

The ASTM D3917 specification defines tolerances applicable to pultruded profiles with traditional geometric shapes as: C, H, Angles, Hollow profiles, Rods, etc. based on thermosetting resins.

Custom shapes based on customer design can have different tolerances and must be agreed in the supply contract phase.

SHAPE AND THICKNESS DIMENSIONAL TOLERANCES

A = $\pm 4\%$ of specified dimension (but not more than 2.39 mm) **(see note)**

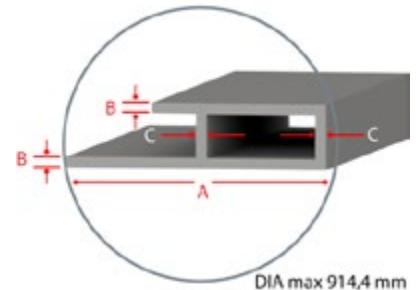
B (wall thickness - open shape) = $\pm 10\%$ of specified dimension but not exceeding either ± 0.25 mm **(see note)**

B (flat profiles up to 304.8 till 1981.2 mm) = $\pm 15\%$ of specified dimension to 3.175 mm thickness but not exceeding ± 0.25 mm min

B (Flat Sheets up to 304.8 till 1981.2 mm) = $\pm 10\%$ of specified dimension up 3.175 mm thickness but not exceeding ± 1.27 mm max

C (wall thickness - close shape) = $\pm 20\%$ of specified dimension but not exceeding 0.25 mm min **(see note)**

Note: APPLICABLE TO SHAPES THAT CAN BE INSCRIBED IN A 914.4 mm MAX DIAMETER CIRCLE



STRAIGHTNESS

Rods and square, hexagonal, and octagonal bars – all dimensions:

D = 2.5 mm/m

Rectangular bars up to 38.07 mm width and to 2.4 mm thickness, included:

D = 4.17 mm/m

Rectangular bars up to 38.07 mm width and over 2.4 mm thickness:

D = 3.33 mm/m

Rectangular bars over 38.07 mm width and all thicknesses:

D = 3.33 mm/m

Open shapes, all dimensions:

D = 4.17 mm/m

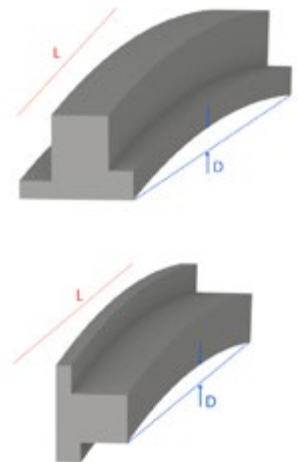
Closed shapes, all dimensions:

D = 2.5 mm/m

Flat Sheet up to 304.8 mm till 1981.2 mm

D = 2.5 mm/m

MEASURED WHEN WEIGHT OF PULTRUSION MINIMIZES THE DEVIATION BY CONTACT WITH FLAT SURFACE



TWIST

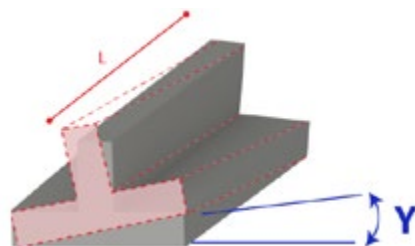
Bars and open shapes :

All dimensions and thickness: permitted $Y = 3.28^\circ/\text{m}$ twist up to 6. m in length

Closed shapes:

All dimensions and thicknesses : permitted $Y = 3.28^\circ/\text{m}$ twist up to 6 m in length, but not more than 7° total

THE MEASUREMENT MUST BE DONE KEEPING ONE SIDE OF THE PROFILE WELL FIXED ON A FLAT SURFACE AND MEASURING THE ANGLE DEVIATION ON THE OPPOSITE SIDE WHEN THE PROFILE WEIGHT MINIMIZES THE TWIST.



FLATNESS (FLAT SURFACES)

Bars and open flat shapes :

- Width up to 25.4 mm

permitted a vertical deviation of $0.2 \text{ mm} \times W$ (mm)

- Width over 25.4 mm

permitted a vertical deviation of $0.008 \text{ mm} \times W$ (mm) for all dimensions in terms of thickness

EXAMPLE:

IF "W" = 120 mm, THE VERTICAL DEVIATION "D" IS: $0.008 \times 120 = 0.96 \text{ mm}$

Flat shapes

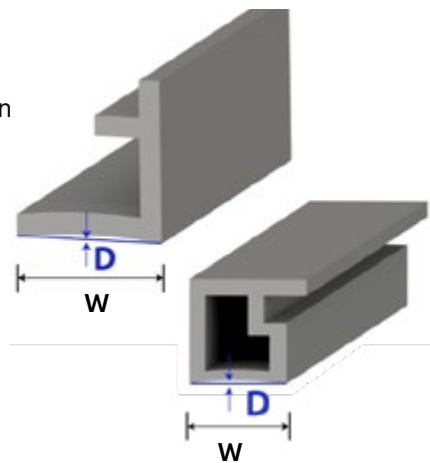
permitted a vertical deviation of $0.008 \text{ mm} \times W$ (mm) 6.35 mm max. for all dimensions in terms of thickness

Closed shapes

- Thickness up to 4.75 mm included, $D = 0.012 \text{ mm} \times W$ (mm)

- Thickness over 4.8 mm included, $D = 0.008 \text{ mm} \times W$ (mm)

THE MEASUREMENT MUST BE DONE ON THE LOWER THICKNESS FACE



ANGULARITY

Leg thickness up to 19.02 mm included $\pm 2^\circ$

THE STANDARD DOES NOT APPLY TO THICKNESS OVER 19.02 mm

SQUARENESS OF END CUT

Profiles over 50.8 mm in diameter or width: $\pm 1^\circ$

Profiles 50.8 mm inclusive and under in diameter or width: $\pm 2^\circ$

