

Continuously Cast Iron

Unibar 500+ (will conform to EN 16482 EN GJS-500-7C) (Guidance only)

Characteristics:

Unibar 500+ offers higher wear resistance; strength & heat-treatment response compared to Unibar 400-15, and improved ductility (elongation) against standard 500-7, while still possessing good machinability and excellent surface finish. Noise and vibration damping are good in this grade. Complies with the mechanical characteristics required and the values of hardness of Unibar 400-15 and Unibar 500-7.

Size Range:

UNIBAR STANDARD SIZES AND SUPPLY.	
Round	25mm – 700mm
Square	25mm x 25mm – 550mm x 550mm
Rectangle	Up to 650mm x 520mm
Supply condition	As-cast, turned, peeled, milled, cut.
Length	Standard 3080mm, other lengths available.

Chemistry:

ELEMENT	TYPICAL %
Carbon	3.25 - 3.70
Silicon	2.40 - 3.00
Manganese	0.10 - 0.40
Sulphur	0.005 – 0.020
Phosphorous	0.015 – 0.08
Magnesium	0.04 – 0.07
Others/Alloying	Residual
Iron	Balance

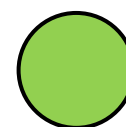
Typical Ranges: (Analysis at the discretion of UCB)

Mechanical Properties:

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

MATERIAL GRADE	MATERIAL SECTION	TENSILE (UTS) N/mm ²	0.2% PROOF STRESS	ELONGATION	BHN	MATRIX
Unibar 500+ will conform to EN-16482:EN GJS-500-7C	20 < D/B ≤ 60	500	320	15	170 - 210	Ferritic
	60 < D/B ≤ 120	450	300	14		
	120 < D/B ≤ 400	420	290	11		
	400 < D/B ≤ 700	420	290	11		

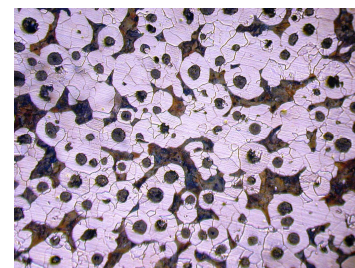
Grade colour code



Density: 7.3 g/cc

Brinell Hardness (BHN): 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/mm², and is predominately ferritic (>70%) with the core containing 90/150 nodules/mm². The core matrix is mixed ferritic/pearlitic (10–40% pearlite). Chill carbides will be less than 5%, well dispersed.



Heat Treat Response: Unibar 500+ can be oil quenched and surface hardened, this material can also be surface hardened by most other conventional methods. Can be Austempered however the higher pearlitic 600-3 and 700-2 grades are more suitable.