

A O AUTICAL MAT IAL SPECIFICATIONS

AMS 2252A

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

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TOLERANCES Alloy Steel Sheet, Strip and Plate

1. **PURPOSE:** To publish established manufacturing tolerances.
2. **APPLICATION:** Tolerances shown herein apply, unless otherwise agreed upon by purchaser and vendor. 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.
3. **THICKNESS:** Thickness is measured at any place on widths less than 1 inch. On widths 1 in. and over, thickness is measured at any point not less than 0.375 in. from a cut edge or not less than 0.75 in. from a mill edge.

3.1 Sheet:

TABLE I

Nominal Thickness Inch	Tolerance, Inch, Plus and Minus Width Ranges, Inches							
	24 to 32 incl	Over 32 to 40 incl	Over 40 to 48 incl	Over 48 to 80 incl	Over 60 to 70 incl	Over 70 to 80 incl	Over 80 to 90 incl	Over 90
Over 0.0195 to 0.0515, incl	0.005	0.005	0.005	0.005	--	--	--	--
Over 0.0515 to 0.0508, incl	0.005	0.005	0.005	0.005	0.008	--	--	--
Over 0.0508 to 0.0567, incl	0.006	0.006	0.006	0.006	0.007	--	--	--
Over 0.0567 to 0.0809, incl	0.006	0.006	0.006	0.006	0.007	--	--	--
Over 0.0809 to 0.0709, incl	0.006	0.006	0.006	0.006	0.007	--	--	--
Over 0.0709 to 0.0821, incl	0.007	0.007	0.007	0.007	0.007	--	--	--
Over 0.0821 to 0.0971, incl	0.007	0.007	0.007	0.007	0.007	0.008	--	--
Over 0.0971 to 0.1419, incl	0.008	0.008	0.008	0.008	0.009	0.009	0.010	--
Over 0.1419 to 0.1799, incl	0.009	0.009	0.010	0.010	0.011	0.012	0.012	0.012
Over 0.1799 to 0.2299, incl	0.009	0.009	0.010	0.010	0.011	0.012	0.012	0.012

Section 7C of the SAE Technical Board rules provides that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no obligation to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the reports are responsible for protecting themselves against liability for infringement of patents."

3.2 Cold Rolled Strip. This table includes crown tolerances.

TABLE II

Nominal Thickness Inch	Tolerance, Inch								
	Width Ranges, Inches								
	3/16 to 1 excl	1 to 3 excl	3 to 5 incl	Over 5 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 24 incl
0.010	+0.002 -0.001	+0.002 -0.001	+0.002 -0.001	+0.0025 -0.001	+0.0025 -0.001	+0.0025 -0.001	+0.003 -0.001	+0.0035 -0.0015	+0.0035 -0.0015
0.011	+0.002 -0.001	+0.002 -0.001	+0.002 -0.001	+0.0025 -0.001	+0.0025 -0.001	+0.0025 -0.001	+0.0035 -0.0015	+0.0035 -0.0015	+0.0035 -0.0015
0.012	+0.002 -0.001	+0.002 -0.001	+0.002 -0.001	+0.0025 -0.001	+0.0025 -0.001	+0.003 -0.0015	+0.0035 -0.0015	+0.0035 -0.0015	+0.0035 -0.0015
0.013 to 0.017, excl	+0.002 -0.001	+0.002 -0.001	+0.002 -0.001	+0.0025 -0.001	+0.003 -0.0015	+0.003 -0.0015	+0.0035 -0.0015	+0.004 -0.002	+0.004 -0.002
0.017 to 0.020, excl	+0.002 -0.001	+0.002 -0.001	+0.002 -0.001	+0.0025 -0.001	+0.003 -0.0015	+0.003 -0.0015	+0.004 -0.002	+0.004 -0.002	+0.004 -0.002
0.020 to 0.026, excl	+0.002 -0.001	+0.002 -0.001	+0.0025 -0.0015	+0.003 -0.0015	+0.0035 -0.002	+0.0035 -0.002	+0.0045 -0.002	+0.0045 -0.0025	+0.0045 -0.0025
0.026 to 0.029, excl	+0.0025 -0.001	+0.003 -0.0015	+0.003 -0.0015	+0.0035 -0.0015	+0.004 -0.002	+0.004 -0.002	+0.0045 -0.002	+0.005 -0.0025	+0.005 -0.0025
0.029 to 0.035, excl	+0.003 -0.001	+0.003 -0.0015	+0.0035 -0.002	+0.004 -0.002	+0.0045 -0.0025	+0.0045 -0.0025	+0.005 -0.0025	+0.0055 -0.003	+0.0055 -0.003
0.035 to 0.040, excl	+0.0035 -0.002	+0.0035 -0.002	+0.004 -0.0025	+0.0045 -0.0025	+0.005 -0.003	+0.005 -0.003	+0.0055 -0.003	+0.0065 -0.0035	+0.0065 -0.0035
0.040 to 0.050, excl	+0.0035 -0.002	+0.0035 -0.002	+0.004 -0.0025	+0.0045 -0.0025	+0.005 -0.003	+0.005 -0.003	+0.0055 -0.003	+0.0065 -0.004	+0.0065 -0.004
0.050 to 0.066, excl	+0.0035 -0.002	+0.0035 -0.002	+0.005 -0.003	+0.005 -0.003	+0.005 -0.003	+0.005 -0.003	+0.0055 -0.003	+0.0065 -0.004	+0.0065 -0.004
0.066 to 0.069, excl	+0.004 -0.002	+0.004 -0.002	+0.0055 -0.003	+0.0055 -0.003	+0.0055 -0.003	+0.0055 -0.003	+0.0065 -0.003	+0.007 -0.004	+0.007 -0.004
0.069 to 0.100, excl	+0.004 -0.002	+0.004 -0.002	+0.0055 -0.003	+0.0055 -0.003	+0.0055 -0.003	+0.0055 -0.003	+0.007 -0.004	+0.007 -0.004	+0.007 -0.004
0.100 to 0.161, excl	+0.004 -0.002	+0.004 -0.002	+0.0055 -0.003	+0.0055 -0.003	+0.0065 -0.004	+0.0065 -0.004	+0.007 -0.004	+0.008 -0.005	+0.008 -0.005
0.161 to 0.188, excl	+0.004 -0.002	+0.005 -0.003	+0.0065 -0.004	+0.0065 -0.004	+0.0065 -0.004	+0.0065 -0.004	+0.008 -0.005	+0.009 -0.006	+0.009 -0.006

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3.3 Hot Rolled Strip: This table includes crown tolerances.

TABLE III

Nominal Thickness Inch	Tolerance, Inch Width Ranges, Inches						
	1 and under	Over 1 to 3-1/2 incl	Over 3-1/2 to 6 incl	Over 6 to 12 incl	Over 12 to 15 incl	Over 15 to 20 incl	Over 20 to 24 excl
0.0568 to 0.0709, incl	+0.005	+0.007	+0.008	+0.009	+0.011	+0.012	+0.012
	-0.005	-0.005	-0.005	-0.005	-0.006	-0.006	-0.006
Over 0.0709 to 0.0971, incl	+0.005	+0.007	+0.008	+0.009	+0.011	+0.012	+0.012
	-0.005	-0.005	-0.005	-0.005	-0.006	-0.007	-0.007
Over 0.0971 to 0.1120, incl	+0.005	+0.007	+0.008	+0.009	+0.012	+0.014	+0.014
	-0.005	-0.005	-0.005	-0.005	-0.007	-0.008	-0.008
Over 0.1120 to 0.1419, incl	+0.005	+0.007	+0.008	+0.010	+0.012	+0.014	+0.014
	-0.005	-0.005	-0.005	-0.006	-0.007	-0.008	-0.008
Over 0.1419 to 0.1718, incl	+0.005	+0.007	+0.008	+0.010	+0.012	+0.014	+0.015
	-0.005	-0.005	-0.005	-0.006	-0.007	-0.008	-0.009
Over 0.1718 to 0.1874, incl	+0.006	+0.009	+0.009	+0.010	+0.012	+0.015	+0.015
	-0.006	+0.006	-0.006	-0.006	-0.007	-0.009	-0.009
Over 0.1874 to 0.2050, incl	+0.006	+0.008	+0.009	+0.010	+0.013	+0.015	+0.015
	-0.006	-0.006	-0.006	-0.006	-0.008	-0.009	-0.009
Over 0.2050 to 0.2299, incl	--	--	--	+0.011	+0.013	+0.015	+0.015
	--	--	--	-0.007	-0.008	-0.009	-0.009

3.4 Plate:

TABLE IV

Nominal Thickness Inches	Tolerance, Inch, Plus Width Ranges, Inches			
	36 and under	Over 36 to 60, excl	60 to 84, excl	84 to 120, excl
Under 0.375	0.024	0.030	0.035	0.038
0.375 to 0.500, excl	0.030	0.034	0.038	0.041
0.500 to 0.750, excl	0.036	0.038	0.041	0.044
0.750 to 1.000, excl	0.040	0.042	0.045	0.048
1.000 to 1.500, excl	0.050	0.052	0.055	0.058
1.500 to 2.000, incl	0.056	0.060	0.065	0.070

Note. Minus tolerance shall be 0.010 in. for all thicknesses and all widths.

4. WIDTH:

4.1 Sheet:

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TABLE V

Nominal Width Inches	Tolerance, Inch Plus Only
24 to 30, incl	3/16
Over 30 to 40, incl	1/4
Over 40 to 60, incl	5/16
Over 60	3/8

4.2 Cold Rolled Strip:

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TABLE VI

Nominal Width Inches	Tolerance, Inch, Plus and Minus Thickness Ranges, Inch			
	0.010 to 0.069 excl	0.069 to 0.100 excl	0.100 to 0.161 excl	0.161 to 0.188 excl
0.1875 to 0.500, excl	0.005	0.008	0.010	--
0.500 to 6.000, incl	0.005	0.008	0.010	0.016
Over 6.000 to 9.000, incl	0.005	0.010	0.016	0.020
Over 9.000 to 12.000, incl	0.010	0.010	0.016	0.020
Over 12.000 to 20.000, incl	0.016	0.016	0.020	0.031
Over 20.000 to 24.000, excl	0.020	0.020	0.020	0.031

4.3 Hot Rolled Strip:

4.3.1 Slit Edge:

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TABLE VII

Nominal Width Inches	Tolerance, Inch, Plus and Minus Thickness Ranges, Inch	
	0.109 and under	Over 0.109
2 and under	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 24, excl	0.031	0.031

4.3.2 Sheared Edge: +1/8 in. for widths 20 in. and under, +3/16 in. for widths over 20 to 24 in., excl; -0 for all widths.

4.4 Plate:

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TABLE VIII

Nominal Width Inches	Tolerance, Inch, Plus Thickness Ranges, Inches			
	Under 3/8	3/8 to 5/8 excl	5/8 to 1 excl	1 to 2 incl
Over 8.0 to 20.0, excl	1/8	1/8	3/16	1/4
20.0 to 36.0, excl	3/16	1/4	5/16	3/8
36.0 and over	5/16	3/8	7/16	1/2

Note. Minus tolerance shall be 1/8 in. for all widths and all thicknesses.

5. LENGTH:

5.1 Sheet:

TABLE IX

Nominal Length Inches	Tolerance, Inch Plus Only
15 and under	1/8
Over 15 to 30, incl	1/4
Over 30 to 60, incl	1/2
Over 60 to 96, incl	3/4
Over 96 to 120, incl	1
Over 120 to 156, incl	1-1/4
Over 156 to 192, incl	1-1/2
Over 192 to 240, incl	1-3/4
Over 240	2

5.2 Gold Rolled Strip:

TABLE X

Nominal Length Inches	Tolerance, Inch, Plus Only Width Ranges, Inches	
	Over 1/2 to 12 incl	Over 12 to 24 excl
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