United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 500-14

(EN 16482 EN GJS-500-14C)
GUIDANCE ONLY

UNIBAR 500-14

Characteristics

Unibar 500-14 is a ferritic solid solution strengthened Iron with an increased silicon level. Strength and ductility properties are improved, along with significant improvements in machining, tool life and surface finish over other similar grades. Improved dimensional and mechanical stability and consistent hardness levels throughout the section are also a feature, producing a material suitable for components subjected to increased pressure levels during operation.

Noise and vibration damping are good in this grade. Conforms with EN-GJS-500-7C (EN 16482).

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	Supplied to customer order and size, subject to
Square	discussion.
Rectangle	
Supply condition	Turned, peeled, milled and cut
Length	Standard 3080mm, other lengths available

Chemistry

ELEMENT	TYPICAL %
Carbon	3.00 – 3.50
Silicon	2.50 – 4.00
Manganese	0.10 – 0.40
Sulphur	0.005 – 0.020
Phosphorous	0.015 – 0.080
Magnesium	0.04 – 0.07
Others/Alloying	Residual
Iron	Balance

Typical Ranges (Analysis at the discretion of UCB)

Mechanical Properties

MATERIAL GRADE	MATERIAL SECTION mm	Tensile UTS N/mm^2 minimum	0.2% Proof Stress N/mm^2 minimum	Elongation % minimum	HB	
Unibar 500-14 EN 16482:EN GJS-500-14C	20 < D ≤ 60	500	400	14	170-215	Ferritic
	60 < D ≤ 120	480	390	12		
	120 < D ≤ 400	470	360	10		
	400 < D ≤ 700	470	360	10		

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

Contains type V & VI nodular (spheroidal) graphite in accordance with ISO 945. The rim contains approximately 200/250 nodules/mm^2, and is predominately ferritic with the core containing 100/200 nodules/mm^2. The core matrix is mixed ferritic/pearlitic (10% pearlite). Chill carbides will be less than 5%, well dispersed.

Heat Treat Response

Unibar-500-14 is not recommended for hardening and tempering.

Grade colour code

Density

7.3 g/cc