

UCB DATA SHEET

Continuously Cast Iron

UNIBAR GFP

(AS-CAST)
GUIDANCE ONLY

Characteristics

Supplied in the as-cast condition offering excellent machinability and surface finishes, due to the mainly ferritic structure containing fine undercooled graphite type (D/E). The ferritic matrix encourages improved heat extraction from the material mould due to its greater heat conductivity minimising dimensional growth during the heating and cooling cycles.

The metallization processes are favored by the fine structure and the thermal conductivity of this material.

Noise and vibration damping are good in this grade.

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	Supplied to customer order and size, subject to discussion
Half Round	Supplied to customer order and size, subject to discussion
Square and Rectangle	Supplied to customer order and size, subject to discussion
Lengths	Standard 3 metres (other lengths available on request)
Supply condition	As-cast, turned and peeled (rounds). As-cast, milled (proof machined) and saw cut (rectangles and squares)
Non Standard	Profiles to customer design available on special order, subject to discussion.

Chemistry

ELEMENT	TYPICAL %
Carbon	3.15 – 3.55
Silicon	2.40 – 2.80
Manganese	0.40 – 0.60
Sulphur	0.02 Max
Phosphorous	less than 0.1
Titanium	0.15 – 0.30
Balance	Residual

Typical Ranges (Analysis at the discretion of UCB)

Mechanical Properties

MATERIAL GRADE	MATERIAL SECTION mm	TENSILE STRENGTH N/mm ² MINIMUM	HARDNESS (HB)	MATRIX
Unibar GFP	20 < D ≤ 50	230	150 – 210	Ferritic/ Pearlitic
	50 < D ≤ 100	210		
	100 < D ≤ 200	200		
	200 < D ≤ 400	180		

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

Ferritic structure with fine undercooled graphite flakes Type (ID/IE) In accordance with ISO 945. The rim and core contains type 'D' and 'E' interdendritic graphite. The rim structure is full ferritic and the core structure is predominantly ferritic with 15% to 40% max pearlite in the core.



(Photo 100x magnification)

Heat Treat Response

Unibar GFP cannot be hardened by heat-treatment.

Surface Treatment

Suitable for thermal spray systems for increased wear resistance and repairs.

Grade colour code



Density

7.3 g/cc