United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR GFP

(AS-CAST)
GUIDANCE ONLY

UNIBAR GFP

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 favoured by the fine structure and the thermal conductivity of this material.

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	Supplied to customer order and size, subject to
Half Round	discussion
Square and	Standard 3 metres (other lengths available on
Rectangle	request)
Supply condition	As-cast, turned, peeled, milled and cut
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 – 0.70
Sulphur	0.05 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/mm² 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

Grade colour code

Density

7.3 g/cc