



AEROSPACE MATERIAL SPECIFICATION

AMS2252™**REV. E**

Issued 1945-07
Revised 2016-11
Reaffirmed 2021-09

Superseding AMS2252D

(R) Tolerances
Low-Alloy Steel Sheet, Strip, and Plate

RATIONALE

AMS2252E is a Five-Year review and update of this specification that includes the addition of and alignment with relevant ASTM tables.

1. SCOPE

This specification covers established inch/pound manufacturing tolerances applicable to low-alloy steel sheet, strip, and plate 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 the specified range.

1.1 MAM2252, the metric version of this AMS, has been cancelled and superseded by this specification.

2. REFERENCES

2.1 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.

2.1.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM A6 Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

ASTM A505 Standard Specification for Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, General Requirements for

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2021 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS2252E>

2.2 Definition of Terms

2.2.1 COMPARABLE: The table in this specification has similar attributes, but the values and/or limits are different from the referenced table.

2.2.2 EQUIVALENT: The table in this specification has the same values and limits as the referenced table.

3. THICKNESS

3.1 Hot Rolled Sheets; Coils and Cut Lengths

See Table 1, (equivalent to ASTM A505-16 Table 4).

Table 1 - Thickness tolerance, inch, plus and minus; for inch width ranges shown

Specified Thickness Inch	Over 24 to 32, incl	Over 32 to 40, incl	Over 40 to 48, incl	Over 48 to 60, incl	Over 60 to 70, incl	Over 70 to 80, incl	Over 80 to 90, incl
0.0528 to 0.0710, incl	0.006	0.006	0.006	0.007	0.007	--	--
Over 0.0710 to 0.0821, incl	0.007	0.007	0.007	0.007	0.008	0.008	--
Over 0.0821 to 0.0971, incl	0.007	0.008	0.008	0.008	0.009	0.009	0.010
Over 0.0971 to 0.1799, incl	0.008	0.009	0.010	0.010	0.011	0.012	0.012
Over 0.1799 to 0.2299, incl	0.009	0.009	0.010	--	--	--	--

3.1.1 Thickness applies at any point on the sheet not less than 3/8 inch from a cut edge or 3/4 inch from a mill edge.

3.2 Cold Rolled Sheets; Coils and Cut Lengths

See Table 2, (equivalent to ASTM A505-16 Table 6).

Table 2 – Thickness tolerance, inch, plus and minus; for inch width ranges shown

Specified Thickness Inch	Over 24 to 32, incl	Over 32 to 40, incl	Over 40 to 48, incl	Over 48 to 60, incl	Over 60 to 70, incl	Over 70 to 80, incl	Over 80 to 90, incl
0.0528 to 0.0567, incl	0.005	0.005	0.005	0.005	0.006	--	--
0.0568 to 0.0709, incl	0.005	0.005	0.005	0.006	0.006	--	--
0.0710 to 0.0821, incl	0.005	0.006	0.006	0.006	0.007	0.007	--
0.0822 to 0.0971, incl	0.006	0.007	0.008	0.008	0.009	0.009	0.010
0.0972 to 0.1419, incl	0.007	0.008	0.009	0.010	0.010	0.011	0.012
0.1420 to 0.1799, incl	0.008	0.009	0.010	0.010	0.011	0.012	0.012
0.1800 to 0.2299, incl	0.008	0.009	0.010	--	--	--	--

3.2.1 Thickness applies at any point on the sheet not less than 3/8 inch from a cut edge or 3/4 inch from a mill edge.

3.3 Hot Rolled Strip; Coils and Cut Lengths, Excluding Crown

See Table 3, (equivalent to ASTM A505-16 Table 13).

Table 3 – Thickness tolerance, inch, plus and minus; for inch width ranges shown

Specified Thickness Inch	Up to 6, incl	Over 6 to 12, incl	Over 12 to 15, incl	Over 15 to 20, incl	Over 20 to 24, incl
0.0528 to 0.0710, excl	0.005	0.005	0.006	0.006	0.006
0.0710 to 0.0971, incl	0.005	0.005	0.006	0.007	0.007
0.0972 to 0.1120, incl	0.005	0.005	0.007	0.008	0.008
0.1121 to 0.1419, incl	0.005	0.006	0.007	0.008	0.008
0.1420 to 0.1718, incl	0.005	0.006	0.007	0.008	0.009
0.1719 to 0.1874, incl	0.006	0.006	0.007	0.009	0.009
0.1875 to 0.2030, incl	0.006	0.006	0.008	0.009	0.009
0.2031 to 0.2299, incl	--	0.007	0.008	0.009	0.009

3.3.1 Thickness applies 3/8 inch from the edge of strip 1 inch or wider and at any point on strip less than 1 inch wide.

3.3.2 Crown Tolerances for Hot Rolled Strip, Coils and Cut Lengths

See Table 4, (equivalent to ASTM A505-16 Table 14).

Table 4 - Crown thickness tolerance, inch

Specified Width	Maximum Additional Thickness at Center
Over 1 to 3-1/2, incl	0.002
Over 3-1/2 to 6, incl	0.003
Over 6 to 12, incl	0.004
Over 12 to 15, incl	0.005
Over 15 to 23-15/16, incl	0.006

3.4 Cold Rolled Strip; Coils and Cut Lengths

See Table 5, (equivalent to ASTM A505-16 Table 18).

Table 5 - Thickness tolerance, inch, plus and minus; for inch width ranges shown

Specified Thickness Inch	Up to 1, excl	1 to 3, excl	3 to 6, incl	Over 6 to 9, incl	Over 9 to 12, incl	Over 12 to 16, incl	Over 16 to 20, incl	Over 20 to 23-15/16, incl
0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.0015	0.0015
0.011	0.001	0.001	0.001	0.001	0.001	0.0015	0.0015	0.0015
0.012	0.001	0.001	0.001	0.001	0.0015	0.0015	0.0015	0.0015
Over 0.012 to 0.016, incl	0.001	0.001	0.001	0.0015	0.0015	0.0015	0.002	0.002
Over 0.016 to 0.019, incl	0.001	0.001	0.001	0.0015	0.0015	0.002	0.002	0.002
Over 0.019 to 0.025, incl	0.001	0.001	0.0015	0.002	0.002	0.002	0.0025	0.0025
Over 0.025 to 0.028, incl	0.001	0.0015	0.0015	0.002	0.002	0.002	0.0025	0.003
Over 0.028 to 0.034, incl	0.0015	0.0015	0.002	0.0025	0.0025	0.0025	0.003	0.003
Over 0.034 to 0.039, incl	0.002	0.002	0.0025	0.003	0.003	0.003	0.003	0.003
Over 0.039 to 0.049, incl	0.002	0.002	0.0025	0.003	0.003	0.003	0.004	0.004
Over 0.049 to 0.068, incl	0.002	0.002	0.003	0.003	0.003	0.003	0.004	0.004
Over 0.068 to 0.099, incl	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004
Over 0.099 to 0.160, incl	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005
Over 0.160 to 0.187, incl	0.002	0.0035	0.004	0.004	0.004	0.005	0.006	0.006

3.4.1 Thickness applies 3/8 inch from the edge of strip 1 inch or wider and at any point on strip less than 1 inch wide.

3.5 Rectangular Sheared Plates

See Table 6, (equivalent to ASTM A6-16 Table 1).

Table 6 - Tolerance, inch, plus; for inch width ranges shown

Specified Thickness Inches	8 to 48, incl	Over 48 to 60, excl	60 to 72, excl	72 to 84, excl	84 to 96, excl	96 to 108, excl	108 to 120, excl
0.180 to 0.375, excl	0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.375 to 0.625, excl	0.030	0.030	0.030	0.030	0.030	0.030	0.040
0.625 to 0.750, excl	0.030	0.030	0.030	0.030	0.030	0.040	0.040
0.750 to 1.000, excl	0.030	0.030	0.030	0.030	0.040	0.040	0.050
1.000 to 2.000, excl	0.060	0.060	0.060	0.060	0.060	0.070	0.080
2.000 to 3.000, excl	0.090	0.090	0.090	0.090	0.100	0.110	0.120
3.000 to 4.000, excl	0.110	0.110	0.110	0.110	0.110	0.130	0.140
4.000 to 6.000, excl	0.150	0.150	0.150	0.150	0.150	0.150	0.150

3.5.1 Minus tolerance for all sizes shall be 0.010 inch, plus tolerance shall be as specified in Table 6.

3.5.2 Tolerances apply to measurements made at any point on widths less than 1 inch, at any point not less than 3/8 inch from a cut edge or not less than 3/4 inch from a mill edge on widths 1 inch and over, and at a point 3/8 to 3/4 inch from the longitudinal edge of rectangular sheared plates. For thicknesses measured at any other location, the thickness tolerance may vary by +75% to -0% from the values shown. Regardless of whether thickness tolerances for sheet and strip are specified equally or unequally, plus and minus, the total tolerance shall be equal to the arithmetic sum of the tabular plus and minus tolerances (twice the tubular tolerances when specified equally plus and minus).

4. WIDTH

4.1 Hot Rolled or Cold Rolled Sheets; Cut Edge, Coils and Cut Lengths

See Table 7, (equivalent to ASTM A505-16 Table 8).

Table 7 - Width tolerance, inch

Specified Width Inches	Tolerance, Plus Only
Over 24 to 30, incl	3/16
Over 30 to 50, incl	1/4
Over 50 to 80, incl	5/16
Over 80	3/8

4.2 Hot Rolled Strip; Coils and Cut Lengths, Except as Noted

4.2.1 Mill Edge

See Table 8, (equivalent to ASTM A505-16 Table 15).

Table 8 - Width tolerance, inch

Specified Width Inches		Tolerance, Plus and Minus
Up to 2,	incl	1/32
Over 2 to 5,	incl	1/16
Over 5 to 9,	incl	3/32
Over 9 to 12,	incl	1/8
Over 12 to 20,	incl	1/4
Over 20 to 23-15/16,	incl	3/8

4.2.1.1 Width measurements on mill edge strip include the mill edge.

4.2.2 Slit Edge

See Table 9, (equivalent to ASTM A505-16 Table 15).

Table 9 - Width tolerance, inch, plus and minus; for inch thickness ranges shown

Specified Width Inches		Up to 0.109, incl	Over 0.109
Up to 2,	incl	0.010	0.016
Over 2 to 5,	incl	0.010	0.020
Over 5 to 9,	incl	0.016	0.024
Over 9 to 12,	incl	0.016	0.031
Over 12 to 20,	incl	0.020	0.031
Over 20 to 23-15/16,	incl	0.031	0.031

4.2.3 Sheared Edge, Cut Lengths Only

Tolerance shall be +1/8 inch, -0 for all sizes.

4.3 Cold Rolled Strip; Coils and Cut Lengths, No. 3 Slit Edge

See Table 10, (equivalent to ASTM A505-16 Table 20).

Table 10 - Thickness tolerance, inch, plus and minus; for inch thickness ranges shown

Specified Width Inches		Over 0.0099 to 0.068, incl	Over 0.068 to 0.099, incl	Over 0.099 to 0.160, incl	Over 0.160 to 0.187, incl	Over 0.187 to 0.2499, incl
3/16 to 1/2,	incl	0.005	0.008	0.010	--	--
Over 1/2 to 6,	incl	0.005	0.008	0.010	0.016	--
Over 6 to 9,	incl	0.005	0.010	0.016	0.020	--
Over 9 to 12,	incl	0.010	0.010	0.016	0.020	--
Over 12 to 20,	incl	0.016	0.016	0.020	0.031	--
Over 20 to 23-15/16,	incl	0.020	0.020	0.020	0.031	--

4.4 Hot Rolled or Thermally Treated Plate, Sheared

See Table 11, (equivalent to ASTM A6-16 Table 3) for plus tolerance.

Table 11 - Width tolerance, inches, plus; for inch thickness ranges shown

Specified Width Inches	Specified Length Inches	Up to 3/8, excl	3/8 to 5/8, excl	5/8 to 1, excl	1 to 2, incl
Up to 60, excl	Up to 120, excl	3/8	7/16	1/2	5/8
60 to 84, excl	Up to 120, excl	7/16	1/2	5/8	3/4
84 to 108, excl	Up to 120, excl	1/2	5/8	3/4	1
108 and over	Up to 120, excl	5/8	3/4	7/8	1-1/8
Up to 60, excl	120 to 240, excl	3/8	1/2	5/8	3/4
60 to 84, excl	120 to 240, excl	1/2	5/8	3/4	7/8
84 to 108, excl	120 to 240, excl	9/16	11/16	13/16	1
108 and over	120 to 240, excl	5/8	3/4	7/8	1-1/8

4.4.1 Minus tolerance shall be 1/4 inch for all sizes.

4.5 Hot Rolled or Thermally Treated Plate, Gas Cut

See Table 12, (equivalent to ASTM A6-16 Table 8).

Table 12 - Width tolerances, inches

Specified Thickness, Inches	Tolerance
Up to 2, excl	3/4
2 to 4, excl	1
4 to 6, excl	1-1/8
6 to 8, excl	1-5/16
8 to 15, incl	1-1/2

4.5.1 These tolerances may be all under, or may be divided over and under if so specified. Tolerances are applicable to all widths and lengths.

5. LENGTH

5.1 Hot Rolled or Cold Rolled Sheet

See Table 13, (equivalent to ASTM A505-16 Table 9).

Table 13 - Length tolerance, inches

Specified Length	Tolerance, Plus Only
24 to 30, incl	1/4
Over 30 to 60, incl	1/2
Over 60 to 120, incl	3/4
Over 120 to 156, incl	1
Over 156 to 192, incl	1-1/4
Over 192 to 240, incl	1-1/2
Over 240	1-3/4

5.2 Hot Rolled Strip

See Table 14, (equivalent to ASTM A505-16 Table 16).

Table 14 - Length tolerance, inches, plus only; for inch width ranges shown

Specified Length Inches	Up to 3, incl	Over 3 to 6, incl	Over 6 to 23-15/16, incl
Up to 60, incl	1/4	3/8	1/2
Over 60 to 120, incl	3/8	1/2	3/4
Over 120 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

5.3 Cold Rolled Strip

See Table 15, (equivalent to ASTM A505-16 Table 22).

Table 15 - Length tolerance, inch, plus only for width ranges shown

Specified Length Inches	Up to 12, incl	Over 12 to 23-15/16, incl
24 to 60, incl	1/4	1/2
Over 60 to 120, incl	1/2	3/4
Over 120 to 240, incl	3/4	1

5.4 Hot Rolled or Thermally Treated Plate, Sheared

See Table 16, (equivalent to ASTM A6-16 Table 3) for plus tolerance.

Table 16 - Length tolerance, inches, plus; for inch thickness ranges shown

Specified Width Inches	Specified Length Inches	Up to 3/8, excl	3/8 to 5/8, excl	5/8 to 1, excl	1 to 2, incl
Up to 60, excl	Up to 120, excl	1/2	5/8	3/4	1
60 to 84, excl	Up to 120, excl	5/8	11/16	7/8	1
84 to 108, excl	Up to 120, excl	3/4	7/8	1	1-1/8
108 and over	Up to 120, excl	7/8	1	1-1/8	1-1/4
Up to 60, excl	120 to 240, excl	3/4	7/8	1	1-1/8
60 to 84, excl	120 to 240, excl	3/4	7/8	1	1-1/4
84 to 108, excl	120 to 240, excl	7/8	15/16	1-1/8	1-3/8
108 and over	120 to 240, excl	1	1-1/8	1-1/4	1-3/8

5.4.1 Minus tolerance shall be 1/4 inch for all sizes.

5.4.2 Tolerances for gas cut lengths are the same as tolerance for gas cut widths (see Table 12) (equivalent to ASTM A6-16 Table 8).