United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 700-2

(EN-GJS-700-2C, EN 16482)
GUIDANCE ONLY

Characteristics

Unibar 700-2 offers improved wear resistance, increased strength with superior heat treatment response compared to other SG/Nodular grades, while still possessing reasonable machinability with an excellent surface finish. Noise and vibration damping are good in this grade. Conforms with EN-GJS-700-2C (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 700-2	20 < D ≤ 60	700	420	2	210-305	Predominantly Pearlitic
	60 < D ≤ 120	700	400	2		
	120 < D ≤ 400	650	380	1		
	400 < D ≤ 700	650	380	1		

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 predominantly pearlitic, with the core containing 90/150 nodules/mm^2. The core matrix is greater than 70% pearlite with some ferrite. Chill carbides will be less than 5%, well dispersed.



(Photo 100x magnification)

Heat Treat Response

Unibar 700-2 is more responsive to heat treatment than 600-3 and the predominantly ferritic grades, in particular hardening and tempering, and is ideally suitable for austempering, this along with all conventional surface hardening techniques.

Grade colour code

Density

7.3 g/cc