

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**)

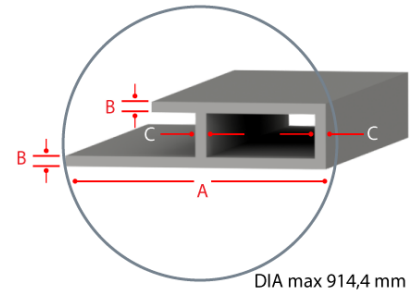
**B** (wall thickness - open shape) =  $\pm 10\%$  of specified dimension - if the calculated tolerance is less than 0,25 mm the thickness tolerance shall be  $\pm 0,25$  mm (**see note**)

**B** (flat profiles up to 304.8 till 1981.2 mm) =  $\pm 15\%$  of specified dimension to 3.175 mm thickness - if the calculated tolerance is less than 0,25 mm the thickness tolerance shall be  $\pm 0,25$  mm

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

**C** (wall thickness - close shape) =  $\pm 20\%$  of specified dimension - if the calculated tolerance is less than 0,25 mm the thickness tolerance shall be  $\pm 0,25$  mm (**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:

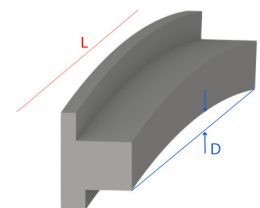
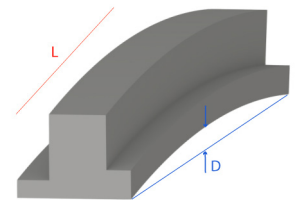
**D** = 4.17 mm/m

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

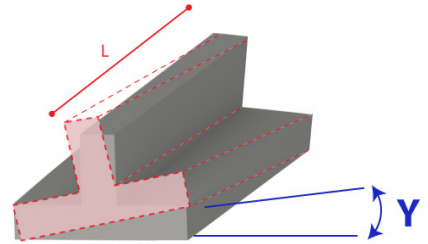
### Bars and open shapes :

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  $7^\circ$  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

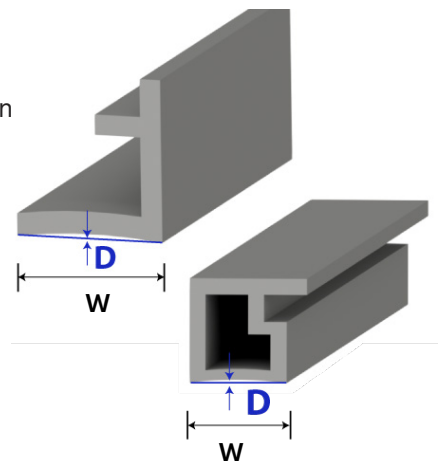
permitted a vertical deviation of  $0.008 \text{ mm} \times W$  (mm) 6.35 mm max. for all dimensions in terms of thickness

### 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:  $\pm 2^\circ$

