

UCB DATA SHEET

Continuously Cast Spheroidal Graphite Iron: UCB Grade Unibar 400-15

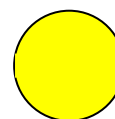
Characteristics: Offers superior machinability combined with optimal impact, fatigue, electrical conductivity and magnetic permeability. Noise and vibration damping are good in this grade. Compares with standard **EN-1563-GJS-400-15 GGG40 and Meehanite SF400**

| 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



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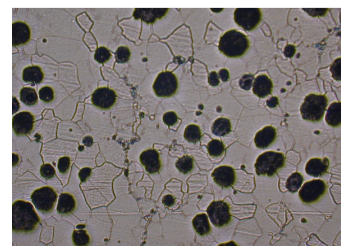
Mechanical Properties: (As taken from mid-radius of cast bar, not separately cast test piece)

| Material Specification | Material Section mm | Tensile Strength (UTS) N/mm ² | 0.2% Proof stress N/mm ² | Elongation % |
|-------------------------------------|---------------------|--|-------------------------------------|--------------|
| Unibar 400-15 EN-GJS-400-15:1997 | 20mm - 30mm | 400 | 250 | 15 |
| | 30mm - 60mm | 390 | 250 | 14 |
| | 60mm - 200mm + | 370 | 240 | 11 |

Brinell Hardness: (Range) 130-190 (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 ferritic (>90%), with the core containing 90/150 nodules/mm². The core matrix is essentially ferritic with ≤20% pearlite. Chill carbides will be less than 5%, well dispersed.
(Photo 100x magnification)



Heat Treat Response: Unibar 400-15 is not recommended for hardening heat treatment

Density: 7.2 g/cc