

## Continuously Cast Iron

### Unibar 600-3 (EN 16482 EN GJS-600-3C) (Guidance only)

#### Characteristics:

Unibar 600-3 offers reasonable machinability and excellent surface finish, combined with high wear resistance and increased strength, heat treatment response is good compared to Unibar 400-15 and 500-7. Noise and vibration damping are good in this grade. Conforms with EN-16482:2014:EN-GJS-600-3C.

#### Size Range:

UNIBAR STANDARD SIZES AND SUPPLY.	
Round	25mm – 700mm
Square	25mmx 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

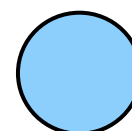
Typical Ranges: (Analysis at the discretion of UCB)

#### Mechanical Properties:

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

MATERIAL GRADE	MATERIAL SECTION	TENSILE (UTS) N/mm <sup>2</sup>	0.2% PROOF STRESS N/mm <sup>2</sup>	ELONGATION	HARDNESS (BHN)	MATRIX
Unibar 600-3 EN-16482:EN GJS-600-3C	20 < D/B ≤ 60	600	370	3	200 - 290	Pearlitic - Ferritic
	60 < D/B ≤ 120	600	360	2		
	120 < D/B ≤ 400	550	340	1		
	400 < D/B ≤ 700	550	340	1		

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/square mm, and is predominantly pearlitic with the core containing 90/150 nodules/sq. mm. The core matrix is greater than 50% pearlite with some ferrite. Chill carbides will be less than 5%, well dispersed.



**Heat Treat Response:** 600-3 is more responsive to heat treatment than the predominantly ferritic grades, in particular hardening and tempering, this along with all conventional surface hardening techniques. And potential hardness of 50Rc on the surface and increased depth of hardness through the section.