ISO 2768 General Tolerance Chart

Values per ISO 2768-1:1989 (classes f, m, c, v) and ISO 2768-2:1989 (classes H, K, L); DIN ISO 2768 is identical. Nominal sizes and tolerances in mm. Shaded columns are ISO 2768-mK, the most common drawing note. Below 0.5 mm the standard gives no general tolerance. Check the drawing and the standard where they apply.

ISO 2768-1: Linear dimensions

Permissible deviation ± mm

Nominal range	f	m	c	v
0.5–3	±0.05	±0.1	±0.2	—
>3–6	±0.05	±0.1	±0.3	±0.5
>6–30	±0.1	±0.2	±0.5	±1.0
>30–120	±0.15	±0.3	±0.8	±1.5
>120–400	±0.2	±0.5	±1.2	±2.5
>400–1000	±0.3	±0.8	±2.0	±4.0
>1000–2000	±0.5	±1.2	±3.0	±6.0
>2000–4000	—	±2.0	±4.0	±8.0

ISO 2768-1: External radii and chamfer heights

Permissible deviation ± mm

Nominal range	f	m	c	v
0.5–3	±0.2	±0.2	±0.4	±0.4
>3–6	±0.5	±0.5	±1.0	±1.0
>6	±1.0	±1.0	±2.0	±2.0

ISO 2768-1: Angular dimensions

Permissible deviation, shorter side of the angle in mm

Shorter side	f	m	c	v
≤ 10	±1°	±1°	±1°30′	±3°
>10–50	±0°30′	±0°30′	±1°	±2°
>50–120	±0°20′	±0°20′	±0°30′	±1°
>120–400	±0°10′	±0°10′	±0°15′	±0°30′
>400	±0°5′	±0°5′	±0°10′	±0°20′

ISO 2768-2: Straightness and flatness

Tolerance in mm, by longer side of the surface or length of the edge

Nominal range	H	K	L
≤ 10	0.02	0.05	0.1
>10–30	0.05	0.1	0.2
>30–100	0.1	0.2	0.4
>100–300	0.2	0.4	0.8
>300–1000	0.3	0.6	1.2
>1000–3000	0.4	0.8	1.6

ISO 2768-2: Perpendicularity

Tolerance in mm, by shorter side of the angle

Nominal range	H	K	L
≤ 100	0.2	0.4	0.6
>100–300	0.3	0.6	1.0
>300–1000	0.4	0.8	1.5
>1000–3000	0.5	1.0	2.0

ISO 2768-2: Symmetry

Tolerance in mm, by nominal length

Nominal range	H	K	L
≤ 100	0.5	0.6	0.6
>100–300	0.5	0.6	1.0
>300–1000	0.5	0.8	1.5
>1000–3000	0.5	1.0	2.0

ISO 2768-2: Circular run-out

Feature	H	K	L
Any size	0.1	0.2	0.5

Reading the note on a drawing

Drawing note	Linear class	Geometric class	Typical use
ISO 2768-mK	m, medium	K, medium	The default of general machining. Most drawings we quote carry this note
ISO 2768-fH	f, fine	H, tight	Machined parts with several mating faces; halves the m allowances without per-feature callouts
ISO 2768-cL	c, coarse	L, loose	Welded frames, flame-cut and sawn parts, not finish machining
ISO 2768-m (one letter)	m, medium	none invoked	Only Part 1 applies; geometry is uncontrolled unless drawn

ISO 2768-2 covers straightness, flatness, perpendicularity, symmetry and circular run-out only. Position, concentricity, cylindricity and profile are not in the standard and stay uncontrolled unless drawn. Fits need an ISO 286 callout such as 25 H7. Threads carry their own tolerance classes.

Need a part made to these tolerances? Send a drawing, sketch or sample. From 1 piece, quote in 12 hours.

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