DIMENSIONAL TOLARANCES / SURFACE QUALITY CLASSES

Dimensional tolerances for rolled steel

Round steel

Diameter (mm)	Normal limit values according to DIN EN 10060 (mm)
10-15	+/- 0.4
16-25	+/- 0.5
26-35	+/- 0.6
36-50	+/- 0.8
52-80	+/- 1.0
85-100	+/- 1.3
105	+/- 1.5
110-120	+/- 1.5
125-160	+/- 2.0
165-200	+/- 2.5
210-220	+/- 3.0
230-250	+/- 4.0

Round steel

Diameter (mm)	Limit values for precision according to DIN EN 10060 (mm)
10-12	+/- 0.15
13-22	+/- 0.5
24-30	+/- 0.6
32-40	+/- 0.8
42-52	+/- 1.0
55-75	+/- 1.3

Square

Page length (mm)	Limit dimension according to DIN EN 10059 (mm)
8-14	+/- 0.4
15-25	+/- 0.5
26-35	+/- 0.6
40-50	+/- 0.8
55-90	+/- 1.0
100	+/- 1.3
110-120	+/- 1.5
130-150	+/- 1.8

Dimensional tolerances for bright steel

Dimension range	Tolerance bands in µ = 0.001 mm																						
	e6	e7	e8	f6	f7	f8	g6	g7	g8	h6	h7	h8	h9	h10	h11	h12	h13	j6	j7	js6	k6	k7	k8
about 1 – 3 mm	-14 -20	-14 -24	-14 -28	-6 -12	-6 -16	-6 -20	-2 -8	-2 -12	-2 -16	0 -6	0 -10	0 -14	0 -25	0 -40	0 -60	0 -100	0 -140	+4 -2	+6 -4	+3 -3	+6 0	+10 0	+14 0
about 3 – 6 mm	-20 -28	-20 -32	-20 -38	-10 -18	-10 -22	-10 -28	-4 -12	-4 -16	-4 -22	0 -8	0 -12	0 -18	0 -30	0 -48	0 -75	0 -120	0 -180	+6 -2	+8 -4	+4 -4	+9 +1	+13 +1	+18 0
> about 6 – 10 mm	-25 -34	-25 -40	-25 -47	-13 -22	-13 -28	-13 -35	-5 -14	-5 -20	-5 -27	0 -9	0 -15	0 -22	0 -36	0 -58	0 -90	0 -150	0 -220	+7 -2	+10 -5	+4.5 -4.5	+10 +1	+16 +1	+22 0
> about 10 – 18 mm	-32 -43	-32 -50	-32 -59	-16 -27	-16 -34	-16 -43	-6 -17	-6 -24	-6 -33	0 -11	0 -18	0 -27	0 -43	0 -70	0 -110	0 -180	0 -270	+8 -3	+12 -6	+5.5 -5.5	+12 +1	+19 +1	+27 0
> about 18 – 30 mm	-40 -53	-40 -61	-40 -73	-20 -33	-20 -41	-20 -53	-7 -20	-7 -28	-7 -40	0 -13	0 -21	0 -33	0 -52	0 -84	0 -130	0 -210	0 -330	+9 -4	+13 -8	+6.5 -6.5	+15 +2	+23 +2	+33 0
> about 30 – 50 mm	-50 -66	-50 -75	-50 -89	-25 -41	-25 -50	-25 -64	-9 -25	-9 -34	-9 -48	0 -16	0 -25	0 -39	0 -62	0 -100	0 -160	0 -250	0 -390	+11 -5	+15 -10	+8 -8	+18 +2	+27 +2	+39 0
> about 50 – 80 mm	-60 -79	-60 -90	-60 -106	-30 -49	-30 -60	-30 -76	-10 -29	-10 -40	-10 -56	0 -19	0 -30	0 -46	0 -74	0 -120	0 -190	0 -300	0 -460	+12 -7	+18 -12	+9.5 -9.5	+21 +2	+32 +2	+46 0
> about 80 – 120 mm	-72 -94	-72 -107	-72 -126	-36 -58	-36 -71	-36 -90	-12 -34	-12 -47	-12 -66	0 -22	0 -35	0 -54	0 -87	0 -140	0 -220	0 -350	0 -540	+13 -9	+20 -15	+11 -11	+25 +3	+38 +3	+54 0
> about 120 – 180 mm	-85 -110	-85 -125	-85 -148	-43 -68	-43 -83	-43 -106	-14 -39	-14 -54	-14 -77	0 -25	0 -40	0 -63	0 -100	0 -160	0 -250	0 -400	0 -630	+14 -11	+22 -18	+12.5 -12.5	+28 +3	+43 +3	+63 0
> about 180 – 250 mm	-100 -129	-100 -146	-100 -172	-50 -79	-50 -96	-50 -122	-15 -44	-15 -61	-15 -87	0 -29	0 -46	0 -72	0 -115	0 -185	0 -290	0 -460	0 -720	+16 -13	+25 -21	+14.5 -14.5	+33 +4	+50 +4	+72 0

Bright steel surface quality classes (according to DIN EN 10277-1)

Status	Class			
	1	2	3	4
Permissible depth of voids	max. 0.3 mm for d ≤ 15 mm max. 0.02 · d for 15 < d ≤ 100 mm	max. 0.3 mm for d ≤ 15 mm max. 0.02 · d for 15 < d ≤ 75 mm max. 1.5 mm for d > 75 mm	max. 0.2 mm for d ≤ 20 mm max. 0.01 · d for 20 < d ≤ 75 mm max. 0.75 mm for d > 75 mm	For the relevant dimension, better than the corresponding specification for quality category 3
Maximum percentage of delivery dimensions composed of voids above the specified limit	4 %	1 %	1 %	0.2 %