparable with Unibar 300	1 – 27½" + (25 – 698.5)	40,000* (276)	183 – 285	Predominantly Pearlitic

*Dependant on Section thickness

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

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 VII graphite flakes in accordance with ASTM A247. The rim zone contains fine types 'D' and 'E' interdendritic graphite. The core matrix is greater than 90% pearlite. The rim matrix is a ferrite/pearlite mixture. The rim may contain up to 5% dispersed fine carbides.



(Photo 100x magnification)

Heat Treat Response

Unibar Class 40 is suitable for all conventional methods of heat treatment, with hardness levels of up to Rc 50 achievable.

Grade colour code

Density

7.3 g/cc