



AEROSPACE MATERIAL SPECIFICATION

AMS2262™**REV. J**

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Revised 2025-03

Superseding AMS2262H

(R) Tolerances
Nickel, Nickel Alloy, and Cobalt Alloy Sheet, Strip, and Plate

RATIONALE

AMS2262J is the result of a Five-Year Review and update of the specification. The revision adds SI units throughout.

1. SCOPE

This specification covers established manufacturing tolerances applicable to sheet, strip, and plate of nickel, nickel alloys, and cobalt alloys ordered to inch/pound dimensions. These tolerances apply to all conditions, unless otherwise noted. The term “excl” is used to apply only to the higher figure of a specified range.

1.1 Where the terms “nickel,” “nickel-copper,” “nickel-chromium,” “nickel-molybdenum,” “nickel-molybdenum-chromium,” and “cobalt” are used without qualification, they refer to both non-heat-treatable and heat-treatable alloys as applicable, unless otherwise noted.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AS7766 Terms Used in Aerospace Metals Specifications

2.2 Definitions

Terms used in AMS are defined in AS7766.

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3. THICKNESS

Thickness for sheet and strip is measured at any place on widths under 1 inch (25 mm), at any place 3/8 inch (9 mm) and over from an edge on widths 1 inch (25 mm) and over, and for plate at least 3/8 inch (9 mm) but not more than 3 inches (75 mm) from an edge.

3.1 Sheet

3.1.1 Nickel, Nickel-Chromium, and Nickel-Copper Alloys

For thickness 0.018 inch (0.46 mm) and under, tolerances apply only to widths of 36 inches (900 mm) and under in lengths 96 inches (2400 mm) and under. Cold-rolled tolerances do not apply to precipitation-hardenable nickel-chromium alloys over 44 inches wide.

Table 1A - Thickness tolerances for nickel, nickel-chromium, and nickel-copper alloys - sheet - narrow widths (inch/pound units)

Specified Thickness Inches	Thickness Tolerance Inches Plus and Minus Cold-Rolled Widths of 48 Inches and Under	Thickness Tolerance Inches Plus and Minus Cold-Rolled Widths of Over 48 to 60 Inches Incl	Thickness Tolerance Inches Plus and Minus Hot-Rolled Widths of 48 Inches and Under	Thickness Tolerance Inches Plus and Minus Hot-Rolled Widths of Over 48 to 60 Inches Incl
0.010 to 0.018, incl	0.002	--	--	--
Over 0.018 to 0.025, incl	0.002	0.003	0.003	0.004
Over 0.025 to 0.034, incl	0.003	0.004	0.004	0.005
Over 0.034 to 0.056, incl	0.004	0.005	0.005	0.006
Over 0.056 to 0.070, incl	0.005	0.006	0.006	0.007
Over 0.070 to 0.078, incl	0.006	0.007	0.007	0.008
Over 0.078 to 0.093, incl	0.007	0.008	0.008	0.009
Over 0.093 to 0.109, incl	0.007	0.009	0.009	0.010
Over 0.109 to 0.125, incl	0.008	0.010	0.010	0.012
Over 0.125 to 0.140, incl	0.008	0.010	0.012	0.014
Over 0.140 to 0.171, incl	0.009	0.012	0.014	0.016
Over 0.171 to 0.187, incl	0.010	0.013	0.015	0.017

Table 1B - Thickness tolerances for nickel, nickel-chromium, and nickel-copper alloys - sheet - narrow widths (SI units)

Specified Thickness Millimeters	Thickness Tolerance Millimeters Plus and Minus Cold-Rolled Widths of 1200 mm and Under	Thickness Tolerance Millimeters Plus and Minus Cold-Rolled Widths of Over 1200 to 1500 mm Incl	Thickness Tolerance Millimeters Plus and Minus Hot-Rolled Widths of 1200 mm and Under	Thickness Tolerance Millimeters Plus and Minus Hot-Rolled Widths of Over 1200 to 1500 mm Incl
0.25 to 0.46, incl	0.05	--	--	--
Over 0.46 to 0.64, incl	0.05	0.08	0.08	0.10
Over 0.64 to 0.86, incl	0.08	0.10	0.10	0.13
Over 0.86 to 1.42, incl	0.10	0.13	0.13	0.15
Over 1.42 to 1.78, incl	0.13	0.15	0.15	0.18
Over 1.78 to 1.98, incl	0.15	0.18	0.18	0.20
Over 1.98 to 2.36, incl	0.18	0.20	0.20	0.23
Over 2.36 to 2.77, incl	0.18	0.23	0.23	0.25
Over 2.77 to 3.18, incl	0.20	0.25	0.25	0.30
Over 3.18 to 3.56, incl	0.20	0.25	0.30	0.36
Over 3.56 to 4.34, incl	0.23	0.30	0.36	0.41
Over 4.34 to 4.75, incl	0.25	0.33	0.38	0.43

3.1.2 Nickel-Molybdenum, Nickel-Molybdenum-Chromium, and Cobalt Alloys (Widths 48 Inches [1200 mm] and Under)

For specified thicknesses over 0.187 inch (4.75 mm), plate tolerances of Table 5 apply.

Table 2A - Thickness tolerances for nickel-molybdenum, nickel-molybdenum-chromium, and cobalt alloys - sheet - narrow (inch/pound units)

Specified Thickness Inches	Thickness Tolerance Inches Plus	Thickness Tolerance Inches Minus
0.010 to 0.018, incl	0.002	0.002
Over 0.018 to 0.025, incl	0.003	0.003
Over 0.025 to 0.034, incl	0.004	0.004
Over 0.034 to 0.056, incl	0.005	0.005
Over 0.056 to 0.070, incl	0.006	0.006
Over 0.070 to 0.078, incl	0.007	0.007
Over 0.078 to 0.093, incl	0.008	0.008
Over 0.093 to 0.109, incl	0.009	0.009
Over 0.109 to 0.125, incl	0.010	0.010
Over 0.125 to 0.140, incl	0.013	0.010
Over 0.140 to 0.171, incl	0.016	0.010
Over 0.171 to 0.187, incl	0.018	0.010

Table 2B - Thickness tolerances for nickel-molybdenum, nickel-molybdenum-chromium, and cobalt alloys - sheet - narrow (SI units)

Specified Thickness Millimeters	Thickness Tolerance Millimeters Plus	Thickness Tolerance Millimeters Minus
0.25 to 0.46, incl	0.05	0.05
Over 0.46 to 0.64, incl	0.08	0.08
Over 0.64 to 0.86, incl	0.10	0.10
Over 0.86 to 1.42, incl	0.13	0.13
Over 1.42 to 1.78, incl	0.15	0.15
Over 1.78 to 1.98, incl	0.18	0.18
Over 1.98 to 2.36, incl	0.20	0.20
Over 2.36 to 2.77, incl	0.23	0.23
Over 2.77 to 3.18, incl	0.25	0.25
Over 3.18 to 3.56, incl	0.33	0.25
Over 3.56 to 4.34, incl	0.41	0.25
Over 4.34 to 4.75, incl	0.46	0.25

3.2 Cold-Rolled Strip

3.2.1 All Alloys

Table 3 does not apply to precipitation-hardenable nickel-chromium and nickel-molybdenum-chromium alloys for specified thicknesses over 0.025 inch (0.64 mm) or to any alloy in widths over 12 inches (300 mm).

Table 3 - Thickness limits for cold-rolled strip

Specified Thickness (T) Inches	Specified Thickness (T) Millimeters	Thickness Tolerance Inches (Millimeters) Plus and Minus All Widths
Up to 0.006, excl	Up to 0.15, excl	0.10T
0.006 to 0.015, incl	0.15 to 0.38, incl	0.001 (0.03)
Over 0.015 to 0.050, incl	Over 0.38 to 1.27, incl	0.0015 (0.038)
Over 0.050 to 0.093, incl	Over 1.27 to 2.36, incl	0.0025 (0.064)
Over 0.093 to 0.125, incl	Over 2.36 to 3.18, incl	0.004 (0.10)

3.3 Hot-Rolled Plate

Minus tolerance shall be 0.010 inch (0.25 mm) for all widths and all thicknesses in all alloys; plus tolerances shall be as shown in 3.3.1 and 3.3.2.

3.3.1 Nickel, Nickel-Chromium, and Nickel-Copper Alloys

Tolerances shown in Table 4 are only approximate for precipitation-hardenable nickel-chromium alloys; failure to meet these tolerances shall not be cause for rejection of such alloy product.

Table 4 - Thickness tolerances for nickel, nickel-chromium, and nickel-copper alloys - wide

Specified Thickness (T) Inches	Specified Thickness (T) Millimeters	Thickness Tolerance Inches Plus Only for Widths Up to 48 Inches (1200 mm) Excl	Thickness Tolerance Inches Plus Only for Widths 48 to 60 Inches (1200 to 1500 mm) Excl	Thickness Tolerance Inches Plus Only for Widths 60 to 72 Inches (1500 to 1800 mm) Excl	Thickness Tolerance Inches Plus Only for Widths 72 to 84 Inches (1800 to 2100 mm) Excl	Thickness Tolerance Inches Plus Only for Widths 84 to 96 Inches (2100 to 2500 mm) Incl
0.1875 to 0.3125, excl	4.762 to 7.938, excl	0.113T	0.132T	0.150T	0.169T	0.184T
0.3125 to 0.375, excl	7.938 to 9.52, excl	0.094T	0.113T	0.132T	0.150T	0.169T
0.375 to 0.4375, excl	9.52 to 11.112, excl	0.088T	0.094T	0.113T	0.132T	0.150T
0.4375 to 0.500, excl	11.112 to 12.70, excl	0.075T	0.088T	0.094T	0.113T	0.132T
0.500 to 0.625, excl	12.70 to 15.88, excl	0.063T	0.075T	0.088T	0.094T	0.113T
0.625 to 0.750, excl	15.88 to 19.05, excl	0.057T	0.069T	0.075T	0.088T	0.094T
0.750 to 1.000, excl	19.05 to 25.40, excl	0.050T	0.057T	0.069T	0.075T	0.088T
1.000 and over	25.40 and over	0.050T	0.050T	0.057T	0.069T	0.075T

3.3.2 Nickel-Molybdenum, Nickel-Molybdenum-Chromium, and Cobalt Alloys (Widths 48 Inches [1200 mm] and Under)

Tolerances shown in Table 5 are only approximate for precipitation-hardenable alloys; failure to meet these tolerances shall not be cause for rejection of such product.

Table 5 - Thickness tolerances for nickel-molybdenum, nickel-molybdenum-chromium, and cobalt alloys - wide

Specified Thickness (T) Inches	Specified Thickness (T) Millimeters	Thickness Tolerance Inches Plus Only for Width Ranges Shown Up to 48 Inches (1200 mm) Excl	Thickness Tolerance Inches Plus Only for Width Ranges Shown 48 to 60 Inches (1200 to 1500 mm) Excl	Thickness Tolerance Inches Plus Only for Width Ranges Shown 60 to 72 Inches (1500 to 1800 mm) Excl	Thickness Tolerance Inches Plus Only for Width Ranges Shown 72 to 84 Inches (1800 to 2100 mm) Excl	Thickness Tolerance Inches Plus Only for Width Ranges Shown 84 to 96 Inches (2100 to 2400 mm) Incl
0.1875 to 0.3125, excl	4.762 to 7.938, excl	0.132T	0.150T	0.169T	0.184T	0.199T
0.3125 to 0.375, excl	7.938 to 9.52, excl	0.113T	0.132T	0.150T	0.169T	0.184T
0.375 to 0.4375, excl	9.52 to 11.112, excl	0.094T	0.113T	0.132T	0.150T	0.169T
0.4375 to 0.500, excl	11.112 to 12.70, excl	0.088T	0.094T	0.113T	0.132T	0.150T
0.500 to 0.625, excl	12.70 to 15.88, excl	0.075T	0.088T	0.094T	0.113T	0.132T
0.625 to 0.750, excl	15.88 to 19.05, excl	0.069T	0.075T	0.088T	0.094T	0.113T
0.750 to 1.000, excl	19.05 to 25.40, excl	0.057T	0.069T	0.075T	0.088T	0.094T
1.000 and over	25.40 and over	0.050T	0.057T	0.069T	0.075T	0.088T

4. WIDTH

4.1 Sheet (All Alloys, Widths 60 Inches [1500 mm] and Under)

Shall not vary in width more than +1/8 inch (+3.18 mm), -0.

4.2 Cold-Rolled Strip

4.2.1 All Alloys

Table 6 - Cold-rolled strip thickness tolerance

Specified Thickness Inches	Specified Thickness Millimeters	Specified Width Inches (Millimeters)	Width Tolerance Inches (Millimeters) Plus and Minus
Up to 0.009, incl	Up to 0.23, incl	12 (300) and under	0.005 (0.13)
Over 0.009 to 0.024, incl	Over 0.23 to 0.61, incl	12 (300) and under	0.007 (0.18)
Over 0.024 to 0.075, incl	Over 0.61 to 1.90, incl	14 (350) and under	0.007 (0.18)
Over 0.075 to 0.100, incl	Over 1.90 to 2.54, incl	14 (350) and under	0.009 (0.23)
Over 0.100 to 0.125, incl	Over 2.54 to 3.18, incl	14 (350) and under	0.012 (0.30)

4.3 Hot-Rolled Plate

4.3.1 Nickel, Nickel-Chromium, Nickel-Copper, Nickel-Molybdenum, Nickel-Molybdenum-Chromium, and Cobalt Alloys

4.3.1.1 Sheared Plate 240 Inches (6000 mm) and Under in Length

Minus tolerance shall be 0.125 inch (3.18 mm) for all widths and all thicknesses; plus tolerance shall be as shown in Table 7. The minimum available width of sheared plate is 24 inches (600 mm).

Table 7A - Hot-rolled, sheared plate - width tolerance (inch/pound units)

Specified Thickness Inches	Width Tolerance Inches Plus Only Width Ranges Inches Up to 30 Incl	Width Tolerance Inches Plus Only Width Ranges Inches Over 30 to 72 Incl	Width Tolerance Inches Plus Only Width Ranges Inches Over 72 to 96 Incl
0.1875 to 0.3125, excl	0.1875	0.250	0.375
0.3125 to 0.500, excl	0.250	0.375	0.375
0.500 to 0.750, excl	0.375	0.375	0.500
0.750 to 1.000, excl	0.500	0.500	0.625
1.000 to 1.250, excl	0.625	0.625	0.750

Table 7B - Hot-rolled, sheared plate - width tolerance (SI units)

Specified Thickness Millimeters	Width Tolerance Millimeters Plus Only Width Ranges Millimeters Up to 750 Incl	Width Tolerance Millimeters Plus Only Width Ranges Millimeters Over 750 to 1800 Incl	Width Tolerance Millimeters Plus Only Width Ranges Millimeters Over 1800 to 2400 Incl
4.762 to 7.938, excl	4.762	6.35	9.52
7.938 to 12.70, excl	6.35	9.52	9.52
12.70 to 19.05, excl	9.52	9.52	12.70
19.05 to 25.40, excl	12.70	12.70	15.88
25.40 to 31.75, excl	15.88	15.88	19.05

4.3.1.2 Sheared Plate Over 240 Inches (6000 mm) in Length

Minus tolerance shall be 0.1875 inch (4.762 mm) for all widths and all thicknesses; plus tolerance shall be 0.0625 inch (1.588 mm) greater than those of Table 7.

4.3.1.3 Abrasive-Cut Plate

Standard width tolerances for abrasive-cut plate shall be ± 0.125 inch (± 3.18 mm) for specified thicknesses 1.250 inches (31.76 mm) and under and $+0.1875$ inch, -0.125 inch ($+4.762$ mm, -3.18 mm) for specified thicknesses over 1.250 to 2.750 inches (31.75 to 69.85 mm), inclusive.

4.3.2 Tolerances for width of powder or inert-arc cut plate and for diameter of machined, powder, or inert-arc cut circular plate shall be as agreed upon by the purchaser and vendor.

5. LENGTH

5.1 Sheet and Strip

Definite lengths shall vary not more than $+1/8$ inch ($+3.18$ mm), -0 from the length ordered.

5.2 Hot-Rolled Plate

5.2.1 Nickel, Nickel-Chromium, Nickel-Copper, Nickel-Molybdenum, Nickel-Molybdenum-Chromium, and Cobalt Alloys

5.2.1.1 Sheared Plate

Minus tolerance shall be 0.125 inch (3.18 mm) for all lengths and all thicknesses; plus tolerances shall be as shown in Table 8.

Table 8A - Hot-rolled, sheared plate - length tolerance (inch/pound units)

Specified Thickness Inches	Length Tolerance Inches Plus Only for Lengths of 24 to 60 Inches Incl	Length Tolerance Inches Plus Only for Lengths of Over 60 to 96 Inches Incl	Length Tolerance Inches Plus Only for Lengths of Over 96 to 120 Inches Incl	Length Tolerance Inches Plus Only for Lengths of Over 120 to 240 Inches Incl	Length Tolerance Inches Plus Only for Lengths of Over 240 Inches
0.1875 to 0.3125, excl	0.1875	0.250	0.375	0.500	0.625
0.3125 to 0.500, excl	0.375	0.500	0.500	0.500	0.625
0.500 to 0.750, excl	0.500	0.500	0.625	0.625	0.750
0.750 to 1.000, excl	0.625	0.625	0.625	0.750	0.875
1.000 to 1.250, excl	0.750	0.750	0.750	0.875	1

Table 8B - Hot-rolled, sheared plate - length tolerance (SI units)

Specified Thickness Millimeters	Length Tolerance Inches Plus Only for Lengths of 600 to 1500 mm Incl	Length Tolerance Inches Plus Only for Lengths of Over 1500 to 2400 mm Incl	Length Tolerance Inches Plus Only for Lengths of Over 2400 to 3000 mm Incl	Length Tolerance Inches Plus Only for Lengths of Over 3000 to 6000 mm Incl	Length Tolerance Inches Plus Only for Lengths of Over 6000 mm
4.762 to 7.938, excl	4.762	6.35	9.52	12.70	15.88
7.938 to 12.70, excl	9.52	12.70	12.70	12.70	15.88
12.70 to 19.05, excl	12.70	12.70	15.88	15.88	19.05
19.05 to 25.40, excl	15.88	15.88	15.88	19.05	22.22
25.40 to 31.75, excl	19.05	19.05	19.05	22.22	25.40

5.2.1.2 Abrasive-Cut Plate

Standard length tolerances for abrasive-cut plate shall be ± 0.125 inch (± 3.18 mm) for specified thicknesses 1.250 inches (3.18 mm) and under and $+0.1875$ inch, -0.125 inch ($+4.762$, -3.18 mm) for specified thicknesses over 1.250 to 2.750 inches (31.75 to 69.85 mm), inclusive.

5.2.2 Tolerances for length of powder or inert-arc cut plate shall be as agreed upon by the purchaser and vendor.

6. STRAIGHTNESS

Sheet and flat strip shall be of such straightness that the maximum edgewise curvature (depth of arc) shall be not greater than 0.050 inch (1.27 mm) in any foot (300 mm) of length.

7. FLATNESS

7.1 Sheet and Flat Strip

Shall be commercially flat unless cold worked after final heat treatment or when ordered for spinning or deep drawing.