

ALUMINIUM AND ALUMINIUM ALLOY

GOST 21631-76

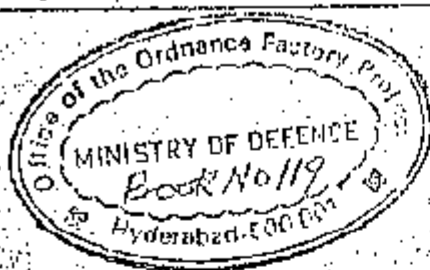
SHEETS.

SUPERSEDES *

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OF 42



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* Supersedes
GOST 12592-67, except points
5.3-5.9; GOST 19722-68,
except points 5.3-5.11.

This standard covers sheets from aluminium of grades A7, A6, A5, A0, AD0, AD1 and from aluminium alloys of grades MM, D12, AMts, AMts5, AMe2, AMe3, AMe5, AMe6, AV, D1, D16, V95, V95-2 and VD1.

1. CLASSIFICATION.

1.1. Sheets are classified as follows:

a) as per method of manufacture:

uncladded from alloys of grades MM, D12, AMts, AMts5,

AMe2, AMe3, AMe5, AMe6, AV and from aluminium of grades A7, A6, A5, A0, AD0, AD1 - denoted by alloy grade without any additional symbols;

cladded from alloys of grades AMe6 and D16 with technological cladding - B (AMe6B, D16B);

cladded from alloys of grades D1, D16, V95, V95-2, VD1 with normal cladding - A (D1A, D16A, V95A, V95-2A, VD1A);

cladded from alloys of grades AMe6 and D16 with thick cladding - U (AMe6U, D16U).

FOR REFERENCE ONLY

APPROVED	<i>[Signature]</i>	12-1-80	MATL. SPECN.		
ENGINEER / CH. INCHARGE	<i>[Signature]</i>	1	HEAT TREAT		
CHECKED	<i>[Signature]</i>	4.6.80	FINISH		
DRAWN				ISS. NO.	ISSD. BY
				APPRD.	

Note: By mutual agreement of both parties it is allowed to fabricate uncladded sheets from al. alloy of grade D16, in this case the mechanical properties, surface quality and rolling should correspond to the cladded sheets from alloy of grade D16 with tech. cladding;

b) as per material condition: without heat-treatment (no additional symbol is assigned) - A7, A6, A5, A0, A00, AD1, AM_{TS}, AM_{TS}S, AM₂, AM₃, AM₅, AM₆, AM_{6B}, AV, D16A, V95A, V95-2 and VD1;

Note: Sheets fabricated without heat treatment, may be subjected to annealing;

annealed (M) - A7M, A6M, A5M, A0M, AD1M, D12M, AM_{TS}M, AM_{TS}SM, AM₂M, AM₃M, AM₅M, AM₆M, AM_{6B}M, AM₆UM, AVM, D16M, D16SM, D16AM, D16UM, V95AM, V95-2AM and VD1AM;

Note: Annealed sheets may be supplied without heat treatment, if they meet the requirements covering annealed sheets as regard: mechanical properties, surface quality and rolling;

semi-cold worked ($\frac{1}{2}$ T) - A7 $\frac{1}{2}$ N, A6 $\frac{1}{2}$ N, A5 $\frac{1}{2}$ N, A0 $\frac{1}{2}$ N, A00 $\frac{1}{2}$ N, AD1 $\frac{1}{2}$ N, AM_{TS} $\frac{1}{2}$ N, AM_{TS}S $\frac{1}{2}$ N, D12 $\frac{1}{2}$ N, AM₂ $\frac{1}{2}$ N, AM₃ $\frac{1}{2}$ N;

cold worked (N) - A7N, A6N, A5N, A0N, A00N, AD1N, AM_{TS}N, AM_{TS}SN, MN, AM₂N and VD1/N;

hardened and naturally aged (T) - AVT, D1AT, D16BT, D16AT, D16UT, V95-2AT and VD1AT;

hardened and artificially aged (T1) - AVT1 and V95AT1;
cold worked after hardening and natural ageing (TN) - D16BTN,
D16ATN;

c) as per quality of surface finish into groups:

superfine finish - I (A7, A6, A5, A0, ADO, AD1, AM_{TS}, AM_{S2});

fine finish - II (A7, A6, A5, A0, ADO, AD1, AM_{TS}, AM_{SS}, MM,
D12, AM_{S2}, AM_{S3}, AM_{S5}, AM_{S6}, AM_{S6B}, AM_{S6U}, AV, D1A, D16B, D16A,
D16U, V95A);

normal finish (without additional symbol) - A7, A6, A5, A0,
ADO, AD1, AM_{TS}, MM, D12, AM_{S2}, AM_{S3}, AM_{S5}, AM_{S6}, AM_{S6B}, AM_{S6U},
AV, D1A, D16B, D16A, D16U, V95A, V95-2A and VD1A.

Note: Sheets of superfine finish group (I) are fabricated
with thickness upto 4.0 mm;

d) as per manufacturing accuracy on thickness:

for high accuracy - P;

for normal accuracy - without additional symbol.

2. ASSORTMENT.

2.1. Thickness of sheets, tolerances depending on thickness
and width of sheets and their manufacturing accuracy should
correspond to the values given in table 1.

Notes:

1. With customer's approval, tolerances of non-heat
treated sheets of thickness 5 mm and above from
alloys of grades AM_{S3}, AM_{S5} and AM_{S6} are established
as $\pm 5\%$ of nominal thickness.

2. In case of manufacture of sheets with intermediate thicknesses the tolerances on thickness of sheet for these dimensions is taken as for the nearest lesser dimension.

3. Theoretical weight of 1m^2 sheet in kg. is given in reference appendix 2.

2.2. Sheets are manufactured with dimensions given in table 2, depending on alloy grade, cladding and material condition.

Table 1.

mm

Tolerances on thickness with sheet width equal to

sheet thickness	600		800, 900		1000		1200		1400, 1425, 1600		1800, 2000	
	High accuracy	Normal accuracy	High accuracy	Normal accuracy	High accuracy	Normal accuracy	High accuracy	Normal accuracy	High accuracy	Normal accuracy	High accuracy	Normal accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13
0.3	-0.04	-0.05	-0.06	-0.08	-0.07	-0.10						
0.4	-0.04	-0.05	-0.06	-0.08	-0.08	-0.10	-0.10	-0.12				
0.5	-0.04	-0.05	-0.06	-0.08	-0.08	-0.10	-0.10	-0.12	-0.10	-0.12		
0.6	-0.05	-0.06	-0.08	-0.10	-0.10	-0.12	-0.10	-0.12	-0.11	-0.13		
0.7	-0.05	-0.06	-0.08	-0.10	-0.10	-0.12	-0.10	-0.12	-0.11	-0.13		
0.8	-0.06	-0.08	-0.10	-0.12	-0.10	-0.12	-0.12	-0.13	-0.12	-0.14	-0.14	-0.16
0.9	-0.06	-0.08	-0.10	-0.12	-0.10	-0.12	-0.12	-0.13	-0.12	-0.14	-0.14	-0.16
1.0	-0.08	-0.10	-0.12	-0.15	-0.12	-0.13	-0.14	-0.16	-0.15	-0.17	-0.16	-0.18
1.2	-0.08	-0.10	-0.12	-0.15	-0.12	-0.13	-0.14	-0.16	-0.15	-0.17	-0.18	-0.20
1.5	-0.10	-0.13	-0.14	-0.20	-0.14	-0.20	-0.18	-0.22	-0.20	-0.25	-0.24	-0.26
1.6	-0.10	-0.13	-0.14	-0.20	-0.14	-0.20	-0.18	-0.22	-0.22	-0.25	-0.24	-0.26
1.8	-0.10	-0.13	-0.16	-0.20	-0.16	-0.20	-0.20	-0.22	-0.22	-0.25	-0.24	-0.26
1.9	-0.10	-0.13	-0.16	-0.20	-0.16	-0.20	-0.20	-0.22	-0.22	-0.25	-0.24	-0.26
2.0	-0.10	-0.13	-0.16	-0.20	-0.16	-0.20	-0.20	-0.22	-0.24	-0.26	-0.25	-0.27
2.5	-0.12	-0.20	-0.18	-0.25	-0.18	-0.25	-0.22	-0.28	-0.26	-0.29	-0.28	-0.30

Contd.

mm.

1	2	3	4	5	6	7	8	9	10	11	12	13
3.0	-0.14	-0.23	-0.20	-0.30	-0.20	-0.30	-0.26	-0.30	-0.26	-0.34	-0.33	-0.35
3.5	-0.16	-0.25	-0.22	-0.30	-0.22	-0.30	-0.28	-0.32	-0.30	-0.35	-0.34	-0.35
4.0	-0.18	-0.25	-0.24	-0.30	-0.24	-0.30	-0.32	-0.35	-0.34	-0.36	-0.35	-0.37
4.5	-0.20	-0.25	-0.26	-0.30	-0.26	-0.30	-0.34	-0.35	-0.34	-0.36	-0.35	-0.37
5.0	-0.24	-0.30	-0.30	-0.35	-0.30	-0.35	-0.34	-0.35	-0.35	-0.37	-0.36	-0.38
5.5	-0.24	-0.30	-0.30	-0.35	-0.32	-0.35	-0.34	-0.36	-0.35	-0.37	-0.36	-0.38
6.0	-0.28	-0.30	-0.35	-0.40	-0.38	-0.40	-0.38	-0.41	-0.40	-0.42	-0.41	-0.43
6.5	-0.28	-0.30	-0.35	-0.40	-0.38	-0.40	-0.38	-0.41	-0.40	-0.42	-0.41	-0.43
7.0	-0.28	-0.30	-0.35	-0.40	-0.38	-0.40	-0.40	-0.42	-0.41	-0.43	-0.42	-0.44
7.5	-0.28	-0.30	-0.35	-0.40	-0.38	-0.40	-0.40	-0.42	-0.41	-0.43	-0.42	-0.44
8.0	-0.33	-0.35	-0.40	-0.45	-0.42	-0.45	-0.44	-0.46	-0.45	-0.47	-0.46	-0.48
8.5	-0.33	-0.35	-0.40	-0.45	-0.42	-0.45	-0.44	-0.46	-0.45	-0.47	-0.46	-0.48
9.0	-0.33	-0.35	-0.40	-0.45	-0.42	-0.45	-0.45	-0.47	-0.46	-0.48	-0.47	-0.49
9.5	-0.33	-0.35	-0.40	-0.45	-0.42	-0.45	-0.45	-0.47	-0.46	-0.48	-0.47	-0.49
10.0	-0.38	-0.40	-0.45	-0.50	-0.48	-0.50	-0.48	-0.50	-0.48	-0.50	-0.48	-0.50
10.5	-0.38	-0.40	-0.45	-0.50	-0.48	-0.50	-0.48	-0.50	-0.48	-0.50	-0.48	-0.50

Table 2.

mm

Material condition of sheets	Aluminium and aluminium alloy grade and cladding	Sheet thickness	Sheet width	Sheet length
1	2	3	4	5
Without heat-treatment	A7, A6, A5, A0		600, 800, 900, 1000	2000
	AD0, AD1		600, 800, 900	2000
	AD0, AD1, AMs, AMsS, AMs2, AMs3, AMs5, AMs6, AMs6B, AV, AD1	From 5.0 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000
	DL6A, V95-2A, V01A			
	V95A		1000, 1200, 1425, 1500, 2000	From 2000 to 7000
Annealed	A7, A6, A5, A0, AD0, AD1	From 0.3 to 10.5	600, 800, 900, 1000	2000
	AD0, AD1, AMs, AMsS, AV, AMs2	From 0.5 to 4.0	1000, 1200, 1400, 1500, 1600	From 2000 to 4000
		Above 4.0 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000
	AMs3, AMs5, AMs6, AMs6B	From 0.5 to 0.7	1000, 1200, 1400, 1500, 1600	From 2000 to 4000
		Above 0.7 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000

Contd. . / -

1	2	3	4	5
Annealed	AM60U	From 0.5 to 0.7	1000, 1200, 1400, 1500, 1600	From 2000
		Above 0.7 to 5.5	1000, 1500, 1400, 1800 1600, 2000 1200	to 7000
	D12	From 0.5 to 4.0	1200, 1500	From 3000 to 4000
	D1A, D16B, D16A	From 0.5 to 0.7	1000, 1200, 1400, 1500, 1600	From 2000 to 4000
		Above 0.7 to 4.0	1000, 1200, 1400, 1500, 1600, 1800,	From 2000 to 7000
		Above 4.0 to 10.5	2000	From 2000 to 7000
	D16U	From 0.5 to 0.7	1200, 1500	From 2000 to 4000
		Above 0.7 to 4.0		From 2000 to 7000
	V95A	From 0.5 to 0.7	1000, 1200, 1425, 1500	From 2000 to 4000
		Above 0.7 to 4.0	1000, 1200, 1425, 1500, 2000	From 2000 to 7000
		Above 4.0 to 10.5		From 2000 to 7000

contd. . .

1	2	3	4	5
Annealed	V95-2A	From 1.0 to 10.5	1200, 1400, 1500	From 2000 to 7000
	VD1A	From 0.8 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000
Semi cold- worked.	A7, A6, A5, A0, AD0, AD1.	From 0.8 to 4.5	1000, 1200, 1400, 1500.	From 2000 to 4000
		From 0.5 to 3.7	1000, 1200, 1400, 1500, 1600.	From 2000 to 7000
	AMrS, AMrES.	Above 0.7 to 4.0	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000
	AMe2, AMe3	Above 4.0 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 4000
	DL2	From 0.5 to 4.0	1200, 1500	From 3000 to 4000
Cold- worked	A7, A6, A5, A0, AD0, AD1.	From 0.3 to 10.5	600, 800 900, 1000	2000
	AD0, AD1	From 0.5 to 4.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 4000
		Above 4.5 to 10.5		From 2000 to 7000
	MM	From 1.0 to 4.5	1000, 1200, 1400, 1500.	From 2000 to 4000

1	2	3	4	5
Cold-worked.	AMgS, AMgS, AMgZ	From 0.5 to 0.7	1000, 1200, 1400, 1500, 1600, 1800, 2000.	From 2000 to 7000
		Above 0.7 to 4.0	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000
		Above 4.0 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 4000
	VD1A	From 0.8 to 10.5	1000, 1200, 1500.	From 2000 to 7000
Hardened and natura- lly aged.	AV, D1A, D16B, D16A.	From 0.5 to 0.7	1000, 1200, 1400, 1500, 1600	From 2000 to 5000
		Above 0.7 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7200
	D16U	From 0.5 to 4.0	1200, 1500	From 2000 to 7200
	V95-2A, VD1A	From 0.8 to 13.5	1000, 1200, 1500, 1600, 1800, 2000	From 2000 to 7000
Hardened and artifi- cially aged.	AV	From 0.5 to 0.7	1000, 1200, 1400, 1500, 1600	From 2000 to 5000
		Above 0.7 to 10.5	1000, 1200, 1400, 1500, 1600, 1800, 2000	From 2000 to 7000

	2	3	4	5
Hardened and artificially aged.	V95A	From 0.1 to 0.7	1000, 1200, 1425, 1500	From 2000 to 4000
		Above 0.7 to 4.0	1000, 1200, 1425, 1500, 2000	From 2000 to 7200
		Above 4.0 to 20.0	1000, 1200, 1425, 1500, 2000	From 2000 to 7200
Cold-worked after hardening and natural ageing.	D16B and D16A	From 1.5 to 7.5	1000, 1200, 1400, 1500	From 2000 to 7200

Note: With mutual approval of manufacturer and customer

it is allowed to fabricate sheets of dimensions

not given in table 2

2.3. Tolerances on width of sheets depending on their thickness should correspond to the values, given in table 3

Table 3

Sheet thickness	Sheet width	Tolerances on width
Upto 5.0	Upto 1000	±0.0
	Above 1000	±10.0
Above 5.0	Upto 1000	±12.0
	Above 1000	±15.0

2.4. Sheets are supplied with uniform or short uniform length within the limits of length values given in table 2 with interval of 500 mm.

Tolerances on length of sheets, depending on their thickness, should correspond to the values given in table 4.

Table 4.

Sheet thickness	Sheet length	Tolerances on length
From 0.3 to 3.5	From 2000 to 7200	+25
Above 3.5 to 10.5		+30

Note: It is allowed to supply sheets with length above 4000mm without trimming of edges having higher (in comparison to nominal values) values of width: if thickness is upto 4.0 mm - not more than 25 mm, if thickness is above 4.5 mm - 40 mm.

2.5. 10% sheets of a batch having negative tolerances from nominal dimensions as regards width and length not exceeding 10% is allowed. On customer's request, indicated in the order, supply of sheets with negative tolerances from nominal dimensions may not be permitted.

2.6. In case of absence of directions as regards manufacturing accuracy and group of finish, sheets are fabricated with normal accuracy and normal finish.

Method of calling:

Sheet from alloy of grade AD1, without heat treatment, with normal surface finish, with normal manufacturing accuracy, with thickness 5 mm, width 1000 mm, length 2000 mm:

Sheet AD1-5x1000x2000 GOST 21631-76;

-do-, annealed, thickness 5 mm, width 1000 mm, length 2000

Sheet AD1M - 5x1000x2000 GOST 21631-76;

-do-, semicold - worked, high surface finish, normal manufacturing accuracy;

sheet AD1 $\frac{1}{2}$ N-II- 5x1000x2000 GOST 21631-76;

-do-, cold worked with high surface finish, high manufacturing accuracy;

Sheet AD1N - II - P-5x1000x2000 GOST 21631-76.

3. TECHNICAL REQUIREMENTS

3.1. Chemical composition of sheets from aluminium of grades A7, A6, A5, A0 should correspond to the requirements of GOST 11069-74, and the chemical composition of sheets from aluminium of grades AD0, AD1 and aluminium alloys should correspond to the requirements of GOST 4784-74, chemical composition of sheets from aluminium alloys of grades V9542 and VD1 should correspond to the requirements of GOST 1131-67.

With mutual approval of manufacturer and customer, it is allowed to fabricate sheets from aluminium of other grades having superfine and tech. finish as per GOST 11069-74.

3.2. For cladding of sheets, depending on the alloy grade, aluminium having chemical composition given in table 5 is used.

Table 5.

Chemical composition of cladding material, in %

Admixtures, maximum

Grade of alloy to be cladded.	Alloy elements.		Iron	Silicon	Copper	Manganese	Zinc	Titanium	Magnesium	Other admixtures		Sum total of permissible admixtures.
	Aluminum	Zinc								Technically separately.	Sum total	
DLA P16A, P16B, P16U, AM63B, AM6GU	Minimum 99.30		0.30	0.30	0.02	0.025	0.1	0.15	0.05	0.02	-	0.70
V95A	Basic component	0.9-1.3	0.3	0.3	-	0.025	-	0.15	-	0.05	0.1	

3.3. Thickness of cladding layer on each side of sheet, depending on sheet thickness, should correspond to the values given in table 6.

Table 6.

Sheet thickness, in mm.	Thickness of cladding layer on each side of sheet from nominal sheet thickness, in %, when cladde as follows:		
	Technological	Normal	Thick.
	Maximum	Minimum	
From 0.5 to 1.9	1.5	4.0	8.0
Above 1.9 to 4.0	1.5	2.0	4.0
Above 4.0 to 10.5	1.5	2.0	

Note: Thickness of thick cladding for sheets from alloy AlMg6 should, on one side of the sheet, constitute not less than 4.0% from nominal sheet thickness.

3.4. Mechanical properties of specimens, cut from sheets in supply condition in the direction across rolling, should correspond to the requirements given in table 7.

Table 7.

Aluminium and aluminium alloy grade and cladding.	Material condition of sheets.	Designation of alloy and material condition.	Condition of test specimens.	Sheet thickness in mm.	Tensile properties.		
					Tensile strength σ_u in $\frac{kg}{mm^2}$.	Yield point $\sigma_{0.2}$ in $\frac{kg}{mm^2}$.	Percentage elongation when $l = 11.3\sqrt{F}$.
					Minimum		
1	2	3	4	5	6	7	8
A7, A6, A5, A0, A00, AD1.	Annealed	A7M, A6M, A5M, A0M, A00M, AD1M.	Annealed	From 0.3 to 0.5 Above 0.5 to 0.9 Above 0.9 to 10.5	6.0	-	20.0
					6.0	-	25.0
					6.0	-	28.0
	Semi-cold worked.	A7 $\frac{1}{2}$ N, A6 $\frac{1}{2}$ N, A5 $\frac{1}{2}$ N, A0 $\frac{1}{2}$ N, A00 $\frac{1}{2}$ N, AD1 $\frac{1}{2}$ N.	Semi-cold worked.	From 0.8 to 3.5	10.0	-	6.0
					15.0	-	3.0
					15.0	-	4.0
	Cold-worked	A7N, A6N, A5N, A0N, A00N, AD1N.	Cold-worked	From 0.3 to 0.8 Above 0.8 to 3.5 Above 3.5 to 10.5	13.0	-	5.0
					13.0	-	3.0
					13.0	-	4.0

Contd. Table 7

1	2	3	4	5	6	7	8
A7, A6, A5, AO, ADO, AD1	Without heat- treatment.	A7, A6, A5, AO, ADO, AD1	Without heat- treatment.	From 5.0 to 10.5	7.0	-	15.0
	Annealed	AMTS, AMTSN	Annealed	From 0.5 to 0.7 Above 0.7 to 3.0 Above 3.0 to 10.5	9.0 9.0 9.0	- - -	18.0 22.0 20.0
	Semi-cold- worked.	AMTS $\frac{1}{2}$ N AMTSN $\frac{1}{2}$ N	Semi cold- worked.	From 0.5 to 3.5 Above 3.5 to 10.5	15.0 15.0	-	5.0 6.0
AMTS, AMTSN	Cold worked	AMTSN, AMTSN	Cold worked	0.5 Above 0.5 to 0.8 Above 0.8 to 1.2 Above 1.2 to 10.5	19.0 19.0 19.0 19.0	- - - -	1.0 2.0 3.0 4.0
	Without heat- treatment.	AMTS, AMTSN	Without heat- treatment.	From 5.0 to 10.5	10.0	-	10.0
AMTS	Cold-worked	AMTS	Cold-worked	From 1.0 to 4.5	Not tested.	-	-

Continued Table 7

1	2	3	4	5	6	7	8
D12	Annealed	D12M	Annealed	From 0.5 to 4.0	15.0	-	14.0
	Semi-cold-worked	D12 1/2 N	Semi-cold-worked	From 0.5 to 4.0	22.5	-	3.0
	Annealed	AMg2N	Annealed	From 0.5 to 1.0 Above 1.0 to 10.5	17.0 17.0	-	16.0 18.0
AMg2	Semi-cold-worked	AMg2 1/2 N	Semi-cold-worked	From 0.5 to 1.0 Above 1.0 to 5.0 Above 5.0 to 10.5	24.0 24.0 23.0	15.0 15.0 14.0	5.0 6.0 6.0
	Cold-worked	AMg2M	Cold-worked	From 0.5 to 1.0 Above 1.0 to 10.5	27.0 27.0	22.0 22.0	3.0 4.0
	Without heat-treatment	AMg2	Without heat-treatment	From 5.0 to 10.5	18.0	-	7.0
AMg3	Annealed	AMg3M	Annealed	From 0.5 to 0.6 Above 0.6 to 4.5 Above 4.5 to 10.5	20.0 20.0 19.0	9.0 10.0 8.0	15.0 15.0 15.0
	Semi-cold-worked	AMg3 1/2 N	Semi-cold-worked	From 0.5 to 1.0 Above 1.0 to 5.0 Above 5.0 to 10.5	25.0 25.0 24.0	20.0 20.0 18.0	7.0 7.0 6.0

Continued Table 7

1	2	3	4	5	6	7	8
AMc3	Without heat-treatment	AMc3	Without heat-treatment	From 5.0 to 6.0 Above 6.0 to 10.5	19.0 19.0	8.0 8.0	12.0 15.0
AMc5	Annealed	AMc5M	Annealed	From 0.5 to 0.6 Above 0.6 to 4.5 Above 4.5 to 10.5	28.0 28.0 28.0	14.0 15.0 13.0	15.0 15.0 15.0
	Without heat-treatment	AMc5	Without heat-treatment	From 5.0 to 6.0 Above 6.0 to 10.5	28.0 28.0	13.0 13.0	12.0 15.0
AMc6B	Annealed	AMc6BM, AMc6M	Annealed	From 0.5 to 0.8 Above 0.8 to 10.5	31.0 32.0	15.0 16.0	15.0 15.0
	Without heat-treatment	AMc6B, AMc6	Without heat-treatment	From 5.0 to 10.5	32.0	16.0	15.0
AMc6U	Annealed	AMc6UM	Annealed	From 2.0 to 5.5	28.0	13.0	15.0
	Annealed	AMc6U	Annealed	From 0.5 to 5.0 Above 5.0 to 10.5	Maximum 15.0 Maximum 15.0	-	20.0 15.0
AV	Hardened and naturally aged	AVT	Hardened and naturally aged	From 0.5 to 0.6 Above 0.6 to 3.0 Above 3.0 to 5.0 Above 5.0 to 10.5	20.0 20.0 20.0 18.0	- - - -	18.0 20.0 18.0 15.0

Continued Table 7

1	2	3	4	5	6	7	8
AV	Hardened and artificially aged	AV1	Hardened and artificially aged	From 0.5 to 5.0 Above 5.0 to 10.5	30.0 30.0	-	10.0 8.0
AV	Without heat-treatment	AV	Hardened and naturally aged	From 5.0 to 10.5	18.0	-	14.0
			Hardened and artificially aged	From 5.0 to 10.5	30.0	-	7.0
	Annealed	D1AM	Annealed	From 0.5 to 1.9 Above 1.9 to 10.5	15.0 -23.0 15.0 -24.0	-	12.0 12.0
D1A	Hardened and naturally aged	D1AT	Hardened and naturally aged	From 0.5 to 1.9 Above 1.9 to 10.5	37.0 36.0	19.0 20.0	15.0 15.0
	Without heat-treatment	D1A	Hardened and naturally aged	From 5.0 to 10.5	35.0	19.0	12.0
D16B	Annealed	D16BT	Annealed	From 0.5 to 10.5	15.0 -24.0	-	10.0
	Hardened and naturally aged	D16BT	Hardened and naturally aged	From 0.5 to 1.5 Above 1.5 to 6.0 Above 6.0 to 10.5	45.0 45.0 45.0	29.5 29.5 29.5	13.0 11.0 10.0

Continued - Table 7

1	2	3	4	5	6	7	8
D16B	Cold-worked after hardening and natural ageing.	D16BTH	Cold-worked after hardening and natural ageing.	From 1.5 to 3.0 Above 3.0 to 7.5	48.5 48.5	36.5 36.5	10.0 8.0
	Annealed	D16ATH	Annealed	From 0.5 to 1.9 Above 1.9 to 10.5	15.0- 23.0 15.0- 24.0	- - -	10.0 10.0
	Hardened and naturally aged.	D16AT	Hardened and naturally aged.	From 0.5 to 1.9 Above 1.9 to 6.0 Above 6.0 to 10.5	41.5 43.5 43.5	27.5 28.0 28.0	13.0 11.0 10.0
D16A	Without heat treatment.	D16A	Hardened and naturally aged.	From 5.0 to 10.5	42.0	26.0	10.0
	Cold-worked after hardening and natural ageing.	D16ATH	Cold-worked after hardening and natural ageing.	From 1.5 to 1.9 Above 1.9 to 7.5	43.5 46.5	34.0 35.0	10.0 8.0
	Annealed	D16ATH	Annealed	From 0.5 to 1.9 Above 1.9 to 4.0	13.0- 23.0 13.0- 24.0	- - -	10.0 10.0
D16U	Hardened and naturally aged.	D16ATH	Hardened and naturally aged.	From 0.5 to 1.9 Above 1.9 to 4.0	37.0 41.5	23.5 27.5	13.0 13.0

Continued Table 7

1	2	3	4	5	6	7	8
V95A	Annealed	V95AN	Annealed	From 0.5 to 10.5	Maxi- mum 25.0	-	10.0
	Hardened and artificially aged.	V95AT1	Hardened and artificially aged.	From 0.5 to 1.9 Above 1.9 to 6.0 Above 6.0 to 10.5	49.0 50.0 50.0	47.0 42.0 42.0	7.0 7.0 6.0
	Without heat treatment	V95A	Hardened and artificially aged.	From 5.0 to 10.5	50.0	42.0	6.0
V95-2A	Annealed	V95-2AN	Annealed	From 1.0 to 10.5	Maxi- mum 25.0	-	10.0
	Hardened and naturally aged.	V95-2AT	Hardened and naturally aged.	From 1.0 to 10.5	32.0	-	10.0
	Without Heat- treatment	V95-2A	Without heat- treatment	From 5.0 to 10.5	32.0	-	10.0

Continued Table 7

1	2	3	4	5	6	7	8
VDLA	Annealed	VD1AM	Annealed	From 0.8 to 10.5	Maxi- mum 25.0	-	10.0
	Hardened and naturally aged.	VD1AT	Hardened and naturally aged.	From 0.8 to 10.5	34.0	-	12.0
	Cold worked	VD1N	Cold worked	From 0.8 to 10.5	Not tested.		
	Without heat- treatment	VD1	Without heat- treatment	From 5.0 to 10.5	34.0	-	12.0

Note: On customer's request annealed sheets from aluminium are fabricated with tensile strength of 11 kg/mm² maximum.

3.5. Mechanical properties of specimens, cut across the rolling direction from annealed sheets and then subjected to hardening and ageing, and also mechanical properties of specimens, cut across the rolling direction from hardened and aged sheets, which undergo rehardening and ageing at the customer plant, should meet the requirements given in table 8.

Table 8.

Alloy grade	Condition of test specimens	Sheet thickness, in mm.	Tensile properties.		
			Tensile strength $\sigma_{0.2}$ in kg/mm ²	Yield point $\sigma_{0.2}$ in kg/mm ²	Percentage elongation when $l = 11.3 \sqrt{F_0}$
			Minimum		
D1A	Hardened and naturally aged	From 0.5 to 1.9	36.0	19.0	15.0
		Above 1.9 to 10.5	36.0	20.0	15.0
D16B	Hardened and naturally aged	From 0.5 to 1.5	43.5	28.0	13.0
		Above 1.5 to 6.0	43.5	28.0	11.0
		Above 6.0 to 10.5	43.5	28.0	10.0
D16A	Hardened and naturally aged.	From 0.5 to 1.9	40.0	26.0	15.0
		Above 1.9 to 10.5	42.0	27.0	12.0
D16U	Hardened and naturally aged.	From 0.5 to 1.9	35.5	22.5	13.0
		Above 1.9 to 4.0	40.0	26.0	13.0
V95A	Hardened and artificially aged.	From 0.5 to 1.0	43.0	40.0	7.0
		Above 1.0 to 6.0	49.0	41.0	7.0
		Above 6.0 to 10.5	49.0	41.0	6.0
AV	Hardened and naturally aged	From 0.5 to 0.6	18.0		18.0
		Above 0.6 to 3.0	18.0		20.0
		Above 3.0 to 5.0	18.0		18.0
		Above 5.0 to 10.5	16.0		16.0
	Hardened and artificially aged	From 0.5 to 5.0	28.0		10.0
		Above 5.0 to 10.5	28.0		8.0

3.6. Sheets should be trimmed from all sides at right angles. The obliquity should not cause the sheets to exceed the tolerances as regards width and length.

Burrs and peeling-off are not allowed on the edges of the trimmed sheets.

3.7. Surface of sheets of all finish groups should be glossy or matt-finished without cracks, fissures, peeling-off, blisters, salt-peter deposit, spots of corrosive nature, diffusion spots (on sheets of thickness above 0.6 mm having normal and thick cladding), slag inclusions, cladding-removed portions (on sheets with normal and thick cladding) and also whitish spots, formed while hardening, and non-metallic inclusions of metallurgical origin, if they are eliminated during cleaning in 5-6% NaOH solution at 50°C for 1-3 minutes followed by brightening in 30% HNO₃ solution. Value of grain, to be determined by the surface finish of specimens subjected to tensile test, exceeding that given in appendix 1 is not allowed on sheets from alloy of grade AMg.

3.8. The following defects are not allowed on the front side of sheets of 1st group of surface finish: spots and stripes due to burnt lubricant, marks due to rolls in the form of bright and dark stripes and pits.

Parameter of roughness of sheet surface should be $Ra = 1.25$ μm , for base length 0.8 mm as per GOST 2789-73.

3.8.1. The following defects are not causes for rejection:

a) metallic fine laps with total area 20 mm² maximum per m² of surface of sheets having width upto 1200 mm inclusively and 50 mm² maximum per m² of surface of sheets having width above 1200 mm;

- b) depressions due to chipping-off of laps;
- c) blisters having total area 20 mm^2 maximum per m^2 of surface of sheet, size of each blister being 5 mm^2 maximum;
- d) singular and clustered fine scratches of depth 0.02 mm maximum on sheets having width upto 1200 mm and 0.05 mm maximum on sheets having width above 1200 mm .

One cluster should not contain more than 5 scratches in a square of size $200 \times 200 \text{ mm}$;

- e) incision, with length of individual cut not more than 4 mm ;
- f) depressions in the form of fine dents or convexities;
- g) singular ruptures due to bends on annealed sheets of thickness $0.5 - 0.8 \text{ mm}$, width 1000 mm and above when length is more than 4000 mm ; and width 1500 mm and above when length is 4000 mm ;
- h) slightly worn-out places of total area not exceeding 1% of sheet surface;

- i) marks due to rolls in the form of individual "patches" or (deposits of aluminium) of length 50 mm maximum and width 5 mm maximum, with total area not exceeding 1% of sheet surface;
- j) temper colour.

3.8:2. Surface of the opposite side of sheets of I group of finish should correspond to the requirements of II group of sheet finish.

3.9. On the front and opposite side of sheets of II group of finish in all conditions, except annealed, spots and stripes due to burnt lubricant are not allowed.

Parameter of roughness of sheet surface should be $Ra = 2.5$ μm for base length 0.8 mm as per COST 2789-73.

3.9.1. The following defects are not causes for rejection:

- a) metallic fine laps with total area not exceeding 50 mm^2 per m^2 of sheet surface for aluminium and aluminium alloys of all grades excluding aluminium alloys of grades AMc3, AMc5, AMc6 for which laps with total area not exceeding 80 mm^2 per m^2 of sheet surface are allowed;
- b) recesses due to chipping-off of laps;
- c) air holes with area not exceeding 40 mm^2 per m^2 of sheet surface, the size of each air hole being 10 mm^2 maximum;
- d) under surface air bubbles;
- e) singular and clustered fine scratches;
- f) incisions and deposits ^{of aluminium} in the form of patches having length not exceeding 5 mm;
- g) marks in the form of fine dents and convexities;
- h) singular fractures due to bends in case of annealed and hardened sheets of thickness 0.5 - 0.8 mm, with width 1000 mm and above if length is above 4000 mm and with width 1500 mm and above if length is upto 4000 mm;
- i) crosswise waviness to depth upto 0.2 mm, caused by vibration on cold worked sheets and on sheets from alloys of grades AMc5 and AMc6, fabricated without cladding;
- j) slightly worn-out places with total area not exceeding 2% of sheet surface;

k) marks due to rolls in the form of individual "patches" (deposits of aluminium) of length not exceeding 50 mm, width not exceeding 5 mm, with total area not exceeding 3% of sheet surface;

l) light traces of sheet warping due to hardening which cannot be felt by hand on hardened sheets of thickness 0.5-0.8 mm;

m) temper colour;

n) marks due to rolls on sheets from aluminium and aluminium alloy of grade AMrs with total area not exceeding 5% of sheet surface;

o) marks due to rolls in the form of light and dark stripes without tears along the rolling;

p) spots and stripes due to emulsion, of total area not exceeding 3% of sheet surface;

q) crosswise streaks on hardened sheets, obtained by hardening the sheets in furnace having air circulation, and weak stains.

3.10. On the front and opposite side of sheets of normal finish in all material conditions, except annealed, spots and stripes due to burnt lubricant are not allowed.

3.10.1. The following defects are not causes for rejection: laps, recesses due to chipping-off of laps, air holes, singular and clustered scratches, minute incisions, deposits of aluminium, and other defects, caused by the production method, having total area not exceeding 5% of sheet surface.

3.11. Depth of occurrence of the permissible defects listed in points 3.8.1, 3.9.1 and 3.10.1, should not exceed half the negative tolerance on sheet thickness and should not disrupt the cladding layer on sheets having thick and normal cladding.

3.11.1. On sheets from aluminium and aluminium alloys of grades D1, D16, V95, AV, AMg2, AMg3, AMg5, AMg6 of I and II groups of surface finish, depth of occurrence of permissible defects (listed in points 3.8.1 and 3.9.1.) should not lead the sheet beyond the tolerances on sheet thickness.

3.12. On sheets of I and II group of surface finish/porions of total area not exceeding 0.5% of sheet surface are allowed, and on sheets of normal finish - 1% of sheet surface, cleaned with emery paper on paper base having grain size not larger than No. 6 (GOST 5456-75) or with emery paper on cloth base having grain size not larger than No. 6 (GOST 5009-75) are allowed to depth not exceeding half the thickness of cladding layer, and for non-cladded sheets to depth not exceeding half the negative tolerance on sheet thickness.

3.13. Sheets without heat treatment are fabricated, as regards surface quality, of II group and normal surface finish.

3.14. It is allowed to establish masters of surface quality of sheets by mutual agreement between manufacturer and customer.

3.15. Rolling quality of sheets from aluminium alloys of grades AV, D1A, D16B, D16H, D16U, V95A, V95-2A, VD1A, fabricated in annealed, hardened and aged conditions, should correspond to the requirements given in table 9.

3.15.1. Rolling quality of sheets from aluminium of all grades and aluminium alloys of grades AV, AMg, AMgS, MM, D12, AMg2, AMg3, AMg5, AMg6B, AMg6, AMg6U, V95-2A and VD1A in annealed, semi-cold worked and cold-worked conditions, should correspond to the requirements given in table 10.

3.15.2. Rolling quality of sheets from aluminium and aluminium alloys in annealed condition with thickness above 4.0 mm, fabricated by hot rolling method, and also without heat treatment should correspond to the data given in table 11.

4. ACCEPTANCE RULES.

4.1. Sheets are offered for acceptance in batches. A batch should consist of sheets of same grade of aluminium or aluminium alloy, same material condition and same dimensions.

Table 9.

mm

Sheet thickness	Sheet width	Sheet length	Non-planeness when the sheet is freely laid (each side) on plane of plate, maximum.	
			Along whole surface of sheet (including longer sides).	As regards short sides (including longer sides upto 300 mm from sheet corners).
From 0.5 to 1.5	Upto 1200	Upto 7200	14	20
	Above 1200 to 1600		16	20
Above 1.5 to 4.0	Upto 1200	Upto 7200	18	30
	Above 1200 to 1600		18	30
Above 4.0 to 10.5	Upto 1200	Upto 7200	20	40
	Above 1200 to 1600		22	40
From 0.8 to 2.0	Above 1600 to 2000	Upto 4000	20	40
		Above 4000 to 7200	23	45
Above 2.0 to 10.5	Above 1600 to 2000	Upto 4000	24	50
		Above 4000 to 7200	25	50

Weight of a batch is not restricted.

Note: If the batch consists of sheets of different charges of heat-treatment, each charge should be checked for conformity to the requirements of this standard.

4.2. Chemical composition of aluminium and aluminium alloys is done at manufacturing plant from each melt before machining the ingots.

4.3. Dimensions are checked on each tenth sheet.

4.4. Quality of surface and rolling of sheets is checked on each sheet.

Note: The manufacturing plant may carry out sheet-wise inspection of sheets of II group and normal finish.

4.5. The quantity of sheets, indicated in table 12 but not less than one sheet from each offered batch, are subjected to checking of tensile properties (tensile strength, yield point and percentage elongation) depending on the grade of aluminium alloy and material condition.

4.6. The mechanical properties of annealed sheets (except sheets from alloys AMc3, AMc5 and AMc6) and also sheets from all alloys of grade D1 in hardened and naturally aged condition and sheets without heat-treatment are not checked by manufacturing plant.

Note: On customer's request the mechanical properties are determined in the amount, specified in table 12.

Table 10

mm

Sheet thickness	Sheet width	Sheet length	Non-planeness when the sheet is freely laid (each side) on plane of plate, maximum.	
			along whole surface of sheet (including longer sides).	as regards shorter sides (including longer sides up to 300 mm from sheet corners).
1	2	3	4	5
From 0.3 to 3.0	Upto 1000	Upto 2000	14	14
Above 3.0 to 6.0			18	18
Above 6.0 to 10.5			23	23
From 0.5 to 1.0	Above 1000 to 1200	Upto 4000	15	20
	Above 1200 to 1600		16	25
	Upto 1200	Above 4000 to 7000	20	25
	Above 1200 to 1600		35	45
Above 1.0 to 1.5	From 1000 to 1200	Upto 4000	20	25
	Above 1200 to 1600		25	30
	Upto 1200	Above 4000 to 7000	25	30
	Above 1200 to 1600		30	45

Contd. . . . /

mm

contd

Table 10

1	2	3	4	5
Above 1.5 to 3.0	From 1000 to 1200	Upto 4000	25	30
	Above 1200 to 1600		25	35
	Upto 1200	Above 4000 to 7000	25	30
	Above 1200 to 1600		25	40
Above 3.0 to 4.0	From 1000 to 1200	Upto 4000	25	40
	Above 1200 to 1600		25	40
	Upto 1200	Above 4000 to 7000	25	40
	Above 1200 to 1600		30	45
Above 4.0 to 6.0	From 1000 to 1200	Upto 4000	25	40
	Above 1200 to 1600		30	40
	Upto 1200	Above 4000 to 7000	25	40
	Above 1200 to 1600		30	45
From 6.0 to 10.5	From 1000 to 1200	Upto 4000	25	40
	Above 1200 to 1600		30	40
	Upto 1200	Above 4000 to 7000	25	40
	Above 1200 to 1600		30	45
Above 0.8 to 10.5	Above 1600 to 2000	Upto 4000	35	50
		Above 4000 to 7000	50	55

Table 11.

Sheet thickness	Sheet width	Sheet length, face of sheet (including longer sides)	Non-planeness when the sheet is freely laid (each side) on plane of plate, maximum.
Sheet	Sheet	Sheet, Along whole surface, as regards shorter sides (including longer sides), from sheet corners)	
upto 1200	upto 1200	upto 300 mm	
Above 1200 to	Above 1200 to	upto 300 mm	
upto 1600	upto 1600	upto 300 mm	
Above 1600 to	Above 1600 to	upto 300 mm	
upto 2000	upto 2000	upto 300 mm	

Note:

Rolling quality of sheets from aluminium alloys of grades AMg3, AMg, AMg6, AMgB, to be supplied without heat-treatment, should meet the following requirements: non-planeness when the sheet is freely laid (each side) on plate plate may be 20 mm more than the norms, given in Table 11.

4.7. Roll-wise testing of sheets (except hardened sheets) is allowed on 3 specimens, taken from each roll (at the start, centre and end of the roll).

4.8. Checking for exfoliations is done visually.

4.9. Checking for coarse-crystalline structure (size of grain) on sheets from alloy of grade AMg is done on one specimen, subjected to tensile test, taken from each roll.

When the specimen is stretched its surface becomes slightly rougher, the permissible norm of roughness is determined by the master, specified in appendix 1 or it is set by mutual agreement between manufacturer and customer.

4.10. Sheets, which are heat-treated in saltpeter baths, are checked for presence of salt pector on the sheet surface. 1% sheets from a batch, but not less than one sheet, are taken for checking.

4.11. If unsatisfactory test results of mechanical properties are obtained even for one of the properties, repeated tests are done for the same on double quantity of specimens. If the results of repeated tests are unsatisfactory, then piece-wise testing is allowed whose results are taken as final.

Table 12.

Grade of aluminium and aluminium alloy and cladding.	Material condition.	Quantity of sheets to be tested from a batch, in % maximum.		Tensile strength and percentage elongation.	Yield point.
		1	2	3	4
AMg3, AMg5, AMg6, AMg6U, AMg6B.	Annealed			10	5
A7, A6, A5, A0, A00, AD1, AMrs, AMrs S, D12, AMg2	Semi cold-worked.			5	2
AMg3				5	5

cont'd Table 12

1	2	3	4
A7, A6, A5, A0, AD0, AD1	Cold-worked	1	-
AMs, AMsS, AMe2		5	-
AV	Hardened and naturally aged.	5	-
D16A, D16B		10	5
AV	Hardened and naturally aged.	5	-
V95A	Naturally aged	5	5
D16A, D16B	Cold-worked after hardening and natural ageing.	10	-

5. TEST METHODS.

5.1. Examination of sheets is done without using optical devices.

5.2. The dimensions are measured with measuring instruments which ensure the required accuracy.

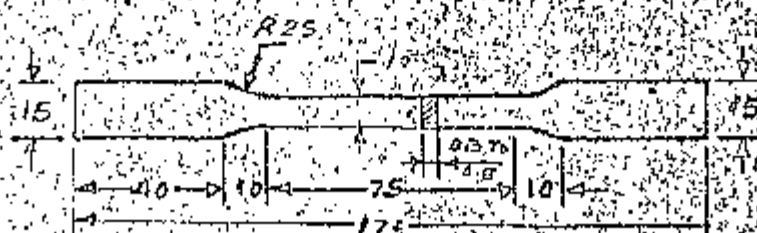
Measurement of sheet thickness is done at a distance of not less than 115 mm from the corners and not less than 25 mm from the sheet edges.

5.3. Chemical analysis of aluminium alloys is done as per GOST 11739-66 - GOST 11760-66, and for aluminium - as per GOST 12697-67 - GOST 12706-67.

5.4. Tensile testing of sheets is done as per GOST 1497-73 on one specimen from each sheet to be checked.

Specimen for tensile tests is cut from the test sheet across the rolling direction.

Shape and dimensions of specimens, cut for tensile tests from sheets of thickness 0.3-0.8 mm, should correspond to the figure.



5.5. Non-planeness of sheets is determined on all 4 edges by measuring the distance from checking plate to bottom surface of sheet.

Convexity of sheet (height and length of off-rolling) is determined as per method adopted by manufacturing plant.

5.6. For checking presence of salt peter, a drop of solution of 0.5% diphenylamine in concentrated sulphuric acid (10 cm³ distilled water and 25 cm³ sulphuric acid, density 1.84 gm/cm³ are added to 0.5 gm. diphenylamine) is applied on the sheet surface.

After dissolution of diphenylamine, the volume of solution is brought up to 100 cm³ by adding sulphuric acid.

Intensive blue colour of the drop of solution after 10-15 secs. indicates the presence of salt peter at that place.

After the test the drop of solution is removed with filter paper, and the tested portion is thoroughly washed with water and then rubbed dry.

If traces of salt peter are detected the batch of sheets is rewashed and retested for presence of salt peter on the sheet surface.

6. MARKING, PACKING, TRANSPORTATION AND STORAGE.

6.1. On the reverse side of the sheet, at one of the corners at a distance of not more than 30 mm from the edge (as regards sheet width), the following details should be stamped or inscribed with paint:

grade of aluminium or aluminium alloy, cladding, material, condition, sheet thickness and batch No.

Note: On customer's request it is allowed to supply the sheets without stamping.

6.2. By mutual agreement between manufacturer and customer, on one side of sheet surface instead of stamping it is allowed to inscribe short line marking indicating the grade of aluminium or aluminium alloy, cladding, material condition and sheet thickness with intervals between the lines not exceeding 250 mm. Quick-drying paints are used for marking the sheets.

6.3. Conservation, packing, marking of tare and transportation are done in accordance with GOST 9.011-73.

Note: In order to avoid wear and tear of sheets they are wrapped from one side with adhesive paper, in this case conservation and interlaying of greased paper between the sheets are not done.

The adhesive paper is prepared by application of polyisobutyl or rubber (4508) glue on paper.

The following types of paper are used: telephone paper (GOST 3553-73), electroinsulating winding paper (GOST 1931-75) and cable paper (GOST 645-67).

The rubber or polyisobutyl glue is a solution of rubber compound or polyisobutyl, colophony (GOST 19113-73), dry zinc white (GOST 202-62), ceresin (GOST 2488-73), industrial oil (GOST 20799-75) in benzine - solvent used in rubber industry (GOST 443-56).

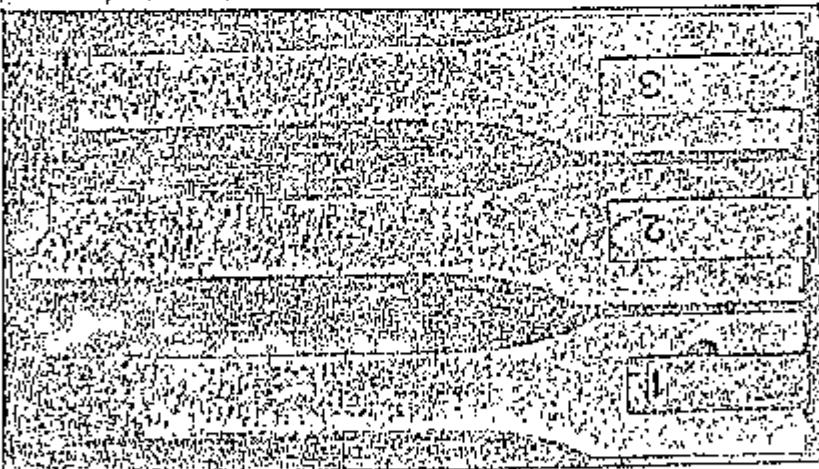
6.4. Each batch of sheets should be furnished with a document, which certifies the conformity of the sheets to the requirements of this standard. The document should contain:

- a) name of manufacturing plant;
- b) name of customer;
- c) method of calling;
- d) batch No.;
- e) net weight of batch;
- f) test results (for mechanical properties only maximum and minimum values are indicated);
- g) delivery date;
- h) this standard No.

Note: On customer's request, copies of chemical analysis reports be sent.

APPENDIX 1.

Permissible large-crystalline structure of sheets from
aluminum alloy of grade AMs (types 1, 2, 3).



APPENDIX 2 (reference)

Theoretical weight of 1 m ² sheet			
Dimensions in mm			
Sheet thickness, mm	Theoretical weight of 1 m ² sheet, kg	Sheet thickness, mm	Theoretical weight of 1 m ² sheet, kg
0.3	0.855	3.5	9.975
0.4	1.140	4.0	11.400
0.5	1.425	4.5	12.825
0.6	1.710	5.0	14.250
0.7	1.995	5.5	15.675
0.8	2.280	6.0	17.100
0.9	2.565	6.5	18.525
1.0	2.850	7.0	19.950
1.2	3.420	7.5	21.375
1.5	4.275	8.0	22.800
1.6	4.560	8.5	24.225
1.8	5.130	9.0	25.650
1.9	5.415	9.5	27.075
2.0	5.700	10.0	28.500
2.5	7.125	10.5	29.925
3.0	8.550		

NOTES:

1. Theoretical weight of 1 m² is calculated as per formula that thickness at density equal to 2.85 g/cm³ which corresponds to the density of aluminium alloy of grade V93.

2. For calculating the approximate theoretical weight of other aluminium alloys and aluminium the following conversion factors should be used:

for aluminium of all grades - 0.950;

for alloy of grade AMs — 0.958;

— AMs — 0.958;

— AM — 0.953;

— D12 — 0.940;

— AMa2 — 0.940;

— AMa3 — 0.937;

— AMa5 — 0.930;

— AMa6 — 0.926;

— AV — 0.926;

— AV — 0.947;

— D16 — 0.976;

— D1 — 0.982.

3. Theoretical weight is not the basis for acceptance of the product.

Other standards referred to in this standard:

GOST 8069-74

GOST 4184-74

GOST 113-57

GOST 2789-73

GOST 6456-75

GOST 5009-75

GOST 11739-56

to GOST 11760-56

GOST 12697-57

to GOST 12706-57

GOST 1497-73

GOST 9,011-73

GOST 3553-73

GOST 1931-75

GOST 645-57

GOST 19113-73

GOST 202-52

GOST 2488-73

GOST 20799-75

GOST 443-56

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