

UCB DATA SHEET

Continuously Cast Spheroidal Graphite Iron: UCB Grade Unibar 700-2 (Guidance only)



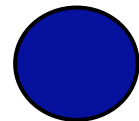
Characteristics: Offers higher wear resistance; strength & heat-treatment response compared to Unibar600-3 and Unibar 500-7 while still possessing reasonable machinability and excellent surface finish. Noise and vibration damping are good in this grade. Compares with standard **EN-1563-GJS-700-2 GGG70 and Meehanite SP700.**

Unibar Profile and Size Range	
Round	20mm - 500mm diameter
Square	Up to 410 mm x 410mm
Rectangle	Narrow side 25mm up to a maximum 650mm x 280mm or 550mm x 380mm
Ingots	400mm - 780mm diameter x 1.2 metre long (proof machined)
Ingot Blocks	up to 550mm x 500mm x 1400mm long (proof machined)
Standard Length	Continuously Cast Bar 3 metres (other lengths available upon request)
Supply condition	As-cast, turned and peeled (Rounds). As-cast milled (proof machined) and saw cut (rectangles and squares)
Non Standard	Sizes/shapes to customer design available on special order and subject to discussion.

Chemistry: (Typical Ranges):
(Subordinate to Mechanical Properties)

Element	Typical %
Carbon	3.40 - 3.85
Silicon	2.30 - 3.10
Manganese	0.10 - 0.30
Sulphur	0.02 Maximum
Phosphorous	0.10 Maximum
Magnesium	0.07 Maximum
Others/Alloying	Residual
Iron	Balance

Grade colour code



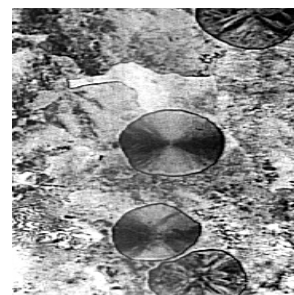
Mechanical Properties: (As taken from mid-radius of cast bar, not separately cast test piece)

Material Specification	Material Section mm	Tensile Strength (UTS) N/mm ²	0.2% Proof stress N/mm ²	Elongation %
Unibar 700-2 EN-GJS-700-2:1997	20mm - 30mm	700	420	2
	30mm - 60mm	700	400	2
	60mm - 200mm +	660	380	1

Brinell Hardness: (Range) 220-300 (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 essentially pearlitic with some ferrite (approximately 10%). Chill carbides will be less than 5%, well dispersed.
(Photo 100x magnification)



Heat Treat Response: Unibar 700-2 can be hardened by conventional methods, to Rc 50 on the bar surface, and responds well to austempering (ADI).

Density: 7.2 g/cc

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