USEFUL INFORMATION

BS 970 (1991) Tolerances

BS 970 (1991) TOLERANCES FOR COLD DRAWN / TURNED BAR		
Section	**Size**	**Permitted variation**
Round Drawn	≥6 ≤18mm	+0 to -0.070 mm (0.0028")
	>18 ≤30mm	+0 to -0.085 mm (0.0033")
	>30 ≤50mm	+0 to -0.100 mm (0.0039")
	>50 ≤80mm	+0 to -0.120 mm (0.0047")
	>80 ≤100mm	+0 to -0.140 mm (0.0055")
Round Turned	>80 ≤120mm	+0 to -0.140 mm (0.0055")
	>120 ≤180mm	+0 to -0.160 mm (0.0063")
	>180 ≤250mm	+0 to -0.185 mm (0.0073")
	>250 ≤315mm	+0 to -0.210 mm (0.0083")
Square and hexagon Drawn	≥6 ≤18mm	+0 to -0.090 mm (0.0035")
	>18 ≤30mm	+0 to -0.110 mm (0.0043")
	>30 ≤50mm	+0 to -0.130 mm (0.0051")
	>50 ≤80mm	+0 to -0.160 mm (0.0063")
	>80 ≤105mm	+0 to -0.250 mm (0.0098")
Flat (width) Drawn	<18mm	+0 to -0.110 mm (0.0043")
	>18 ≤30mm	+0 to -0.130 mm (0.0051")
	>30 ≤50mm	+0 to -0.160 mm (0.0063")
	>50 ≤80mm	+0 to -0.190 mm (0.0075")
	>80 ≤100mm	+0 to -0.220 mm (0.0087")
	>100 ≤130mm	+0 to -0.350 mm (0.0138")
	>130 ≤160mm	+0 to -1.00 mm (0.0394")
	>160 ≤320mm	+0 to -2.00 mm (0.0787")
Flat (thickness) Drawn	<18mm	+0 to -0.110 mm (0.0043")
	>18 ≤30mm	+0 to -0.130 mm (0.0051")
	>30 ≤50mm	+0 to -0.250 mm (0.0098")
	>50 ≤80mm	+0 to -0.350 mm (0.0138")

BS 970 (1991) TOLERANCES FOR HOT ROLLED AND ROUGH TURNED BAR			
Section	**Size**	**Diameter +/- mm**	**Out of section *a**
Rounds	>76 ≤90 mm	1.3 mm	2.0 mm
	>90 ≤120 mm	1.5mm	2.3 mm
	>120 ≤160 mm	2.0 mm	3.0 mm
	>160 ≤200 mm	2.5 mm	3.8 mm
	>200 mm	3.0 mm	4.5 mm
Definition (*a), The difference between the maximum & minimum diameter of the bar measured at the same cross section.			

BS 970 (1991) STRAIGHTNESS TOLERANCES		
Section	**Steel grade**	**Permitted variation**
Rounds	<0.25 % carbon	1 in 1000
	≥0.25 % carbon, alloys & all heat treated grades	1 in 500
Squares and Hexagons	<0.25 % carbon ≤ 75mm over ≥75mm	1 in 750 1 in 500
	≥0.25 % carbon, alloys & all heat treated grades	1 in 375
Flats	<0.25 % carbon	1 in 500
	≥0.25 % carbon, alloys & all heat treated grades	1 in 375
Permitted variation shall be measured as a maximum deviation from straightness in any 3000mm portion of the bar.		