Aluminum Extrusion Tolerance Data

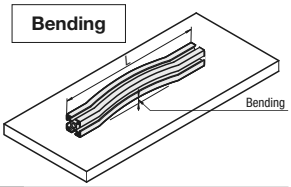
Aluminum Extrusion JIS Standards

• Bend Tolerance (Special Grade)

Unit: mm

Diameter of Circumscribed Circle mm	Minimum Thickness mm	Per Arbitrary Section of 300mm Length	per Full Length (L) mm
38 or less	2.4 or less	1.3 or less	1.3 x $\frac{L}{300}$ or Less
	Over 2.4	0.3 or less	0.3 x $\frac{L}{300}$ or Less
Over 38 to 300 or less	-	0.3 or less	0.3 x $\frac{L}{300}$ or Less
Over 300	-	0.5 or less	0.5 x $\frac{L}{300}$ or Less

Bending



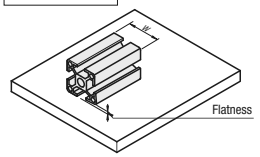
Note
- Given values are for extrusions placed on flat surfaces with minimized bends by own weight.
- When the overall length is not an integral multiple of 300mm, determine the tolerance by rounding up the remainder length to 300mm.

• Flatness Tolerance

Unit: mm

Shape Type / Minimum Thickness of Measurement Point / Width	General Shape	Hollow Shape	
	-	4.7mm or Less	Over 4.7mm
25mm or Less	0.10 or less	0.15 or less	0.10 or less
Over 25mm	0.004xW or Less	0.006xW or Less	0.004xW or Less
Per Arbitrary Section of 25mm Width	0.10 or less	0.15 or less	0.10 or less

Flatness



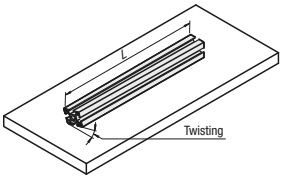
Note: Not Applicable to the plane including open section.

• Twist Tolerance

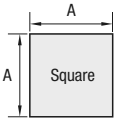
Unit: degree

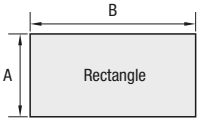
Diameter of Circumscribed Circle mm	Length	
	Per Arbitrary Section of 300mm Length	per Full Length (L) mm
38 or less	1 or less	1 x $\frac{L}{300}$ or Less; However, Max. Value is 7
Over 38 to 76 or less	1/2 or less	$\frac{1}{2}$ x $\frac{L}{300}$ or Less; However, Max. Value 5
Over 76	1/4 or less	$\frac{1}{4}$ x $\frac{L}{300}$ or Less; However, Max. Value 3

Twisting



Reference: Tolerance of Outer Dimension (JIS)





Unit: mm

Outer Dimension Tolerance (JIS)	A Dimension
HFS5-2020	±0.41
HFS5-4040	±0.54
HFS6-3030	
HFS6-6060	±0.86
HFS8-4040	±0.54
HFS8-8080	±0.86
HFS8-4545	±0.60
HFS8-9090	±0.86

Outer Dimension Tolerance (JIS)	A Dimension	B Dimension
HFS5-2040	±0.41	±0.54
HFS6-3060	±0.54	±0.86
HFS8-4080		
HFS8-4590	±0.60	

*MISUMI Aluminum Extrusions are within JIS dimension tolerance above.

Mechanical Properties of Aluminum Extrusions

	JIS Standard (Reference)	JIS Standard (Reference)	Actual Measurement	JIS Standard (Reference)
Series	HFS Series	GFS Series		NFS Series
Material (JIS Symbol)	EN AC-51400-T5 Equiv.	A6061SS-T6 Equiv.		EN AW-6063-T5 Equiv.
Tensile Strength (N/mm²)	245 or more	265 or more	278	155 or more
Proof Stress (N/mm²)	205 or more	245 or more	247	110 or more
Longitudinal Elastic Modulus (N/mm²)	69972	69972		69972
Brinell Hardness (HB)	88	88		88
Surface Treatment	Anodize 9μm or more	Anodize 9μm or more		Anodize 9μm or more