United Cast Bar

UCB DATA SHEET

Continuously Cast Iron

UNIBAR 400-18RT

(EN-GJS-400-18C-RT, EN 16482)
GUIDANCE ONLY

UNIBAR 400-18RT

Characteristics

Offers superior machinability combined with good room temperature impact, fatigue, electrical conductivity and magnetic permeability, along with an increased ductility over 400-15.
Noise and vibration damping are good in this grade.
Compares with standard EN-GJS-400-18C-RT (EN 16482).

Size Range

UNIBAR STANDARD SIZES AND SUPPLY	
Round	25mm – 700mm
Square	25mm x 25mm – 625mm x 625mm
Rectangle	Up to 750mm x 550mm
Supply condition	As-cast, turned, peeled, milled and cut
Length	Standard 3080mm, other lengths available

Chemistry

ELEMENT	TYPICAL %
Carbon	3.25 – 3.70
Silicon	2.40 – 3.00
Manganese	0.10 – 0.60
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

		ANTICIPATED VALUES					
MATERIAL GRADE	MATERIAL SECTION mm	Tensile strength UTS N/mm² minimum	0.2% Proof Stress N/mm² minimum	Elongation % minimum	HB	Charpy impact Joules (Average of 3 tests at room temperature)	MATRIX
Unibar 400 -18RT	25 < D ≤ 60	400	250	18	120-180	14	Ferritic
	60 < D ≤ 120	390	250	15		14	
	120 < D ≤ 400	370	240	12		12	
	400 < D ≤ 700+	370	240	12		12	

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/mm², and is predominately ferritic (>95%), with the core containing 90/150 nodules/mm². The core matrix is essentially ferritic with ≤5% pearlite. Chill carbides will be less than 5%, well dispersed.



(Photo 100x magnification)

Heat Treat Response

Unibar 400-18RT is not recommended for hardening and tempering. The higher pearlitic grades Unibar 600-3 and 700-2 are more suitable.

Grade colour code

Density

7.3 g/cc