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NOTE: This drawing was approved by joint action of the War and Navy Departments as the Army-Navy standard for this drawing. The drawing supersedes all antecedent standard drawings for this drawing. The drawing is to be used for the procurement of material and the production of parts and assemblies. It may be put into effect, however, at an earlier date after promulgation.

## HOT ROLLED ALLOY STEEL SHEET WIDTH TOLERANCES

Specified Width	Tolerance																
	Mill Edge								Sheared Edge								
	0.2499 to 0.1875 incl.	0.1874 to 0.1091 incl.	0.1090 to 0.0621 incl.	0.0620 to 0.0540 incl.	0.0539 to 0.0410 incl.	0.0409 to 0.0344 incl.	0.0343 to 0.0250 incl.	0.0249 to and Under	0.2499 to 0.1875 incl.	0.1874 to 0.1091 incl.	0.1090 to 0.0621 incl.	0.0620 to 0.0540 incl.	0.0539 to 0.0410 incl.	0.0409 to 0.0344 incl.	0.0343 to 0.0250 incl.	0.0249 to and Under	
Up to 2 incl.	—	—	—	—	—	—	—	+1/16	—	—	—	—	—	—	—	—	+1/16
Over 2 to 3-1/2 incl.	—	—	—	—	—	—	—	+1/8	—	—	—	—	—	—	—	—	+1/8
Over 3-1/2 to 5 incl.	—	—	—	—	—	—	—	+1/8	—	—	—	—	—	—	—	+1/8	+1/8
Over 5 to 6 incl.	—	—	—	—	—	—	—	+1/8	—	—	—	—	—	—	—	+1/8	+1/8
Over 6 to 10 incl.	—	—	—	—	—	—	—	+1/8	—	—	—	—	—	—	—	+1/8	+1/8
Over 10 to 15 incl.	—	—	—	—	+3/16	+3/16	+3/16	+3/16	—	—	—	—	+1/8	+1/8	+1/8	+1/8	+1/8
Over 15 to 20 incl.	—	—	—	+1/4	+1/4	+1/4	+1/4	+1/4	—	—	—	+1/8	+1/8	+1/8	+1/8	+1/8	+1/8
Over 20 to 24 excl.	—	—	—	+3/8	+3/8	+3/8	+3/8	+3/8	—	—	—	+3/16	+3/16	+3/16	+3/16	+3/16	+3/16
Over 24 to 30 incl.	+3/8	+3/8	+3/8	+3/8	+3/8	+3/8	+3/8	+3/8	+3/16	+3/16	+3/16	+3/16	+3/16	+3/16	+3/16	+3/16	+3/16
Over 30 to 48 incl.	+1/2	+1/2	+1/2	+1/2	+1/2	+1/2	+1/2	+1/2	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4
Over 48 to 50 incl.	—	+1/2	+1/2	+1/2	+1/2	+1/2	+1/2	+1/2	—	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4	+1/4
Over 50 to 80 incl.	—	+5/8	+5/8	+5/8	+5/8	+5/8	+5/8	+5/8	—	+5/16	+5/16	+5/16	+5/16	+5/16	+5/16	+5/16	+5/16
Over 80	—	+3/4	+3/4	+3/4	+3/4	+3/4	+3/4	+3/4	—	+3/8	+3/8	+3/8	+3/8	+3/8	+3/8	+3/8	+3/8

## HOT ROLLED ALLOY STEEL SHEET THICKNESS TOLERANCES

Specified Width	Specified Thickness														
	0.2499 to 0.1910 incl.	0.1909 to 0.1875 incl.	0.1874 to 0.1420 incl.	0.1419 to 0.1180 incl.	0.1179 to 0.1090 incl.	0.1089 to 0.0972 incl.	0.0971 to 0.0822 incl.	0.0821 to 0.0710 incl.	0.0709 to 0.0610 incl.	0.0609 to 0.0540 incl.	0.0539 to 0.0509 incl.	0.0508 to 0.0410 incl.	0.0409 to 0.0389 incl.	0.0388 to 0.0350 incl.	0.0349 to 0.0314 incl.
Up to 3-1/2 incl.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Over 3-1/2 to 5 incl.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	±0.004
Over 5 to 6 incl.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	±0.004
Over 6 to 10 incl.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	±0.004
Over 10 to 15 incl.	—	—	—	—	—	—	—	—	—	—	±0.005	±0.005	±0.005	±0.004	±0.004
Over 15 to 24 excl.	—	—	—	—	—	—	—	—	—	±0.006	±0.006	±0.006	±0.005	±0.005	±0.004
Over 24 to 32 incl.	±0.009	±0.009	±0.009	±0.008	±0.008	±0.008	±0.007	±0.007	±0.006	±0.006	±0.006	±0.006	±0.005	±0.005	±0.004
Over 32 to 40 incl.	±0.009	±0.009	±0.009	±0.009	±0.009	±0.009	±0.008	±0.007	±0.006	±0.006	±0.006	±0.006	±0.005	±0.005	±0.004
Over 40 to 48 incl.	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.008	±0.007	±0.006	±0.006	±0.006	±0.006	±0.005	±0.005	±0.004
Over 48 to 60 incl.	—	—	±0.010	±0.010	±0.010	±0.010	±0.008	±0.007	±0.007	±0.006	±0.006	±0.006	±0.005	±0.005	±0.004
Over 60 to 70 incl.	—	—	±0.011	±0.011	±0.011	±0.011	±0.009	±0.008	±0.007	±0.007	±0.007	±0.007	±0.006	±0.006	±0.005
Over 70 to 80 incl.	—	—	±0.012	±0.012	±0.012	±0.012	±0.009	±0.008	—	—	—	—	—	—	—
Over 80 to 90 incl.	—	—	±0.012	±0.012	±0.012	±0.012	±0.010	—	—	—	—	—	—	—	—
Over 90	—	—	±0.012	±0.012	±0.012	±0.012	—	—	—	—	—	—	—	—	—

Thickness measured at any point on the sheet, not less than 3/8 from edge.

Continued from Thickness Tolerances Table Above.

Specified Width	Specified Thickness			
	0.0313 to 0.0250 incl.	0.0249 to 0.0195 incl.	0.0194 to 0.0142 incl.	0.0141 and Under
	0.0313 to 0.0250 incl.	0.0249 to 0.0195 incl.	0.0194 to 0.0142 incl.	0.0141 and Under
Up to 3-1/2 incl.	—	±0.003	±0.002	±0.002
Over 3-1/2 to 5 incl.	±0.003	±0.003	±0.002	±0.002
Over 5 to 6 incl.	±0.003	±0.003	±0.002	±0.002
Over 6 to 10 incl.	±0.003	±0.003	±0.002	±0.002
Over 10 to 15 incl.	±0.003	±0.003	±0.002	±0.002
Over 15 to 24 excl.	±0.003	±0.003	±0.002	—
Over 24 to 32 incl.	±0.003	±0.003	±0.002	—
Over 32 to 40 incl.	±0.003	±0.003	±0.002	±0.002
Over 40 to 48 incl.	±0.003	±0.003	±0.002	±0.002
Over 48 to 60 incl.	—	—	—	—
Over 60 to 70 incl.	—	—	—	—
Over 70 to 80 incl.	—	—	—	—
Over 80 to 90 incl.	—	—	—	—
Over 90	—	—	—	—

## (b) HOT ROLLED ALLOY STEEL SHEET FLATNESS TOLERANCES

Specified Thickness	Specified Width	Tolerance From Flat
Up to 0.0567 incl.	Up to 36 incl.	3/4
	Over 36 to 60 incl.	1-1/8
	Over 60	1-1/2
0.0568 to 0.1874 incl.	Up to 60 incl.	3/4
	Over 60 to 72 incl.	1-1/8
	Over 72	1-1/2
0.1875 to 0.2499 incl.	Over 24 to 48 incl.	3/4

Applicable only to Hot Rolled Alloy Sheet furnished in the as rolled condition.

## (a) HOT ROLLED ALLOY STEEL SHEET CAMBER TOLERANCES

Specified Length in Feet	Tolerance
Up to 4 incl.	1/8
Over 4 to 6 incl.	3/16
Over 6 to 8 incl.	1/4
Over 8 to 10 incl.	5/16
Over 10 to 12 incl.	3/8
Over 12 to 14 incl.	1/2
Over 14 to 16 incl.	5/8
Over 16 to 18 incl.	3/4
Over 18 to 20 incl.	7/8
Over 20 to 30 incl.	1-1/4
Over 30 to 40 incl.	1-1/2

For sheets in coils, permissible camber not to exceed 1 inch in any 20 feet of length.

## HOT ROLLED ALLOY STEEL SHEET LENGTH TOLERANCES

Specified Length	Tolerance	
	Sheets 0.0449 and Thicker	Sheets 0.0448 and Thinner
Up to 15 incl.	+1/2	+1/8
Over 15 to 20 incl.	+1/2	+1/4
Over 20 to 30 incl.	+1/2	+1/4
Over 30 to 40 incl.	+1/2	+1/2
Over 40 to 60 incl.	+1/2	+1/2
Over 60 to 96 incl.	+1/2	+1/2
Over 96 to 120 incl.	+1/2	+1
Over 120 to 156 incl.	+3/4	+1-1/4
Over 156 to 180 incl.	+3/4	+1-1/2
Over 180 to 192 incl.	+3/4	+1-1/2
Over 192 to 240 incl.	+3/4	+1-3/4
Over 240 to 360 incl.	+3/4	+2
Over 360 to 480 incl.	+1	+2
Over 480	+1-1/2	+2

(a) Camber is defined as the greatest deviation of a side edge from a straight line; and the measurement is taken on the convex side with a straightedge.

(b) The flatness of sheet or strip is measured by laying the sheet or strip on a true flat surface and measuring the maximum elevation above that true flat surface to any point on the bottom surface of the sheet or strip. Good delivery is recognized when the total deviation falls within the permissible standard tolerance and size limitation allowed in the standard tables for flatness.

① INACTIVE AFTER 9 SEPTEMBER 1969: USE FED. STD. 48.

ALL DIMENSIONS AND TOLERANCES IN INCHES, UNLESS OTHERWISE SPECIFIED.

① FOR CHANGES SEE SHEET 1.

ARMY-NAVY AERONAUTICAL DESIGN STANDARD

TOLERANCES-ALLOY STEEL SHEET AND STRIP

AND 10367

SHEET 1 OF 2 SHEETS

NOT A PART NUMBER

APPROVED TO 304-47 REVISED ① 9-5-64

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NOTE: This drawing was approved by joint action of the War and Navy Departments as the Army-Navy standard for the design of aircraft. This drawing supersedes all antecedent standard drawings for the same product and shall be used for the procurement of aircraft. It is the responsibility of the user to obtain any necessary rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

# \* HOT ROLLED ALLOY STEEL STRIP THICKNESS TOLERANCES

Specified Width	Specified Thickness															
	0.2499 to 0.1910 incl.	0.1909 to 0.1875 incl.	0.1874 to 0.1420 incl.	0.1419 to 0.1180 incl.	0.1179 to 0.1090 incl.	0.1089 to 0.0972 incl.	0.0971 to 0.0822 incl.	0.0821 to 0.0710 incl.	0.0709 to 0.0610 incl.	0.0609 to 0.0540 incl.	0.0539 to 0.0509 incl.	0.0508 to 0.0410 incl.	0.0409 to 0.0389 incl.	0.0388 to 0.0350 incl.	0.0349 to 0.0314 incl.	0.0313 to 0.0250 incl.
	0.2499 to 0.1910 incl.	0.1909 to 0.1875 incl.	0.1874 to 0.1420 incl.	0.1419 to 0.1180 incl.	0.1179 to 0.1090 incl.	0.1089 to 0.0972 incl.	0.0971 to 0.0822 incl.	0.0821 to 0.0710 incl.	0.0709 to 0.0610 incl.	0.0609 to 0.0540 incl.	0.0539 to 0.0509 incl.	0.0508 to 0.0410 incl.	0.0409 to 0.0389 incl.	0.0388 to 0.0350 incl.	0.0349 to 0.0314 incl.	0.0313 to 0.0250 incl.
Up to 3-1/2 incl.	—	—	—	—	—	±0.004	±0.004	±0.004	±0.004	±0.004	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003
Over 3-1/2 to 5 incl.	—	—	—	—	—	±0.005	±0.005	±0.005	±0.005	±0.005	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003
Over 5 to 6 incl.	—	—	—	—	—	±0.005	±0.005	±0.005	±0.005	±0.005	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003
Over 6 to 10 incl.	±0.007	±0.006	±0.006	±0.006	±0.005	±0.005	±0.005	±0.005	±0.005	±0.005	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004
Over 10 to 15 incl.	±0.008	±0.007	±0.007	±0.007	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006	±0.006
Over 15 to 24 excl.	±0.009	±0.008	±0.008	±0.008	±0.007	±0.007	±0.007	±0.007	±0.007	±0.006	—	—	—	—	—	—

Thickness measurements are taken 3/8 from edge of strip.

# HOT ROLLED ALLOY STEEL STRIP WIDTH TOLERANCES

Specified Width	Tolerance													
	Mill Edge							Sheared Edge						
	0.2499 to 0.1091 incl.	0.1090 to 0.0621 incl.	0.0620 to 0.0540 incl.	0.0539 to 0.0410 incl.	0.0409 to 0.0344 incl.	0.0343 to 0.0250 incl.	0.2499 to 0.1091 incl.	0.1090 to 0.0621 incl.	0.0620 to 0.0540 incl.	0.0539 to 0.0410 incl.	0.0409 to 0.0344 incl.	0.0343 to 0.0250 incl.	0.0343 to 0.0250 incl.	0.0343 to 0.0250 incl.
Up to 2 incl.	—	±1/32	±1/32	±1/32	±1/32	±1/32	—	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008
Over 2 to 3-1/2 incl.	—	±3/64	±3/64	±3/64	±3/64	±3/64	—	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008
Over 3-1/2 to 5 incl.	—	±3/64	±3/64	±3/64	±3/64	±3/64	—	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008
Over 5 to 6 incl.	—	±1/16	±1/16	±1/16	±1/16	±1/16	—	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010	±0.010
Over 6 to 10 incl.	±1/16	±1/16	±1/16	±1/16	—	—	±0.016	±0.010	±0.010	±0.010	—	—	—	—
Over 10 to 15 incl.	±3/32	±3/32	±3/32	—	—	—	±0.016	±0.016	±0.016	—	—	—	—	—
Over 15 to 20 incl.	±1/8	±1/8	—	—	—	—	±0.016	±0.016	—	—	—	—	—	—
Over 20 to 24 excl.	±5/32	±5/32	—	—	—	—	±1/32	±1/32	—	—	—	—	—	—

# HOT ROLLED ALLOY STEEL STRIP LENGTH TOLERANCES

Specified Length	Specified Width		
	3 or Under	Over 3 to 6 incl.	Over 6 to 24 excl.
Up to 40 incl.	+ 1/4	+ 3/8	+ 1/2
Over 40 to 60 incl.	+ 1/4	+ 3/8	+ 1/2
Over 60 to 96 incl.	+ 3/8	+ 1/2	+ 3/4
Over 96 to 120 incl.	+ 3/8	+ 1/2	+ 3/4
Over 120 to 156 incl.	+ 1/2	+ 5/8	+ 1
Over 156 to 180 incl.	+ 1/2	+ 5/8	+ 1
Over 180 to 192 incl.	+ 1/2	+ 5/8	+ 1
Over 192 to 240 incl.	+ 1/2	+ 5/8	+ 1
Over 240 to 360 incl.	+ 3/4	+ 3/4	+ 1-1/4
Over 360 to 480 incl.	+ 1	+ 1	+ 1-1/2
Over 480	+ 1-1/2	+ 1-1/2	+ 1-3/4

# HOT ROLLED ALLOY STEEL STRIP CROWN TOLERANCES

Specified Width	Tolerance
Up to 2 incl.	0.002
Over 2 to 5 incl.	0.003
Over 5 to 10 incl.	0.004
Over 10 to 15 incl.	0.005
Over 15 to 24 excl.	0.006

Strip steel may be thicker at the center than at the edge by the amounts shown above.

# HOT ROLLED ALLOY STEEL STRIP FLATNESS TOLERANCES

Flatness Not to Exceed 1/2 inch in any 8 feet
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# (a) HOT ROLLED ALLOY STEEL STRIP CAMBER TOLERANCES

1/4 inch in any 8 feet

ALL DIMENSIONS AND TOLERANCES IN INCHES, UNLESS OTHERWISE SPECIFIED.

ARMY-NAVY AERONAUTICAL DESIGN STANDARD  
TOLERANCES-ALLOY STEEL SHEET AND STRIP

AND 10367

SHEET 2 OF 2 FIGURES

NOT A PART NUMBER

APPROVED 10 Jun 47 REVISED 1 FOR CHANGES SEE SHEET 1.