

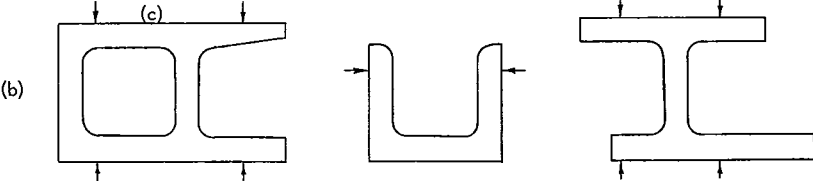
NATIONAL AIRCRAFT STANDARD

AIRCRAFT INDUSTRIES ASSOCIATION OF AMERICA, INC., 610 SHOREHAM BUILDING, WASHINGTON 5, D. C.

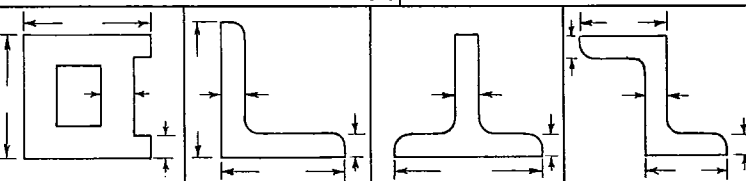
IN FORMULATING AND APPROVING NAS STANDARDS, AIA AND ITS COMMITTEES WILL NOT INVESTIGATE OR GUARANTEE THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE USER OF THESE STANDARDS IS RESPONSIBLE FOR PROTECTING THEMSELVES AGAINST LIABILITY FOR INFRINGEMENT OF PATENTS.

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Cross Sectional Dimensions

Basic Dimension, Inches	Allowable Deviation from Nominal Dimension Where Less Than 75% of the Dimension is Metal				
					
	(a) Tolerance - Inch-Plus or Minus				
	At Dimension Points Less Than 1/4 Inch from Base of Leg	At Dimension Points 1/4 to (Not Including) 5/8 Inch from Base of Leg	At Dimension Points 5/8 to (Not Including) 1 - 1/4 Inches from Base of Leg	At Dimension Points 1 - 1/4 to (Not Including) 2 - 1/2 Inches from Base of Leg	At Dimension Points 2 - 1/2 or More from Base of Leg
0.124 and Under	0.006	0.010	0.012	0.014	0.016
0.125 thru 0.249	0.007	0.012	0.014	0.016	0.020
0.250 thru 0.499	0.008	0.014	0.016	0.018	0.022
0.500 thru 0.749	0.009	0.016	0.018	0.020	0.026
0.750 thru 0.999	0.010	0.018	0.020	0.022	0.030
1.000 thru 1.499	0.012	0.020	0.022	0.026	0.034
1.500 thru 1.999	0.016	0.024	0.028	0.034	0.050
2.000 thru 3.999	0.024	0.032	0.036	0.048	0.064
4.000 thru 5.999	0.034	0.042	0.050	0.064	0.088
6.000 thru 7.999	0.044	0.054	0.062	0.082	0.112
8.000 thru 9.999	0.054	0.064	0.074	0.100	0.136
10.000 thru 11.999	0.064	0.074	0.088	0.116	0.160
12.000 thru 13.999	0.074	0.084	0.100	0.134	0.184
14.000 thru 15.000	0.080	0.090	0.106	0.142	0.196

Tolerances for Cross Sectional Dimensions; See Footnote (a)

Basic Dimension, Inches	Allowable Deviation from Nominal Dimension on Solid Metal, or Where 75% or More of the Dimension is Metal	
	Shapes	
		
(a) Tolerance - Inch - Plus or Minus		
0 thru 0.124	0.006	
0.125 thru 0.249	0.007	
0.250 thru 0.499	0.008	
0.500 thru 0.749	0.009	
0.750 thru 0.999	0.010	
1.000 thru 1.499	0.012	
1.500 thru 1.999	0.016	
2.000 thru 3.999	0.024	
4.000 thru 5.999	0.034	
6.000 thru 7.999	0.044	
8.000 thru 9.999	0.054	
10.000 thru 11.999	0.064	
12.000 thru 13.999	0.074	
14.000 thru 15.000	0.080	

INACTIVE FOR
AFTER 1 NOV 2015
SEE FED. SPEC. 101.10
FOR DEFINITION OF DRAWING SYMBOLS

**INACTIVE FOR DESIGN
AFTER 1 NOV. 1957
SEE FED. STD. 245**

FOR DEFINITION OF DRAWING STATUS NOTES SEE NAS 380

- (a) The sum of the tolerances of component dimensions will not be used as a tolerance for an overall dimension.
- (b) For hollow shapes the tolerance on wall thickness shall be $\pm 10\%$ if the cross-sectional area of the hole is 0.1105 sq. in. or more. The min. tolerance shall be 0.010 inch and the max. tolerance 0.060 inch.
- (c) For hollow shapes, the tolerances on dimensions across the enclosed space shall be in accordance with column "At dimension points 1/4 to (not including) 5/8 inch from base of leg."

LIST OF ACTIVE SHEETS

Sheet Number	Rev. Number
1	1
2	1
3	1

CUSTODIAN: National Aircraft Standards Committee

PROCUREMENT SPECIFICATION

None

TITLE

**TOLERANCES-ALUMINUM AND MAGNESIUM
ALLOY EXTRUDED ROD, BAR, AND SHAPES**

CLASSIFICATION
Design Standard

NAS 598 Documents

Sheet 1 of 3

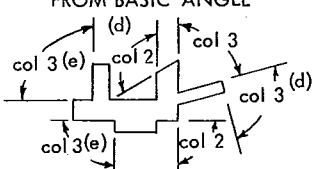
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Angularity

MINIMUM BASIC LEG THICKNESS Inches	TOLERANCE Degrees Plus and Minus ALLOWABLE DEVIATION FROM BASIC ANGLE		
			
	Ratio (d)	(e)	Leg or Surface Length to Leg or Metal Thickness
	1 and less	Over 1	
Col 1	Col 2	Col 3	
Under 0.188	1°	2°	
0.188 - 0.749	1°	1 1/2°	
0.750 and over	1°	1°	

Twist

(f) Circumscribing Circle Diameter Inches	(i) Tolerances, Degrees	
	Allowable Deviation from Straight	
	In Each Foot of Length	In Total Length Of Piece
Under 1 1/2	1°	Length, Ft., Times 1°
1 1/2 to (not incl) 3	1/2°	Length, Ft., Times 1/2° Not Over 5°
3 and Over	1/4°	Length, Ft., Times 1/4° Not Over 3°

Length (h)

CIRCUMSCRIBING CIRCLE DIAMETER (SHAPES); BASIC DIAMETER (ROD); BASIC WIDTH (BAR) Inches	TOLERANCE - Inches Plus ALLOWABLE DEVIATION FROM BASIC LENGTH			
	BASIC LENGTH - Feet			
	Up Thru 12	Over 12 thru 30	Over 30 thru 50	Over 50
Under 3.000	1/8	1/4	3/8	1
3.000 - 7.999	3/16	5/16	7/16	1
8.000 and over	1/4	3/8	1/2	1

Straightness Tolerances

Any Change in Direction of Longitudinal Axis Constitutes a Departure from Straightness.

(f) Circumscribing Circle Diameter Inches	Minimum Thickness Inches	(g) (i) Tolerance, Inch
		Maximum Deviation from Straight Per Foot of Length
Under 1 1/2	0.094 or Under	0.0500
Under 1 1/2	Over 0.094	0.0125
1 1/2 and Over	Any Thickness	0.0125

Squareness of cut end $\pm 1^\circ$

- (d) When the space between the surfaces forming an angle is all metal, values in column 2 for ratios of 1 and less apply if the larger surface length to metal thickness ratio is 1 or less.
- (e) When two legs are involved, the one having the larger ratio determines the applicable column.
- (f) The diameter of the smallest circle that will completely enclose the shape.
- (g) The shape shall be measured from a flat surface with the weight of the section minimizing the curvature.
- (h) Applicable to straight lengths only.
- (i) Not applicable to extruded products in the annealed condition.

INACTIVE FOR DESIGN AFTER 1 NOV. 1957

SEE FED. STD. 245

FOR DEFINITION OF DRAWING STATUS NOTES SEE NAS 380

CUSTODIAN: National Aircraft Standards Committee

PROCUREMENT SPECIFICATION

None

TITLE

**TOLERANCES—ALUMINUM AND MAGNESIUM
ALLOY EXTRUDED ROD, BAR, AND SHAPES**

CLASSIFICATION

Design Standard

Documents

Document Sharing Hub

Sheet 2