

# UCB DATA SHEET

## Continuously Cast Iron:

### UCB Grade Unibar 350 (Guidance Only)



**Characteristics:** Unibar 350 is a special grade alloyed to achieve the properties, giving excellent wear resistance, strength & heat-treatment response, compared to Unibar 200,250 and 300, while still possessing reasonable machinability and producing a good surface finish. Noise and vibration damping are good in this grade. Compares with standard-EN-1561-GJL-350 GG35 and Meehanite GA350.

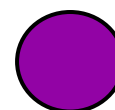
Unibar Profile and Size Range	
Round	25mm - 645mm + diameter
Square	Up to 520 mm x 520mm
Rectangle	Unibar is produced in a wide range of combinations, in height and width, up to 650mm x 510mm and 620mm x 370mm for example, other sizes to customer requirements can also be considered after consultation.
Ingots	Up to 1200mm diameter x 2100mm metre long (proof machined).
Ingot Blocks	Up to 800mm x 750mm x 2100mm 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/profiles to customer design available on special order, subject to discussion. Unibar 350 produced to customer order, with limited stocks available.

#### Chemistry (Typical Ranges):

(Subordinate to Mechanical Properties)

Element	Typical %
Carbon	2.9 - 3.45
Silicon	2.1 - 2.90
Manganese	0.60 - 0.80
Sulphur	0.04 - 0.07
Phosphorous	0.1 - 0.2
Others/Alloying	Residual
Iron	Balance

#### Grade colour code



Purple

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

Material specification	Material Section	Anticipated Values N/mm <sup>2</sup> (Taken from casting/bar)
Unibar 350 EN-GJL-350:1997 (GG35)	20mm - 40mm	315
	40mm - 80mm	280
	80mm - 150mm	250
	150mm - 300mm	225

Reference EN-1561-GJL-350 Table 1 Page 5

**Brinell Hardness:** (Range) 230-300 (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 'A' graphite flakes in accordance with ASTM A247. The rim zone contains fine types 'D' and 'E' interdendritic graphite. The core matrix is greater than 95% pearlitic. 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-350 can be hardened by conventional methods, to Rc 50 on the bar surface.

**Density:** 7.3 g/cc

**United Cast Bar Ltd**

[www.unitedcastbar.com](http://www.unitedcastbar.com)

(UCB Issue 8 10-06-2013 UB350)