

# AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard

**SAE** MAM-2202

REV  
B

Issued 1980-10-15

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Superseding MAM-2202A

## TOLERANCES, METRIC Aluminum Alloy and Magnesium Alloy Sheet and Plate

1. SCOPE: This specification covers established manufacturing tolerances applicable to aluminum alloy and magnesium alloy sheet and plate ordered to metric dimensions. These tolerances apply to all conditions, unless otherwise noted.
  - 1.1 These tables are based on logical metric values and preferred metric sizes.
  - 1.2 Throughout this specification, the term "metric" is intended to refer to the SI system.
  - 1.3 AMS-2202 is the inch/pound version of this MAM.

**REAFFIRMED**

5/95

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2. THICKNESS OF FLAT SHEET, COILED SHEET AND PLATE: (See Note 1):

2.1 Applicable to all aluminum sheet and plate alloys not included in Table II or  
 0 specified for aerospace applications and to all magnesium alloys  
(See Note 2):

TABLE I

Tolerances, Millimetres, Plus and Minus  
Width Ranges, Millimetres

| Specified Thickness<br>Thickness |           |              | Up<br>to<br>1000,<br>incl | Over<br>1000<br>to<br>1500,<br>incl | Over<br>1500<br>to<br>2000,<br>incl | Over<br>2000<br>to<br>2500,<br>incl | Over<br>2500<br>to<br>3000,<br>incl | Over<br>3000<br>to<br>3500,<br>incl | Over<br>3500<br>to<br>4000,<br>incl | Over<br>4000<br>to<br>4500,<br>incl |
|----------------------------------|-----------|--------------|---------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|                                  | 0.15 to   | 0.25, incl   | 0.025                     | 0.040                               | --                                  | --                                  | --                                  | --                                  | --                                  | --                                  |
| Over                             | 0.25 to   | 0.40, incl   | 0.025                     | 0.040                               | --                                  | --                                  | --                                  | --                                  | --                                  | --                                  |
| Over                             | 0.40 to   | 0.63, incl   | 0.040                     | 0.05                                | 0.08                                | 0.09                                | --                                  | --                                  | --                                  | --                                  |
| Over                             | 0.63 to   | 0.80, incl   | 0.045                     | 0.06                                | 0.09                                | 0.10                                | --                                  | --                                  | --                                  | --                                  |
| Over                             | 0.80 to   | 1.00, incl   | 0.050                     | 0.08                                | 0.09                                | 0.11                                | 0.15                                | --                                  | --                                  | --                                  |
| Over                             | 1.00 to   | 1.20, incl   | 0.06                      | 0.09                                | 0.11                                | 0.14                                | 0.18                                | 0.20                                | --                                  | --                                  |
| Over                             | 1.20 to   | 1.60, incl   | 0.08                      | 0.09                                | 0.13                                | 0.15                                | 0.18                                | 0.23                                | --                                  | --                                  |
| Over                             | 1.60 to   | 2.00, incl   | 0.09                      | 0.10                                | 0.14                                | 0.18                                | 0.20                                | 0.25                                | --                                  | --                                  |
| Over                             | 2.00 to   | 2.50, incl   | 0.09                      | 0.11                                | 0.15                                | 0.18                                | 0.23                                | 0.28                                | --                                  | --                                  |
| Over                             | 2.50 to   | 3.20, incl   | 0.11                      | 0.14                                | 0.18                                | 0.23                                | 0.28                                | 0.33                                | --                                  | --                                  |
| Over                             | 3.20 to   | 4.00, incl   | 0.14                      | 0.18                                | 0.23                                | 0.28                                | 0.33                                | 0.38                                | --                                  | --                                  |
| Over                             | 4.00 to   | 5.00, incl   | 0.18                      | 0.23                                | 0.28                                | 0.33                                | 0.38                                | 0.46                                | --                                  | --                                  |
| Over                             | 5.00 to   | 6.30, incl   | 0.23                      | 0.28                                | 0.33                                | 0.38                                | 0.46                                | 0.56                                | 0.69                                | --                                  |
| Over                             | 6.30 to   | 8.00, incl   | 0.30                      | 0.36                                | 0.38                                | 0.46                                | 0.56                                | 0.69                                | 0.89                                | 1.10                                |
| Over                             | 8.00 to   | 10.00, incl  | 0.38                      | 0.43                                | 0.57                                | 0.58                                | 0.69                                | 0.84                                | 1.05                                | 1.30                                |
| Over                             | 10.00 to  | 16.00, incl  | 0.58                      | 0.58                                | 0.69                                | 0.81                                | 0.89                                | 1.10                                | 1.35                                | 1.65                                |
| Over                             | 16.00 to  | 25.00, incl  | 0.79                      | 0.79                                | 0.94                                | 1.10                                | 1.20                                | 1.45                                | 1.80                                | 2.15                                |
| Over                             | 25.00 to  | 40.00, incl  | 1.00                      | 1.00                                | 1.20                                | 1.40                                | 1.65                                | 1.90                                | 2.30                                | 2.65                                |
| Over                             | 40.00 to  | 60.00, incl  | 1.40                      | 1.40                                | 1.55                                | 1.80                                | 2.15                                | 2.55                                | 2.90                                | --                                  |
| Over                             | 60.00 to  | 80.00, incl  | 1.90                      | 1.90                                | 2.15                                | 2.55                                | 2.65                                | 3.20                                | --                                  | --                                  |
| Over                             | 80.00 to  | 100.00, incl | 2.55                      | 2.55                                | 2.90                                | 3.20                                | 3.30                                | 4.00                                | --                                  | --                                  |
| Over                             | 100.00 to | 160.00, incl | 3.30                      | 3.30                                | 3.70                                | 4.20                                | --                                  | --                                  | --                                  | --                                  |

2.2 Aluminum Alloys: 2014, 2024, 2124, 2219, 2324, 2419, 7050, 7075, 7150, 7178, 7475 for aerospace applications. (See Note 2):

TABLE II

| SPECIFIED<br>THICKNESS<br>mm           | SPECIFIED WIDTH, MILLIMETRES |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
|----------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                                        | Up<br>to<br>1000,            | Over<br>1000,<br>to<br>1200, | Over<br>1200,<br>to<br>1400, | Over<br>1400,<br>to<br>1500, | Over<br>1500,<br>to<br>1800, | Over<br>1800,<br>to<br>2000, | Over<br>2000,<br>to<br>2200, | Over<br>2200,<br>to<br>2500, | Over<br>2500,<br>to<br>3000, | Over<br>3000,<br>to<br>3500, | Over<br>3500,<br>to<br>4000, | Over<br>4000,<br>to<br>4500, |
|                                        | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         | incl                         |
| TOLERANCE, Millimetres, plus and minus |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| Over 0.15 to 0.25, incl                | 0.035                        | 0.060                        | 0.060                        | 0.060                        |                              |                              |                              |                              |                              |                              |                              |                              |
| Over 0.25 to 0.40, incl                | 0.040                        | 0.07                         | 0.07                         | 0.07                         |                              |                              |                              |                              |                              |                              |                              |                              |
| Over 0.40 to 0.63, incl                | 0.040                        | 0.07                         | 0.07                         | 0.07                         |                              |                              |                              |                              |                              |                              |                              |                              |
| Over 0.63 to 0.80, incl                | 0.040                        | 0.040                        | 0.060                        | 0.08                         | 0.08                         |                              |                              |                              |                              |                              |                              |                              |
| Over 0.80 to 1.00, incl                | 0.040                        | 0.040                        | 0.060                        | 0.08                         | 0.08                         | 0.10                         | 0.10                         | 0.20                         |                              |                              |                              |                              |
| Over 1.00 to 1.20, incl                | 0.050                        | 0.050                        | 0.060                        | 0.08                         | 0.08                         | 0.10                         | 0.10                         | 0.22                         | 0.26                         | 0.30                         |                              |                              |
| Over 1.20 to 1.60, incl                | 0.050                        | 0.050                        | 0.08                         | 0.08                         | 0.08                         | 0.10                         | 0.10                         | 0.24                         | 0.30                         | 0.34                         |                              |                              |
| Over 1.60 to 2.00, incl                | 0.050                        | 0.050                        | 0.08                         | 0.09                         | 0.09                         | 0.10                         | 0.10                         | 0.26                         | 0.34                         | 0.40                         |                              |                              |
| Over 2.00 to 2.50, incl                | 0.065                        | 0.065                        | 0.09                         | 0.11                         | 0.11                         | 0.12                         | 0.12                         | 0.30                         | 0.38                         | 0.46                         |                              |                              |
| Over 2.50 to 3.20, incl                | 0.09                         | 0.09                         | 0.10                         | 0.12                         | 0.12                         | 0.12                         | 0.12                         | 0.34                         | 0.42                         | 0.52                         |                              |                              |
| Over 3.20 to 4.00, incl                | 0.11                         | 0.11                         | 0.12                         | 0.18                         | 0.18                         | 0.25                         | 0.25                         | 0.40                         | 0.48                         | 0.58                         |                              |                              |
| Over 4.00 to 5.00, incl                | 0.15                         | 0.18                         | 0.18                         | 0.23                         | 0.23                         | 0.30                         | 0.30                         | 0.46                         | 0.56                         | 0.66                         |                              |                              |
| Over 5.00 to 6.30, incl                | 0.24                         | 0.32                         | 0.32                         | 0.32                         | 0.44                         | 0.44                         | 0.54                         | 0.54                         | 0.64                         | 0.76                         |                              |                              |
| Over 6.30 to 8.00, incl                | 0.32                         | 0.40                         | 0.40                         | 0.40                         | 0.50                         | 0.50                         | 0.62                         | 0.62                         | 0.74                         | 0.86                         | 1.05                         | 1.30                         |
| Over 8.00 to 10.00, incl               | 0.44                         | 0.46                         | 0.46                         | 0.46                         | 0.58                         | 0.58                         | 0.72                         | 0.72                         | 0.86                         | 1.00                         | 1.20                         | 1.50                         |
| Over 10.00 to 16.00, incl              | 0.60                         | 0.60                         | 0.60                         | 0.60                         | 0.72                         | 0.72                         | 0.86                         | 0.86                         | 1.00                         | 1.20                         | 1.50                         | 1.80                         |
| Over 16.00 to 25.00, incl              | 0.80                         | 0.80                         | 0.80                         | 0.80                         | 0.94                         | 0.94                         | 1.10                         | 1.10                         | 1.30                         | 1.55                         | 1.90                         | 2.20                         |
| Over 25.00 to 40.00, incl              | 1.00                         | 1.00                         | 1.00                         | 1.00                         | 1.20                         | 1.20                         | 1.40                         | 1.40                         | 1.65                         | 1.95                         | 2.30                         | 2.70                         |
| Over 40.00 to 60.00, incl              | 1.40                         | 1.40                         | 1.40                         | 1.40                         | 1.60                         | 1.90                         | 1.90                         | 1.90                         | 2.30                         | 2.60                         | 3.00                         |                              |
| Over 60.00 to 80.00, incl              | 2.00                         | 2.00                         | 2.00                         | 2.00                         | 2.10                         | 2.10                         | 2.80                         | 2.80                         | 3.30                         | 3.30                         |                              |                              |
| Over 80.00 to 100.00, incl             | 2.60                         | 2.60                         | 2.60                         | 2.60                         | 2.95                         | 2.95                         | 3.40                         | 3.40                         | 3.90                         | 4.10                         |                              |                              |
| Over 100.00 to 160.00, incl            | 3.40                         | 3.40                         | 3.40                         | 3.40                         | 3.80                         | 3.80                         | 4.30                         | 4.30                         |                              |                              |                              |                              |

### 3. WIDTH (See Note 3):

#### 3.1 Sheared Flat Sheet and Plate:

3.1.1 Sheet:

TABLE III

Tolerance, Millimetres, Plus and Minus  
Thickness Ranges, Millimetres

| Specified Width<br>Millimetres | Over<br>0.15 to<br>3.20, incl | Over<br>3.20 to<br>6.30, incl |
|--------------------------------|-------------------------------|-------------------------------|
| Up to 250, incl                | 1.5                           | 2                             |
| Over 250 to 500, incl          | 2                             | 2.5                           |
| Over 500 to 1000, incl         | 2.5                           | 3                             |
| Over 1000 to 2000, incl        | 3                             | 3.5                           |
| Over 2000 to 3000, incl        | 4                             | 4.5                           |
| Over 3000 to 4000, incl        | 4.5                           | 5                             |

3.1.2 Plate, Thickness Over 6.30 to 12.50 Millimetres, Incl:

TABLE IV

| Specified Width<br>Millimetres | Tolerance, Millimetres<br>Plus Only |
|--------------------------------|-------------------------------------|
| Up to 250, incl                | 6                                   |
| Over 250 to 500, incl          | 7                                   |
| Over 500 to 1000, incl         | 8                                   |
| Over 1000 to 2000, incl        | 9                                   |
| Over 2000 to 3000, incl        | 11                                  |
| Over 3000 to 4000, incl        | 12                                  |
| Over 4000 to 5000, incl        | 14                                  |

3.2 Slit Coiled Sheet (See Note 1):

TABLE V

Tolerances, Millimetres, Plus and Minus  
Thickness Ranges, Millimetres

| Specified Width<br>Millimetres | Over<br>0.15 to<br>3.20, incl | Over<br>3.20 to<br>5.00, incl | Over<br>5.00 to<br>6.30, incl |
|--------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Up to 150, incl                | 0.25                          | --                            | --                            |
| Over 150 to 250, incl          | 0.5                           | 1                             | 1                             |
| Over 250 to 500, incl          | 1                             | 1                             | 1                             |
| Over 500 to 750, incl          | 1                             | 1                             | 1.5                           |
| Over 750 to 1000, incl         | 1                             | 1.5                           | 2                             |
| Over 1000 to 1500, incl        | 1.5                           | 2                             | 3                             |
| Over 1500 to 2000, incl        | 2.5                           | 3                             | 4                             |
| Over 2000 to 2500, incl        | 3.5                           | --                            | --                            |

3.3 Sawed Flat Sheet and Plate:

TABLE VI

| Specified Width<br>Millimetres | <u>Tolerances, Millimetres</u><br><u>Thickness Ranges, Millimetres</u> |                                 |
|--------------------------------|------------------------------------------------------------------------|---------------------------------|
|                                | Over<br>2.00 to<br>6.30, incl                                          | Over<br>6.30 to<br>160.00, incl |
| Up to 1,000, incl              | $\pm 3$                                                                | + 6, -0                         |
| Over 1,000 to 2,000, incl      | $\pm 3$                                                                | + 7, -0                         |
| Over 2,000 to 3,000, incl      | $\pm 4$                                                                | + 8, -0                         |
| Over 3,000 to 4,000, incl      | $\pm 4$                                                                | + 9, -0                         |
| Over 4,000 to 5,000, incl      | $\pm 5$                                                                | +10, -0                         |
| Over 5,000 to 7,500, incl      | $\pm 6$                                                                | +12, -0                         |
| Over 7,500 to 10,000, incl     | $\pm 7$                                                                | +14, -0                         |
| Over 10,000 to 12,500, incl    | $\pm 8$                                                                | +16, -0                         |
| Over 12,500 to 15,000, incl    | $\pm 9$                                                                | +18, -0                         |
| Over 15,000 to 17,500, incl    | $\pm 10$                                                               | +20, -0                         |
| Over 17,500 to 20,000, incl    | $\pm 11$                                                               | +22, -0                         |

4. LENGTH (See Note 3):4.1 Sheared Flat Sheet and Plate:4.1.1 Sheet:

TABLE VII

| Specified Length<br>Millimetres | <u>Tolerances, Millimetres, Plus and Minus</u><br><u>Thickness Ranges, Millimetres</u> |                               |
|---------------------------------|----------------------------------------------------------------------------------------|-------------------------------|
|                                 | Over<br>0.15 to<br>3.20, incl                                                          | Over<br>3.20 to<br>6.30, incl |
| Up to 1,000, incl               | 2                                                                                      | 2.5                           |
| Over 1,000 to 2,000, incl       | 2.5                                                                                    | 3                             |
| Over 2,000 to 3,000, incl       | 3                                                                                      | 3                             |
| Over 3,000 to 4,000, incl       | 3                                                                                      | 3.5                           |
| Over 4,000 to 5,000, incl       | 3.5                                                                                    | 4                             |
| Over 5,000 to 7,500, incl       | 4.5                                                                                    | 5                             |
| Over 7,500 to 10,000, incl      | 5                                                                                      | 6                             |
| Over 10,000 to 12,500, incl     | 6                                                                                      | 7                             |
| Over 12,500 to 15,000, incl     | 7                                                                                      | 8                             |
| Over 15,000 to 17,500, incl     | 8                                                                                      | 9                             |

4.1.2 Plate, Thickness Over 6.30 to 12.50 Millimetres, Incl:TABLE VIII

| Specified Length<br>Millimetres | Tolerance, Millimetres<br>Plus Only |
|---------------------------------|-------------------------------------|
| Up to 1,000, incl               | 8                                   |
| Over 1,000 to 2,000, incl       | 9                                   |
| Over 2,000 to 3,000, incl       | 10                                  |
| Over 3,000 to 4,000, incl       | 10                                  |
| Over 4,000 to 5,000, incl       | 11                                  |
| Over 5,000 to 7,500, incl       | 13                                  |
| Over 7,500 to 10,000, incl      | 14                                  |
| Over 10,000 to 12,500, incl     | 16                                  |
| Over 12,500 to 15,000, incl     | 18                                  |
| Over 15,000 to 17,500, incl     | 19                                  |
| Over 17,500 to 20,000, incl     | 21                                  |

4.2 Sawed Flat Sheet and Plate:TABLE IX

| Specified Length<br>Millimetres | Tolerance, Millimetres        |                                 |
|---------------------------------|-------------------------------|---------------------------------|
|                                 | Thickness Ranges, Millimetres |                                 |
|                                 | Over<br>2.00 to<br>6.30, incl | Over<br>6.30 to<br>160.00, incl |
| Up to 1,000, incl               | $\pm 3$                       | + 6, -0                         |
| Over 1,000 to 2,000, incl       | $\pm 3$                       | + 7, -0                         |
| Over 2,000 to 3,000, incl       | $\pm 4$                       | + 8, -0                         |
| Over 3,000 to 4,000, incl       | $\pm 4$                       | + 9, -0                         |
| Over 4,000 to 5,000, incl       | $\pm 5$                       | +10, -0                         |
| Over 5,000 to 7,500, incl       | $\pm 6$                       | +12, -0                         |
| Over 7,500 to 10,000, incl      | $\pm 7$                       | +14, -0                         |
| Over 10,000 to 12,500, incl     | $\pm 8$                       | +16, -0                         |
| Over 12,500 to 15,000, incl     | $\pm 9$                       | +18, -0                         |
| Over 15,000 to 17,500, incl     | $\pm 10$                      | +20, -0                         |
| Over 17,500 to 20,000, incl     | $\pm 11$                      | +22, -0                         |

5. LATERAL BOW (Camber) (See Note 4):5.1 Sheared or Sawed Flat Sheet:5.1.1 Over 0.15 to 3.20 Millimetres, Inclusive, Specified Thickness:

TABLE X

Tolerance, Millimetres (See Note 5)  
Specified Width, Millimetres

| Specified Length<br>Millimetres | Up to 100,<br>incl | Over 100 to<br>250, incl | Over 250 to<br>900, incl | Over<br>900 |
|---------------------------------|--------------------|--------------------------|--------------------------|-------------|
| Up to 1000, incl                | 3                  | 1                        | 1                        | 0.5         |
| Over 1000 to 2000, incl         | 11                 | 3.5                      | 2.5                      | 1.5         |
| Over 2000 to 3000, incl         | 25                 | 8                        | 5                        | 3           |
| Over 3000 to 4000, incl         | 45                 | 13                       | 9                        | 5           |
| Over 4000 to 5000, incl         | 70                 | 21                       | 14                       | 8           |
| Over 5000 to 6000, incl         | 100                | 30                       | 20                       | 12          |

5.1.2 Over 3.20 to 6.30 Millimetres, Inclusive, Specified Thickness:

TABLE XI

Tolerance, Millimetres (See Note 5)  
Specified Width, Millimetres

| Specified Length<br>Millimetres | Over 100 to<br>400, incl | Over<br>400 |
|---------------------------------|--------------------------|-------------|
| Up to 1000, incl                | 1                        | 0.5         |
| Over 1000 to 2000, incl         | 3                        | 1.5         |
| Over 2000 to 3000, incl         | 6                        | 3           |
| Over 3000 to 4000, incl         | 11                       | 5           |
| Over 4000 to 5000, incl         | 17                       | 8           |
| Over 5000 to 6000, incl         | 25                       | 12          |

5.2 Slit Coiled Sheet:

TABLE XII

Tolerance, Millimetres in 2000 Millimetres  
Thickness Ranges, Millimetres

| Specified Width<br>Millimetres | Over 0.15<br>to 1.60,<br>incl | Over 1.60<br>to 3.20,<br>incl |
|--------------------------------|-------------------------------|-------------------------------|
| 12 to 25, incl                 | 20                            | -                             |
| Over 25 to 50, incl            | 15                            | -                             |
| Over 50 to 100, incl           | 10                            | 10                            |
| Over 100 to 250, incl          | 6                             | 6                             |
| Over 250                       | 5                             | 5                             |

5.3 Sheared or Sawed Plate, Thickness 6.30 to 150.00 Millimetres, Inclusive:

TABLE XIII

Tolerance, Millimetres (See Note 5)  
Specified Width, Millimetres

| Specified Length<br>Millimetres | Up to 250<br>Millimetres<br>incl | Over 250 to<br>400 Millimetres<br>incl | Over 400<br>Millimetres |
|---------------------------------|----------------------------------|----------------------------------------|-------------------------|
| Up to 1000, incl                | 3                                | 1                                      | 0.5                     |
| Over 1000 to 2000, incl         | 11                               | 3                                      | 2                       |
| Over 2000 to 3000, incl         | 25                               | 6                                      | 3.5                     |
| Over 3000 to 4000, incl         | 45                               | 11                                     | 6                       |
| Over 4000 to 5000, incl         | 70                               | 17                                     | 10                      |
| Over 5000 to 6000, incl         | 100                              | 25                                     | 14                      |

6. FLATNESS:6.1 Flat Sheet and Plate, AZ31B Magnesium Alloy:

TABLE XIV

Tolerance, Millimetres (See Note 6)  
-0 and -H24 Tempers                      -H26 Temper

| Specified Thickness<br>Millimetres | Any 300<br>Millimetres | Any 1000<br>Millimetres | Any 300<br>Millimetres | Any 1000<br>Millimetres |
|------------------------------------|------------------------|-------------------------|------------------------|-------------------------|
| 3.20 to 6.30, incl                 | 0.50                   | 0.75                    | 0.50                   | 0.75                    |
| Over 6.30 to 12.50, incl           | 0.60                   | 0.90                    | 0.65                   | 0.95                    |
| Over 12.50 to 25.00, incl          | 0.75                   | 1.15                    | 1.25                   | 1.90                    |
| Over 25.00 to 50.00, incl          | 1.00                   | 1.50                    | 1.25                   | 1.90                    |



6.2 Plate, Magnesium Alloys Other Than AZ31B, All Tempers:

TABLE XV

| Specified Thickness<br>Millimetres | Tolerance, Millimetres<br>(See Note 7) |
|------------------------------------|----------------------------------------|
| Over 6.30 to 80.00, incl           | 7 in any 2000 mm or less               |

6.3 Flat Sheet, Aluminum Alloys:6.3.1 Alloys 1060, 1100, 1350 (EC), 3003, 3005, 3105, 5005, 5050, 5357, 5457, and 5657 (See Notes 2 and 8):

TABLE XVI

| Specified Thickness<br>Millimetres | Tolerance, Millimetres (See Notes 9, 10, 11)<br>Ranges of Distance from Center to Center of<br>Buckles or Edgewaves, Millimetres (See Notes 7, 12) |                           |                            |                            |              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|--------------|
|                                    | Up to 500,<br>incl                                                                                                                                 | Over 500 to<br>1000, incl | Over 1000 to<br>1500, incl | Over 1500 to<br>2000, incl | Over<br>2000 |
| Over 0.50 to 1.60, incl            | 2                                                                                                                                                  | 4                         | 6                          | 8                          | 10           |
| Over 1.60 to 6.30, incl            | 3                                                                                                                                                  | 5                         | 8                          | 10                         | 13           |

6.3.2 Alloys Other Than Those Listed in 6.3.1 (See Notes 2 and 8):

TABLE XVII

| Specified Thickness<br>Millimetres | Tolerance, Millimetres (See Notes 9, 10, 11)<br>Ranges of Distance from Center to Center of<br>Buckles or Edgewaves, Millimetres (See Notes 7, 12) |                           |                            |                            |              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|----------------------------|--------------|
|                                    | Up to 500,<br>incl                                                                                                                                 | Over 500 to<br>1000, incl | Over 1000 to<br>1500, incl | Over 1500 to<br>2000, incl | Over<br>2000 |
| Over 0.50 to 1.60, incl            | 4                                                                                                                                                  | 6                         | 9                          | 11                         | 14           |
| Over 1.60 to 6.30, incl            | 5                                                                                                                                                  | 7                         | 10                         | 12                         | 15           |

6.4 Plate, Aluminum Alloys Only (-HX2, -HX4, -HX6, -T36, -T361, -T37, -T86, -T861, and -T87 Tempers:6.4.1 Longitudinal Flatness:

TABLE XVIII

| Specified Thickness<br>Millimetres | Tolerance, Millimetres<br>(See Note 7) |
|------------------------------------|----------------------------------------|
| Over 6.30 to 160.00 incl           | 7 in any 2000 mm or less               |

6.4.2 Transverse Flatness:

TABLE XIX

| Specified Thickness<br>Millimetres | Tolerance, Millimetres (See Note 7)<br>Width Ranges, Millimetres |                           |                            |                                             |
|------------------------------------|------------------------------------------------------------------|---------------------------|----------------------------|---------------------------------------------|
|                                    | Up to 500,<br>incl                                               | Over 500 to<br>1000, incl | Over 1000 to<br>1500, incl | Over 1500 to<br>2000, incl<br>(See Note 13) |
| Over 6.30 to 16.00, incl           | Only Short                                                       | 7                         | 10                         | 13                                          |
| Over 16.00 to 40.00, incl          | Cycle                                                            | 6                         | 8                          | 10                                          |
| Over 40.00 to 80.00, incl          | Flatness                                                         | 5                         | 6                          | 7                                           |
| Over 80.00 to 160.00, incl         | Tolerance                                                        | 4                         | 5                          | 6                                           |
|                                    | Applies                                                          |                           |                            |                                             |

6.4.3 Short Cycle Flatness (See Note 14):

TABLE XX

| Specified Thickness<br>Millimetres | Tolerance, Millimetres<br>(See Note 15) |
|------------------------------------|-----------------------------------------|
| Over 6.30 to 16.00, incl           | 2.50                                    |
| Over 16.00 to 160.00, incl         | 1.80                                    |

6.5 Plate, Aluminum Alloys in the -T351, -T451, -T651, -T6151, -T7351, -T7651, and -T851 Tempers and LA141A Magnesium Alloy:6.5.1 Longitudinal Flatness:

TABLE XXI

| Specified Thickness<br>Millimetres | Tolerance, Millimetres<br>(See Note 7) |
|------------------------------------|----------------------------------------|
| Over 6.30 to 80.00, incl           | 5 in any 2000 mm (See Note 16)         |
| Over 80.00 to 160.00, incl         | 3.5 in any 2000 mm or less             |

6.5.2 Transverse Flatness:

TABLE XXII

Tolerance, Millimetres (See Note 7)  
Width Ranges, Millimetres

| Specified Thickness<br>Millimetres | Up to 500,<br>incl               | Over 500 to<br>1000, incl | Over 1000 to<br>1500, incl | Over 1500 to<br>2000, incl<br>(See Note 13) |
|------------------------------------|----------------------------------|---------------------------|----------------------------|---------------------------------------------|
| Over 6.30 to 16.00, incl           | Only                             | 6                         | 8                          | 10                                          |
| Over 16.00 to 40.00, incl          | Short                            | 4                         | 6                          | 8                                           |
| Over 40.00 to 80.00, incl          | Cycle                            | 3                         | 4                          | 5                                           |
| Over 80.00 to 160.00, incl         | Flatness<br>Tolerance<br>Applies | 2.5                       | 3                          | 3.5                                         |

6.5.3 Short Cycle Flatness (See Note 14):

TABLE XXIII

| Specified Thickness<br>Millimetres | Tolerance, Millimetres<br>(See Note 15) |
|------------------------------------|-----------------------------------------|
| Over 6.30 to 16.00, incl           | 2.00                                    |
| Over 16.00 to 160.00, incl         | 1.50                                    |

7. SQUARENESS OF FLAT SHEET AND PLATE:

TABLE XXIV

Allowable Difference in Length of Diagonals, Millimetres  
Width Ranges, Millimetres (See Note 17)

| Specified Length<br>Millimetres | Up to 1000                            | Over 1000                             |
|---------------------------------|---------------------------------------|---------------------------------------|
| Up to 3500, incl                | 0.8 x each 100 mm<br>segment of width | 0.7 x each 100 mm<br>segment of width |
| Over 3500                       | 1.2 x each 100 mm<br>segment of width | 1.0 x each 100 mm<br>segment of width |