

Table 3 (2) (Continued)

Symbol	Temper grade <sup>(2)</sup>	Tensile test				Bend test	
		Thickness mm	Tensile strength kgf/mm <sup>2</sup> {N/mm <sup>2</sup> }	Proof stress kgf/mm <sup>2</sup> {N/mm <sup>2</sup> }	Elongation %	Thickness mm	Inside radius
(Cont'd)	T 6	0.4 and over, up to and incl. 0.5	49 {481} min.	—	7 min.	0.4 and over, up to and incl. 0.5	Thickness x 3
		Over 0.5, up to and incl. 1	49 {481} min.	42 {412} min.	7 min.	Over 0.5, up to and incl. 1.6	Thickness x 3.5
		Over 1, up to and incl. 2.9	51 {500} min.	44 {431} min.	8 min.	Over 1.6, up to and incl. 2.9	Thickness x 4.5
		Over 2.9, up to and incl. 6	53 {520} min.	45 {441} min.	8 min.	Over 2.9, up to and incl. 6	Thickness x 5
	T 62 <sup>(7)</sup>	0.4 and over, up to and incl. 0.5	49 {481} min.	—	7 min.		
		Over 0.5, up to and incl. 1	49 {481} min.	42 {412} min.	7 min.		
		Over 1, up to and incl. 2.9	51 {500} min.	44 {431} min.	8 min.		
		Over 2.9, up to and incl. 6.5	53 {520} min.	45 {441} min.	8 min.		
		Over 6.5, up to and incl. 13	53 {520} min.	46 {451} min.	9 min.		
		Over 13, up to and incl. 20	53 {520} min.	46 {451} min.	7 min.		

Remark: The mechanical properties for the product exceeding the range of specified thickness shall be agreed upon between the concerned parties.

## 5. Dimensions and Tolerances

**5.1 Preferred Dimensions** The preferred dimensions for the plate should be as given in Table 4.

Table 4. Preferred Dimension for Plate

Unit: mm

Alloy No. Width x length Thickness	1080, 1070, 1050, 1100, 1200	1050, 1100, 1200, 5052	
	400×1 200	1 000×2 000	1 220×2 440
0.3	○	—	—
0.4	○	—	—
0.5	○	○	—
0.6	○	○	—
0.7	○	○	—
0.8	○	○	○
1.0	○	○	○
1.2	○	○	○
1.5	○	○	○
1.6	○	○	○
2.0	○	○	○
2.5	○	○	○
3	○	○	○
4	—	○	○
5	—	○	○
6	—	○	○

**5.2 Thickness of Cladding Plate of Clad Plate** The thickness of cladding plate of clad plate shall be as given in Table 5. The measurement test of the cladding plate shall be conducted for only those required by the purchaser.

Table 5. Thickness of Cladding Plate of Clad Plate

Alloy No.	Thickness of clad plate mm	Thickness of cladding plate (per one side) %
2014 clad plate	Up to and incl. 0.6	Full thickness x 8 min.
	Over 0.6, up to and incl. 1.0	Full thickness x 6 min.
	Over 1.0, up to and incl. 2.5	Full thickness x 4 min.
	Over 2.5, up to and incl. 25	Full thickness x 2 min.
2024 clad plate	Up to and incl. 1.6	Full thickness x 4 min.
	Over 1.6	Full thickness x 2 min.
7075 clad plate	Up to and incl. 1.6	Full thickness x 3.2 min.
	Over 1.6, up to and incl. 5	Full thickness x 2 min.
	Over 5, up to and incl. 13	Full thickness x 1.2 min.
	Over 13	Full thickness x 1.2 to 3

**5.3 Thickness Tolerances for Plate, Clad Plate, Coiled Sheet and Circle**

The thickness tolerances for the plate, clad plate, coiled sheet and circle shall be as specified in Tables 6 (1) to (4) inclusive.

Table 6 (1). Thickness Tolerances for Cold Reduced Products

Unit: mm

Thickness	Alloy No. Width	Tolerance					
		1085, 1080, 1070, 1050, 1100, 1200, 1 N 00, 1 N 30, 3003, 3203, 3005, 3105, 5005, 5 N 01					
		Up to and incl. 450	Over 450, up to and incl. 900	Over 900, up to and incl. 1400	Over 1400, up to and incl. 1800	Over 1800, up to and incl. 2300	Over 2300, up to and incl. 2600
Up to and incl. 0.20		±0.03	±0.03	±0.05	—	—	—
Over 0.20, up to and incl. 0.25		±0.03	±0.04	±0.05	—	—	—
Over 0.25, up to and incl. 0.45		±0.04	±0.04	±0.05	±0.06	—	—
Over 0.45, up to and incl. 0.70		±0.04	±0.05	±0.06	±0.08	—	—
Over 0.70, up to and incl. 0.90		±0.05	±0.05	±0.06	±0.09	±0.13	—
Over 0.90, up to and incl. 1.1		±0.05	±0.06	±0.08	±0.10	±0.13	—
Over 1.1, up to and incl. 1.7		±0.06	±0.08	±0.10	±0.13	±0.15	—
Over 1.7, up to and incl. 1.9		±0.06	±0.08	±0.10	±0.15	±0.20	—
Over 1.9, up to and incl. 2.4		±0.08	±0.08	±0.10	±0.15	±0.20	—
Over 2.4, up to and incl. 2.7		±0.09	±0.10	±0.13	±0.18	±0.23	—
Over 2.7, up to and incl. 3.6		±0.11	±0.11	±0.13	±0.18	±0.23	±0.25
Over 3.6, up to and incl. 4.5		±0.15	±0.15	±0.20	±0.23	±0.28	±0.30
Over 4.5, up to and incl. 5.0		±0.18	±0.18	±0.23	±0.28	±0.33	±0.38
Over 5.0, up to and incl. 6.5		±0.23	±0.23	±0.28	±0.33	±0.38	±0.43
Over 6.5, up to and incl. 8.0		±0.33	±0.33	±0.33	±0.38	±0.43	±0.51
Over 8.0, up to and incl. 11		±0.48	±0.48	±0.48	±0.48	±0.58	±0.66
Over 11, up to and incl. 16		±0.64	±0.64	±0.64	±0.64	±0.76	±0.89

Remarks 1. When the tolerance is specified either all plus or minus side, the value in the above table shall be doubled.

2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between the concerned parties.

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Table 6 (2). Thickness Tolerances for Cold Reduced Products

Unit: mm

Alloy No. Width Thickness	Tolerance											
	2014, 2014 Clad Plate, 2017, 2219, 2024, 2024 Clad Plate, 3004, 3104, 5052, 5652, 5154, 5254, 5454, 5082, 5182, 5083, 5086, 6061, 7075, 7075 Clad Plate, 7 N 01											
	Up to and incl. 450	Over 450, up to and incl. 900	Over 900, up to and incl. 1200	Over 1200, up to and incl. 1400	Over 1400, up to and incl. 1500	Over 1500, up to and incl. 1700	Over 1700, up to and incl. 1800	Over 1800, up to and incl. 2000	Over 2000, up to and incl. 2100	Over 2100, up to and incl. 2300	Over 2300, up to and incl. 2400	Over 2400, up to and incl. 2600
Up to and incl. 0.25	±0.03	±0.04	±0.06	±0.06	—	—	—	—	—	—	—	—
Over 0.25, up to and incl. 0.45	±0.04	±0.04	±0.06	±0.09	—	—	—	—	—	—	—	—
Over 0.45, up to and incl. 0.70	±0.04	±0.05	±0.06	±0.09	±0.10	±0.10	±0.10	—	—	—	—	—
Over 0.70, up to and incl. 0.90	±0.05	±0.05	±0.06	±0.10	±0.13	±0.13	±0.13	±0.15	—	—	—	—
Over 0.90, up to and incl. 1.1	±0.05	±0.06	±0.08	±0.10	±0.13	±0.13	±0.13	±0.15	—	—	—	—
Over 1.1, up to and incl. 1.7	±0.06	±0.08	±0.10	±0.13	±0.15	±0.15	±0.15	±0.18	—	—	—	—
Over 1.7, up to and incl. 1.9	±0.08	±0.08	±0.10	±0.13	±0.15	±0.15	±0.15	±0.18	—	—	—	—
Over 1.9, up to and incl. 2.4	±0.09	±0.09	±0.10	±0.13	±0.15	±0.15	±0.15	±0.18	±0.18	±0.30	—	—
Over 2.4, up to and incl. 2.7	±0.10	±0.10	±0.13	±0.13	±0.18	±0.18	±0.18	±0.20	±0.20	±0.41	—	—
Over 2.7, up to and incl. 3.2	±0.11	±0.11	±0.13	±0.13	±0.18	±0.18	±0.18	±0.20	±0.20	±0.41	±0.46	±0.51
Over 3.2, up to and incl. 3.6	±0.11	±0.11	±0.13	±0.13	±0.18	±0.25	±0.30	±0.33	±0.36	±0.41	±0.46	±0.51
Over 3.6, up to and incl. 4.5	±0.15	±0.15	±0.20	±0.20	±0.23	±0.30	±0.36	±0.38	±0.41	±0.43	±0.48	±0.58
Over 4.5, up to and incl. 5.0	±0.18	±0.18	±0.25	±0.25	±0.28	±0.36	±0.41	±0.43	±0.43	±0.43	±0.56	±0.66
Over 5.0, up to and incl. 6.5	±0.23	±0.23	±0.28	±0.28	±0.33	±0.41	±0.46	±0.46	±0.46	±0.46	±0.61	±0.71
Over 6.5, up to and incl. 8.0	±0.33	±0.33	±0.33	±0.33	±0.38	±0.46	±0.51	±0.51	±0.51	±0.51	±0.64	±0.76
Over 8.0, up to and incl. 11	±0.48	±0.48	±0.48	±0.48	±0.51	±0.51	±0.58	±0.58	±0.64	±0.64	±0.66	±0.84
Over 11, up to and incl. 16	±0.64	±0.64	±0.64	±0.64	±0.64	±0.64	±0.64	±0.76	±0.76	±0.76	±0.89	±0.89

- Remarks 1. When the tolerance is specified either all plus or minus side, the value in the above table shall be doubled.
2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between the concerned parties.

Table 6 (3). Thickness Tolerances for Hot Rolled Products<sup>(14)</sup>

Unit: mm

Alloy No. Width Thickness	Tolerance					
	1085, 1080, 1070, 1050, 1100, 1200, 1 N 00, 1 N 30, 3003, 3203, 3005, 5005, 5 N 01					
	Up to and incl. 900	Over 900, up to and incl. 1400	Over 1400, up to and incl. 1800	Over 1800, up to and incl. 2300	Over 2300, up to and incl. 2600	Over 2600, up to and incl. 3400
4 and over, up to and incl. 5	±0.25	±0.30	±0.35	±0.40	—	—
Over 5, up to and incl. 6	±0.30	±0.40	±0.45	±0.50	—	—
Over 6, up to and incl. 8	±0.45	±0.45	±0.55	±0.65	±0.75	±0.85
Over 8, up to and incl. 11	±0.55	±0.55	±0.65	±0.75	±0.85	±0.95
Over 11, up to and incl. 16	±0.65	±0.65	±0.75	±0.85	±0.95	±1.0
Over 16, up to and incl. 22	±0.80	±0.80	±0.80	±0.90	±1.1	±1.1
Over 22, up to and incl. 29	±0.90	±0.90	±0.90	±1.1	±1.4	±1.4
Over 29, up to and incl. 35	±1.0	±1.0	±1.0	±1.3	±1.7	±1.7
Over 35, up to and incl. 40	±1.1	±1.1	±1.1	±1.5	±1.9	±1.9
Over 40, up to and incl. 50	±1.3	±1.3	±1.3	±1.8	±2.2	±2.2
Over 50, up to and incl. 55	±1.5	±1.5	±1.5	±2.0	±2.5	±2.5
Over 55, up to and incl. 70	±1.9	±1.9	±1.9	±2.5	±3.2	±3.2
Over 70, up to and incl. 75	±2.3	±2.3	±2.3	±3.0	±3.8	±3.8
Over 75, up to and incl. 100	±2.8	±2.8	±2.8	±3.6	±4.1	±4.1

Note <sup>(14)</sup> This table shall be applied to the products of temper grade H 112 and that of as hot rolled condition.

- Remarks 1. When the tolerance is specified either all plus or minus side, the value in the above table shall be doubled.
2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between the concerned parties.

Table 6 (4). Thickness Tolerances for Hot Rolled Products<sup>(1 4)</sup>

Unit: mm

Alloy No. Width Thickness	Tolerance					
	2014, 2017, 2219, 2024, 3004, 3104, 5052, 5652, 5154, 5254, 5454, 5083, 5086, 6061, 7075, 7 N 01					
	Up to and incl. 900	Over 900, up to and incl. 1400	Over 1400, up to and incl. 1800	Over 1800, up to and incl. 2300	Over 2300, up to and incl. 2600	Over 2600, up to and incl. 3400
4 and over, up to and incl. 5	±0.30	±0.35	±0.50	±0.60	—	—
Over 5, up to and incl. 6	±0.40	±0.45	±0.55	±0.65	—	—
Over 6, up to and incl. 8	±0.50	±0.50	±0.60	±0.70	±0.80	±0.90
Over 8, up to and incl. 11	±0.60	±0.60	±0.70	±0.80	±0.90	±1.0
Over 11, up to and incl. 16	±0.70	±0.70	±0.80	±0.90	±1.0	±1.1
Over 16, up to and incl. 22	±0.80	±0.80	±0.80	±0.90	±1.1	±1.1
Over 22, up to and incl. 29	±0.90	±0.90	±0.90	±1.1	±1.4	±1.4
Over 29, up to and incl. 35	±1.0	±1.0	±1.0	±1.3	±1.7	±1.7
Over 35, up to and incl. 40	±1.1	±1.1	±1.1	±1.5	±1.9	±1.9
Over 40, up to and incl. 50	±1.3	±1.3	±1.3	±1.8	±2.2	±2.2
Over 50, up to and incl. 55	±1.5	±1.5	±1.5	±2.0	±2.5	±2.5
Over 55, up to and incl. 70	±1.9	±1.9	±1.9	±2.5	±3.2	±3.2
Over 70, up to and incl. 75	±2.3	±2.3	±2.3	±3.0	±3.8	±3.8
Over 75, up to and incl. 100	±2.8	±2.8	±2.8	±3.6	±4.1	±4.1

Remarks 1. When the tolerance is specified either all plus or minus side, the above values shall be doubled.

2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between parties concerned.

5.4 Width Tolerances for Plate, Clad Plate and Coiled Sheet The width tolerances for the plate, clad plate and coiled sheet shall be as specified in Tables 7 (1) to (3) inclusive.

Table 7 (1). Width Tolerances for Plate and Clad Plate  
(Sheared Edge)

Unit: mm

Thickness \ Width	Tolerance			
	Up to and incl. 150	Over 150, up to and incl. 600	Over 600, up to and incl. 1500	Over 1500, up to and incl. 2450
Up to and incl. 3.2	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$
Over 3.2, up to and incl. 6.5	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 4$
Over 6.5, up to and incl. 15	+7 0	+8 0	+10 0	+10 0

Remarks 1. When the width tolerance for the product with a thickness up to and including 6.5 mm is specified either all plus or minus side, the value in the above table shall be doubled.

2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between the concerned parties.

Table 7 (2). Width Tolerances for Plate and Clad Plate  
(Sawed Edge)

Unit: mm

Thickness \ Width	Tolerance <sup>(15)</sup>			
	Up to and incl. 750	Over 750, up to and incl. 1500	Over 1500, up to and incl. 3000	Over 3000, up to and incl. 3400
2.0 and over, up to and incl. 6.5	$\pm 3$	$\pm 3$	$\pm 5$	$\pm 7$
Over 6.5, up to and incl. 100	+7 0	+8 0	+10 0	+13 0

Note <sup>(15)</sup> Width tolerance shall be applied to the product at sawing temperature. The allowable maximum deviation shall be 0.23 mm per 1000 mm in width by 10°C difference.

Remarks 1. When the width tolerance for the product with a thickness up to and including 6.5 mm is specified either all plus or minus side, the value in the above table shall be doubled.

2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between the concerned parties.



Table 7 (3). Width Tolerances for Coiled Sheet

Unit: mm

Thickness \ Width	Tolerance					
	Up to and incl. 150	Over 150, up to and incl. 300	Over 300, up to and incl. 600	Over 600, up to and incl. 1200	Over 1200, up to and incl. 1500	Over 1500, up to and incl. 2000
Up to and incl. 3.2	$\pm 0.3$	$\pm 0.4$	$\pm 0.8$	$\pm 1.2$	$\pm 1.6$	$\pm 3.2$
Over 3.2, up to and incl. 4.5	$\pm 0.3$	$\pm 0.5$	$\pm 0.8$	$\pm 1.6$	$\pm 2.4$	—

- Remarks 1. When the tolerance is specified either all plus or minus side, the value in the above table shall be doubled.
2. Tolerances for the products exceeding the range of specified thickness and width shall be agreed upon between the concerned parties.

5.5 Tolerances on Diameter for Circle The tolerances on diameter for the circle shall be as specified in Table 8.

Table 8. Tolerances on Diameter of Circle

Unit: mm

Thickness \ Diameter	Tolerance		
	Up to and incl. 450	Over 450, up to and incl. 900	Over 900, up to and incl. 2000
Up to and incl. 3.5	$\pm 1.0$	$\pm 1.2$	$\pm 1.6$

- Remarks 1. When the tolerance is specified either all plus or minus side, the value in the above table shall be doubled.
2. Tolerances for the products exceeding the range of specified thickness and diameter shall be agreed upon between the concerned parties.

5.6 Length Tolerances for Plate and Clad Plate The length tolerances for the plate and clad plate shall be as specified in Tables 9 (1) and (2).

Table 9 (1). Length Tolerances for Plate and Clad Plate  
(Sheared Edge)

Unit: mm

Thickness \ Length	Tolerance <sup>(16)</sup>					
	Up to and incl. 750	Over 750, up to and incl. 1500	Over 1500, up to and incl. 3000	Over 3000, up to and incl. 6000	Over 6000, up to and incl. 9000	Over 9000, up to and incl. 10000
Up to and incl. 3.2	± 2	± 3	± 3	± 4	± 5	± 6
Over 3.2, up to and incl. 6.5	± 3	± 3	± 3	± 4	± 6	± 7
Over 6.5, up to and incl. 15	+ 7 0	+10 0	+11 0	+13 0	+14 0	+16 0

Note <sup>(16)</sup> Length tolerance shall be applied to the product at cutting temperature. The allowable maximum deviation shall be 0.23 mm per 1000 mm in length by temperature difference of 10°C.

- Remarks 1. When the length tolerance for the product with a thickness up to and including 6.5 mm is specified either all plus or minus side, the value in the above table shall be doubled.
2. Tolerances for the products exceeding the range of specified thickness and length shall be agreed upon between the concerned parties.

Table 9 (2). Length Tolerances for Plate and Clad Plate (Sawed Edge)

Unit: mm

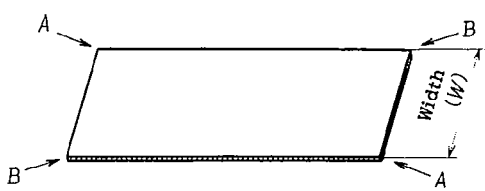
Thickness \ Length	Tolerance <sup>(16)</sup>					
	Up to and incl. 750	Over 750, up to and incl. 1500	Over 1500, up to and incl. 3000	Over 3000, up to and incl. 6000	Over 6000, up to and incl. 9000	Over 9000, up to and incl. 10000
2.0 and over, up to and incl. 6.5	± 3	± 3	± 5	± 7	± 7	± 8
Over 6.5, up to and incl. 100	+ 7 0	+ 8 0	+10 0	+13 0	+14 0	+16 0

- Remarks 1. When the length tolerance for the product with a thickness up to and including 6.5 mm is specified either all plus or minus side, the value in the above table shall be doubled.
2. Tolerances for the products exceeding the range of specified thickness and length shall be agreed upon between the concerned parties.

**5.7 Maximum Value on Out-of-Square for Plate and Clad Plate** The maximum value on out-of-square (the difference between AA and BB given in the Figure of Table 10) for the plate and clad plate shall be as specified in Table 10. The maximum value given in this table, however, shall be applied only when specified by the purchaser.

Table 10. Maximum Value on Out-of-Square for Plate and Clad Plate

Unit: mm

Length \ Width	Maximum value	
		
	Up to and incl. 900	Over 900
Up to and incl. 3700	$2.4 \times \frac{W^{(17)}}{300}$	$2.0 \times \frac{W^{(17)}}{300}$
Over 3700	$3.6 \times \frac{W^{(17)}}{300}$	$2.8 \times \frac{W^{(17)}}{300}$

Note (<sup>17</sup>) In case the specified width is other than those of exact multiples of 300 mm, the maximum value shall be determined by using the next largest exact multiple.

For example, when specified width is 1400 mm and specified length 1800 mm, the tolerance thereon shall be  $2.0 \times 5 \text{ (multiple)} = 10 \text{ mm}$ .

**5.8 Maximum Value on Camber for Plate, Clad Plate and Coiled Sheet** The maximum value on camber for the plate, clad plate and coiled sheet shall be as specified in Tables 11 (1) and (2). The maximum values given in these tables, however, shall be applied only when specified by the purchaser.