Aerospace series

Plates
Aluminium alloy 7475
Close-tolerance flatness
6,0 mm < a ≤ 100 mm

Dimensions

Published and distributed by :
AIRBUS S.A.S.
ENGINEERING DIRECTORATE
31707 BLAGNAC Cedex
FRANCE

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1 Scope

This standard specifies the dimensions, tolerances and mass of 7475 plates with close tolerance flatness, thickness range $6 < a \leq 100$ mm for aerospace applications.

2 Normative references

This Airbus standard incorporates by dated or undated reference provisions from other publications. All normative references cited at the appropriate places in the text are listed hereafter. For dated references, subsequent amendments to or revisions of any these publications apply to this Airbus standard only when incorporated in it by amendment of revision. For undated references, the latest issue of the publication referred to shall be applied.

AIMS 03-02-000	Technical specification – Aluminium and aluminium alloy wrought products – Plate
AIMS 03-02-009	Material Specification – Aluminium alloy (7475) solution treated, controlled stretched and artificially aged (T7351), Plate, 6,0 mm < a ≤ 100,0 mm, close tolerance flatness

3 Form

See Figure 1.

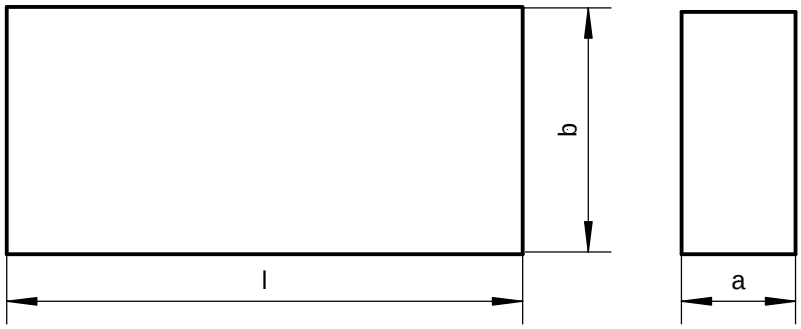


Figure 1:

4 Recommended dimensions

4.1 Dimensions and mass

See Table 1.

Table 1:

Size code	Nominal thickness a [1] mm	width x length b x l [1] mm x mm	Mass per unit area [2] kg/m^2
008	8	1200 x 2200	22,4
010	10		28,0
012	12		33,6
014	14		39,0
016	16		44,5
018	18		50,4
020	20		56,0
025	25		70,0
027	27		76,0
030	30		84,0
032	32		89,5
035	35		98,0
036	36	1000 x 2200	100,0
037	37		104,0
038	38		106,0
040	40		112,0
043	43		120,0
045	45		126,0
047	47		132,0
050	50		140,0
055	55		154,0
060	60		168,0
063	63		176,0
065	65		182,0
070	70		196,0
075	75		210,0
080	80		224,0
085	85		238,0
090	90		252,0
095	95		266,0
100	100		280,0

1) Other thickness, width and length on request
2) For information, calculated with a density of 2,8 kg/dm^3

5 Tolerances

5.1 Dimensional tolerances

5.1.1 Thickness

See Table 2.

Table 2:

Dimensions in mm

Thickness a	Thickness tolerances depending on plate thickness a and plate width b				
	b ≤ 1250	1250 < b ≤ 1600	1600 < b ≤ 2000	2000 < b ≤ 2500	2500 < b ≤ 3000
6 < a ≤ 8	± 0,30	± 0,35	± 0,40	± 0,40	± 0,50
8 < a ≤ 10	± 0,35	± 0,40	± 0,40	± 0,45	± 0,55
10 < a ≤ 12	± 0,40	± 0,45	± 0,50	± 0,55	± 0,60
12 < a ≤ 16	± 0,50	± 0,55	± 0,60	± 0,65	± 0,70
16 < a ≤ 20	± 0,60	± 0,65	± 0,70	± 0,75	± 0,80
20 < a ≤ 25	± 0,70	± 0,75	± 0,75	± 0,85	± 0,85
25 < a ≤ 30	± 0,75	± 1,0	± 1,2	± 1,2	± 1,2
30 < a ≤ 35	± 0,85	± 1,1	± 1,3	± 1,3	± 1,3
35 < a ≤ 40	± 1,0	± 1,1	± 1,3	± 1,4	± 1,4
40 < a ≤ 50	± 1,2	± 1,3	± 1,5	± 1,7	± 1,7
50 < a ≤ 60	± 1,5	± 1,5	± 1,7	± 1,9	± 1,9
60 < a ≤ 70	± 1,7	± 1,8	± 2,0	± 2,2	± 2,2
70 < a ≤ 80	± 2,0	± 2,1	± 2,4	± 2,5	± 2,5
80 < a ≤ 100	± 2,2	± 2,2	± 2,7	± 2,7	± 2,6

5.1.2 Width

See Table 3.

Table 3:

Dimensions in mm

Width b	Width tolerances
All	+10 0

5.1.3 Length

See Table 4.

Table 4:

Dimensions in mm

Length l	Length tolerances
l ≤ 5000	+10 0
l > 5000	+0,002 x l 0

5.2 Geometric tolerances

5.2.1 Squareness

5.2.1.1 Method of measurement and symbols

See AIMS 03-02-000.

5.2.1.2 Tolerances

See Table 5.

Table 5:

Dimensions in mm

Length l	Maximum difference in the lengths of diagonals for all plate widths and thickness
$l \leq 2000$	8,0
$2000 < l \leq 5000$	10,0
$l > 5000$	0,002 x l

5.2.2 Lateral curvature

5.2.2.1 Method of measurement and symbols

See AIMS 03-02-000.

5.2.2.2 Tolerances

See Table 6. The lateral curvature may be concave or convex.

Table 6:

Dimensions in mm

Thickness a	Lateral curvature F on	
	plate width b	plate length l
$6 < a \leq 100$	$\leq$ 0,002 x b	$\leq$ 0,002 x l

5.2.3 Flatness

5.2.3.1 Method of measurement and symbols

See AIMS 03-02-000

5.2.3.2 Tolerances

See Table 7.

Table 7:

Dimensions in mm

Plate thickness a	Flatness deviation f_{max}. referred to plate width b		plate length l		chord	
	width	f_{max}	length	f_{max}	chord	f_{max}
$6 < a \leq 30$	$b \leq 500$ $b > 500$	1,5 $0{,}003 \times min_1$ [1]	$l \leq 750$ $750 < l \leq 1000$ $1000 < l \leq 1300$ $l > 1300$	1,5 $0{,}002 \times l$ 2,0 $0{,}0015 \times min_2$ [2]	$w \geq 300$	$0{,}003 \times w$ [3]
$30 < a \leq 100$	$b \leq 500$ $b > 500$	1,0 $0{,}002 \times min_1$ [1]	$l \leq 500$ $500 < l \leq 1000$ $1000 < l \leq 2000$ $l > 2000$	1,0 $0{,}002 \times l$ 2,0 $0{,}001 \times min_2$ [2]		

[1] min_1 is either plate width (b) or straight-edge length, whatever is the smaller value
[2] min_2 is either plate length (l) or straight-edge length, whatever is the smaller value
[3] The maximum acceptable deviation for total length and width shall not be exceeded.

6 Material

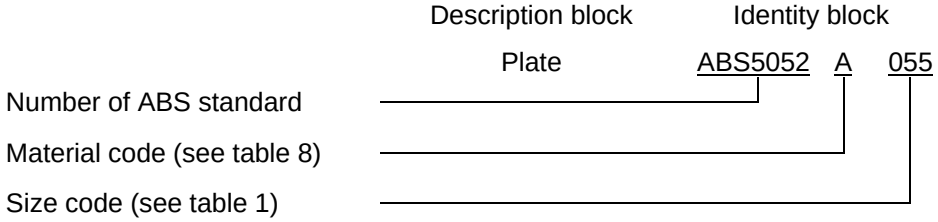
See Table 8.

Table 8:

Plate thickness range mm	Material					
	delivered			use		
	AIMS spec. no.	condition of treatment	code	AIMS spec. no.	condition of treatment	code
$6 < a \leq 100$	03-02-009	T7351	A	03-02-009	T7351	A

7 Designation

Material according to this standard shall be designated following the philosophy of the example below:



8 Technical specification

See AIMS03-02-000

RECORD OF REVISIONS

Issue	Clause modified	Description of modification
1 06/00	-	New standard
2 05/11	General 2 5.2.1.1, 5.2.2.1 5.2.3.1 5.2.1.2 Table 7 7	Editorial changes according to new template, table column headings reworded, EN 3848 and footnote 1 deleted, Methods of squareness, lateral curvature and flatness measurement refer now to AIMS 03-02-000 (before EN 3848), Squareness tolerance: maximum difference of diagonal lengths has only one limit, Limits revised based on flatness measurement method defined in AIMS 03-02-000 and lower flatness deviation limits introduced, footnotes added, Wording revised;