United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR GFMV

(ANNEALED)
GUIDANCE ONLY

UNIBAR GFMV

Characteristics

Unibar GFMV is predominantly ferritic with a max of 10% pearlite, and type D fine under cooled graphite, the refined grain size giving excellent machining and surface finish, along with the addition of Molybdenum and Vanadium giving a greatly improved hot strength, wear resistance and minimizes dimensional growth during the heating and cooling cycles (fully annealed).

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	Supplied to customer order and size, subject to
Half Round	discussion
Square and	Supplied to customer order and size, subject to
Rectangle	discussion
Supply condition	Supplied to customer order and size, subject to discussion
Non Standard	Profiles to customer design available on special order, subject to discussion.

Chemistry

ELEMENT	TYPICAL %
Carbon	3.0 – 3.8
Silicon	2.1 – 2.8
Manganese	0.40 – 0.60
Sulphur	0.025 – 0.05
Phosphorous	0.1 Max
Titanium	0.20 – 0.30
Molybdenum	0.40 – 0.60
Vanadium	0.07 – 0.17
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 GFMV	20 < D ≤ 50	200 – 250	130 – 180	Predominantly Ferritic
	50 < D ≤ 100	200 – 250		
	100 < D ≤ 200	200 – 250		
	200 < D ≤ 400	200 – 250		

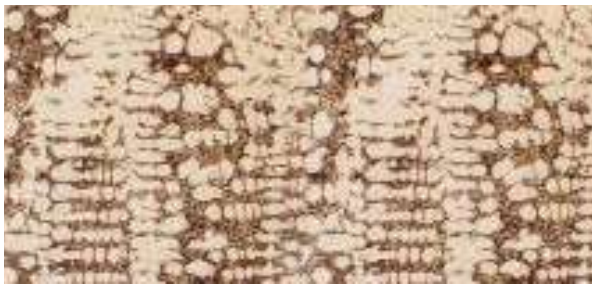
Taken from mid-radius of cast bar, not separately cast test bar.

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 ASTM A 247. 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 GFMV 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