



CARBON STEEL STRUCTURAL TUBING - ASTM A500

Permissible Variations in Outside Flat Dimensions and Wall Thickness for Square and Rectangular Structural Tubing

Specified Outside Large Flat Dimension, in.	Permissible Variations Over and Under Specified Outside Flat Dimensions (a), in.	Wall Thickness Tolerance
2-1/2 or under	0.020	+/- 10%, exclusive of weld area
Over 2-1/2 to 3-1/2, incl.	0.025	+/- 10%, exclusive of weld area
Over 3-1/2 to 5-1/2, incl.	0.030	+/- 10%, exclusive of weld area
Over 5-1/2	0.01 times large flat dimension	+/- 10%, exclusive of weld area

- (a) The permissible variations include allowances for convexity and concavity. For rectangular tubing having a ratio of outside large to small flat dimension less than 1.5, and for square tubing, the permissible variations in small flat dimension shall be identical to the permissible variations in large flat dimension. For rectangular tubing having a ratio of outside large to small flat dimension in the range of 1.5 to 3.0 inclusive, the permissible variations in small flat dimension shall be 1.50 times the permissible variations in large flat dimension. For rectangular tubing having a ratio of outside large to small flat dimension greater than 3.0, the permissible variations in small flat dimension shall be 2.0 times the permissible variations in large flat dimension.

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Squareness of Sides for Square and Rectangular Tubing

Adjacent sides shall be square (90°), with a permissible variation of +/- 2° max.

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Round Tubing OD and Wall Tolerances

OD, in.	OD Thickness	Wall Thickness
1.900 and smaller	+/- .500%	+/- 10%, excl.
2.000 and larger	+/- .750%	+/- 10%, excl.

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Straightness

The permissible variation for straightness of structural tubing shall be 1/8 in. times the number of feet of total length divided by 5.

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