

DIN 861/ISO 3650

Gauge Blocks

Nominal length range mm		Permissible tolerances and variances (µm)												
		Grades 00 and K				Grade 0			Grade 1			Grade2		
		Tolerance on nominal length at all points	Permissible length variation	Max. deviation from flatness	Tolerance on nominal length at all points	Permissible length variation	Max. deviation from flatness	Tolerance on nominal length at all points	Permissible variation in length	Max. deviation from flatness	Tolerance on nominal length at all points	Permissible length variation	Max. deviation from flatness	
Over	Up to (including)	00	K											
-	10	±0.06	±0.20	0.05	0.05	±0.12	0.10	0.10	±0.20	0.16	0.15	±0.45	0.30	0.25
10	25	±0.07	±0.30	0.05	0.05	±0.14	0.10	0.10	±0.30	0.16	0.15	±0.60	0.30	0.25
25	50	±0.10	±0.40	0.06	0.05	±0.20	0.10	0.10	±0.40	0.18	0.15	±0.80	0.30	0.25
50	75	±0.12	±0.50	0.06	0.05	±0.25	0.12	0.10	±0.50	0.18	0.15	±1.00	0.35	0.25
75	100	±0.14	±0.60	0.07	0.05	±0.30	0.12	0.10	±0.60	0.20	0.15	±1.20	0.35	0.25
100	150	—	±0.80	0.08	0.05	±0.40	0.14	0.10	±0.80	0.20	0.15	±1.60	0.40	0.25
150	200	—	±1.00	0.09	0.10	±0.50	0.16	0.15	±1.00	0.25	0.18	±2.00	0.40	0.25
200	250	—	±1.20	0.10	0.10	±0.60	0.16	0.15	±1.20	0.25	0.18	±2.40	0.45	0.25
250	300	—	±1.40	0.10	0.10	±0.70	0.18	0.15	±1.40	0.25	0.18	±2.80	0.50	0.25
300	400	—	±1.80	0.12	0.10	±0.90	0.20	0.15	±1.80	0.30	0.18	±3.60	0.50	0.25
400	500	—	±2.20	0.14	0.10	±1.10	0.25	0.15	±2.20	0.35	0.18	±4.40	0.60	0.25
500	600	—	±2.60	0.16	0.15	±1.30	0.25	0.18	±2.60	0.40	0.20	±5.00	0.70	0.25
600	700	—	±3.00	0.18	0.15	±1.50	0.30	0.18	±3.00	0.45	0.20	±6.00	0.70	0.25
700	800	—	±3.40	0.20	0.15	±1.70	0.30	0.18	±3.40	0.50	0.20	±6.50	0.80	0.25
800	900	—	±3.80	0.20	0.15	±1.90	0.35	0.18	±3.80	0.50	0.20	±7.50	0.90	0.25
900	1000	—	±4.20	0.25	0.15	±2.00	0.40	0.18	±4.20	0.60	0.20	±8.00	1.00	0.25

ASME B89.1.9-2002

MAXIMUM PERMITTED DEVIATIONS OF THE LENGTH AT ANY POINT AND TOLERANCE ON VARIATION IN LENGTH FOR INCH GAUGE BLOCKS

Nominal Length Range l_n in inches	Calibration Grade K		Grade 00		Grade 0		Grade AS-1		Grade AS-2	
	Limit Deviations of Length at any Point From Nominal Length $\pm l_p$ µin.	Tolerance for the Variation in Length l_v µin.	Limit Deviations of Length at any Point From Nominal Length $\pm l_p$ µin.	Tolerance for the Variation in Length l_v µin.	Limit Deviations of Length at any Point From Nominal Length $\pm l_p$ µin.	Tolerance for the Variation in Length l_v µin.	Limit Deviations of Length at any Point From Nominal Length $\pm l_p$ µin.	Tolerance for the Variation in Length l_v µin.	Limit Deviations of Length at any Point From Nominal Length $\pm l_p$ µin.	Tolerance for the Variation in Length l_v µin.
$l_n \leq 0.05$	12	2	4	2	6	4	12	6	24	12
$0.05 < l_n \leq 0.4$	10	2	3	2	5	4	8	6	18	12
$0.45 < l_n \leq 1$	12	2	3	2	6	4	12	6	24	12
$1 < l_n \leq 2$	16	2	4	2	8	4	16	6	32	12
$2 < l_n \leq 3$	20	2	5	3	10	4	20	6	40	14
$3 < l_n \leq 4$	24	3	6	3	12	5	24	8	48	14
$4 < l_n \leq 5$	32	3	8	3	16	5	32	8	64	16
$5 < l_n \leq 6$	32	3	8	3	16	5	32	8	64	16
$6 < l_n \leq 7$	40	4	10	4	20	6	40	10	80	16
$7 < l_n \leq 8$	40	4	10	4	20	6	40	10	80	16
$8 < l_n \leq 10$	48	4	12	4	24	6	48	10	104	18
$10 < l_n \leq 12$	56	4	14	4	28	7	56	10	112	20
$12 < l_n \leq 16$	72	5	18	5	36	8	72	12	144	20
$16 < l_n \leq 20$	88	6	20	6	44	10	88	14	176	24
$20 < l_n \leq 24$	104	6	25	6	52	10	104	16	200	28
$24 < l_n \leq 28$	120	7	30	7	60	12	120	18	240	28
$28 < l_n \leq 32$	136	8	34	8	68	12	136	20	260	32
$32 < l_n \leq 36$	152	8	38	8	76	14	152	20	300	36
$36 < l_n \leq 40$	160	10	40	10	80	16	168	24	320	40