United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR GF

(ANNEALED)
GUIDANCE ONLY

UNIBAR GF

Characteristics

A predominantly ferritic structure with fine undercooled graphite type (D/E). The fine film of graphite gives an improved surface finish with exceptional machinability, while the ferritic matrix encourages improved heat extraction from the material, due to its excellent heat conductivity, minimizing dimensional growth during the heating and cooling cycles. 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	
Square and Rectangle	Standard 3 metres (other lengths available on 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 GF	20 < D ≤ 50	150	140 – 180	Predominantly Ferritic
	50 < D ≤ 100	130		
	100 < D ≤ 200	115		
	200 < D ≤ 400	105		

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 containing fine undercooled type 'D' & 'E' graphite flakes in accordance with ISO 945. The rim also contains type 'D' and 'E' interdendritic graphite, but finer. The matrix structure is predominantly ferritic with a maximum of 10% pearlite throughout. Supplied in the annealed condition.



(Photo 100x magnification)

Heat Treat Response

Unibar GF 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