

Tolerances for hot rolled round and square bar and rough turned rounds as per BS 970 : Part 1 : 1996				
Size	Permitted Variation			
	General Applications			
	Primary rolled round material		Re-rolled material	
	Dia	Out of section	Dia or width across flats	Out of section
mm	mm	mm	mm	mm
≤ 16	-	-	0.2	0.3
> 16 ≤ 26	-	-	0.3	0.5
> 26 ≤ 38	-	-	0.4	0.6
> 38 ≤ 51	-	-	0.5	0.8
> 51 ≤ 64	-	-	0.6	0.9
> 64 ≤ 76	-	-	0.7	1.1
> 76 ≤ 90	1.3	2.0	0.7	1.1
> 90 ≤ 120	1.5	2.3	0.8	1.2
> 120 ≤ 160	2.0	3.0		
> 160 ≤ 200	2.5	3.8		
> 200	3.0	4.5		

Tolerances for cold drawn bar as per BS 970 : Part 3 : 1991		
Section	Size diameter or width across flats	Permitted variation
	mm	mm
Round	≤ 6 ≤ 18	+ 0 to - 0.070
	> 18 ≤ 30	+ 0 to - 0.085
	> 30 ≤ 50	+ 0 to - 0.100
	> 50 ≤ 80	+ 0 to - 0.120
	> 80 ≤ 100	+ 0 to - 0.140
Square and Hexagon	> 6 ≤ 18	+ 0 to - 0.090
	> 18 ≤ 30	+ 0 to - 0.110
	> 30 ≤ 50	+ 0 to - 0.130
	> 50 ≤ 80	+ 0 to - 0.160
	> 80 ≤ 105	+ 0 to - 0.250
Flat (width)	< 18	+ 0 to - 0.110
	> 18 ≤ 30	+ 0 to - 0.130
	> 30 ≤ 50	+ 0 to - 0.160
	> 50 ≤ 80	+ 0 to - 0.190
	> 80 ≤ 100	+ 0 to - 0.220
	> 100 ≤ 130	+ 0 to - 0.350
	> 130 ≤ 160	+ 0 to - 1.000
	> 160 ≤ 320	+ 0 to - 1.000
Flat (thickness)	< 18	+ 0 to - 0.110
	> 18 ≤ 30	+ 0 to - 0.130
	> 30 ≤ 50	+ 0 to - 0.250
	> 50 ≤ 80	+ 0 to - 0.350

ISO Tolerances						
h13	h12	h11	h10	h9	h8	h7
Tolerances as per table below. The total tolerance is taken as MINUS						
i.e 45mm dia h9 = -0.062						
k13	k12	k11	k10	k9	k8	k7
Tolerances as per table below. The total tolerance is taken as PLUS						
i.e 45mm dia k9 = +0.062						
j13	j12	j11	j10	j9	j8	j7
Tolerances as per table below. The total tolerance is taken as DIVIDED OVER PLUS AND MINUS						
i.e 45mm dia j9 = +/-0.031						

Nominal Sizes							
mm	13	12	11	10	9	8	7
> 1 to 3	0.140	0.100	0.050	0.040	0.025	0.014	0.010
> 3 to 6	0.180	0.120	0.075	0.048	0.030	0.018	0.012
> 6 to 10	0.220	0.150	0.090	0.058	0.036	0.022	0.015
> 10 to 18	0.270	0.180	0.110	0.070	0.043	0.027	0.018
> 18 to 30	0.330	0.210	0.130	0.084	0.052	0.033	0.021
> 30 to 50	0.390	0.250	0.150	0.100	0.062	0.039	0.025
> 50 to 80	0.460	0.300	0.190	0.120	0.074	0.046	0.030
> 80 to 120	0.540	0.350	0.220	0.140	0.087	0.054	0.035
> 120 to 180	0.630	0.400	0.250	0.160	0.100	0.063	0.040

The tolerances shown above are normally applied to metric sizes of drawn, turned and ground finish bright steel bars.

Every care has been taken in the preparation of this technical data, however no liability can be accepted for any errors nor the consequences arising from such errors.