

Technical information | Aluminium

Tolerances for pressure die castings (DIN 1688, part 4 : 1986-08)*

Table 1: Tolerances of dimensions not related to the shape, linear dimensions
(lengths, widths, heights, central distances, diameters, roundings)

Spatial diagonal area ¹	Degree of accuracy	Shape dependency	Nominal measuring range														
			up to 18	over 18 to 30	over 30 to 50	over 50 to 80	over 80 to 120	over 120 to 180	over 180 to 250	over 250 to 315	over 315 to 400	over 400 to 500	over 500 to 630	over 630 to 800	over 800 to 1000	over 1000 to 1250	
up to 180	GTA 13	shape-related	±0.14	±0.17	±0.20	±0.23	±0.27	±0,32									
		non-shape-related	±0.24	±0.27	±0.30	±0.33	±0.37	±0.42									
over 50 to 500	GTA 13/5	shape-related	±0.17	±0.20	±0.25	±0.30	±0.35	±0.40	±0.45	±0.50	±0.55	±0.60					
		non-shape-related	±0.32	±0.35	±0.40	±0,45	±0.50	±0.55	±0.60	±0.65	±0.70	±0.75					
over 180	GTA 14	shape-related	±0.22	±0.26	±0.31	±0.37	±0.44	±0.50	±0.60	±0.65	±0.70	±0.80	±0.90	±1.00	±1.20	±1.30	
		non-shape-related	±0.42	±0,46	±0.51	±0.57	±0.64	±0.70	±0.80	±0.85	±0.90	±1.00	±1.10	±1.20	±1.40	±1.50	
over 500	GTA 14/5	shape-related	±0.25	±0.35	±0.40	±0.45	±0.55	±0.65	±0.75	±0.80	±0.85	±0.95	±1.10	±1.20	±1.40	±1.60	
		non-shape-related	±0.55	±0.65	±0.70	±0.75	±0.85	±0.95	±1.00	±1.10	±1.10	±1.20	±1.40	±1.50	±1.70	±1.90	

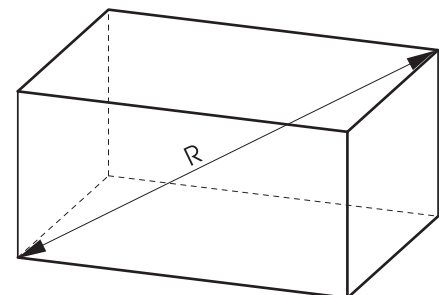
Table 2: Dimensional cast variations for thicknesses
(wall thicknesses, fins, ribs)

Spatial diagonal area ¹	Degree of accuracy	Shape dependency	Nominal measuring range		
			up to 18	over 18 to 30	over 30 to 50
up to 180	GTA 13	shape-related	±0.15	±0.20	±0.20
		non-shape-related	±0.25	±0.30	±0.30
over 50 to 500	GTA 13/5	shape-related	±0.20	±0.25	±0.30
		non-shape-related	±0.35	±0.40	±0.45
over 180	GTA 14	shape-related	±0.25	±0.30	±0.35
		non-shape-related	±0.45	±0.50	±0.55
over 500	GTA 14/5	shape-related	±0.30	±0.40	±0.45
		non-shape-related	±0.55	±0.65	±0.70

1) Determining the spatial diagonal:

The spatial diagonal R is determined by the extreme points of the casting. It is calculated from the nominal dimensions of the prismatic body which delimits the casting whatever its shape.

$$R = \sqrt{l^2 + b^2 + h^2} \text{ (spatial diagonal)}$$



Shape-related dimensions are those in the same parts of the tool. Non-shape-related dimensions are those created by the interaction of movable tool components, e.g. wall thicknesses, base thicknesses and dimensions affected by additives or slides.

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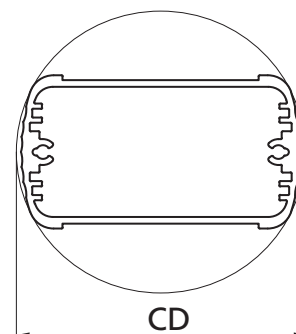
Tolerances for aluminium profiles (DIN EN 12020-2 : 2001-07)*

Cross-section dimensions

General information

The limit deviations of the following dimensions are specified in the corresponding tables 1 and 2.

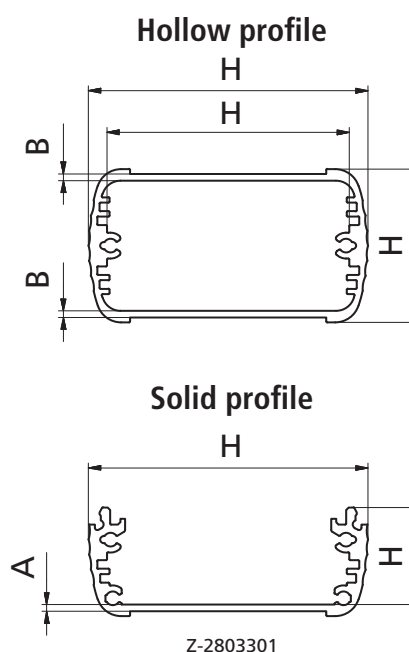
- A: Wall thicknesses, except for those which enclose the hollow spaces in hollow profiles
- B: Wall thicknesses which enclose the hollow spaces in hollow profiles, except for wall thicknesses between two hollow spaces
- H: All dimensions except for wall thickness
- CD: Circumscribing circle



Limit deviations for dimensions other than wall thickness

Table 1 – Limit deviations for cross-section dimensions

Dimension H		Limit deviations for H
over	up to	
-	10	±0.15
10	15	±0.20
15	30	±0.25
30	45	±0.30
45	60	±0.40
60	90	±0.45
90	120	±0.60
120	150	±0.80
150	180	±1.0
180	240	±1.2
240	300	±1.5



Limit deviations of wall thicknesses of solid and hollow profile

Table 2 – Limit deviations of the wall thicknesses

Nominal wall thickness A and B		Limit deviations for			
over	up to	Wall thickness A (Circumscribing circle)		Wall thickness B (Circumscribing circle)	
		CD ≤ 100	100 < CD ≤ 300	CD ≤ 100	100 < CD ≤ 300
-	1.5	±0.15	±0.20	±0.20	±0.30
1.5	3	±0.15	±0.25	±0.25	±0.40
3	6	±0.20	±0.30	±0.40	±0.60
6	10	±0.25	±0.35	±0.60	±0.80