

STANDARD/SPECIFICATION	NUMBER
FORMABLE ALUMINIUM AND ALUMINIUM ALLOYS	GOST - 4784-74
	SUPERSEDES GOST 4784 - 65
GRADES	SMT 1 OF 7

1. This standard pertains to formable aluminium and aluminium alloys, which are meant for producing semifinished products (sheets, strips, bands, plates, profiles, panels, bars, pipes, wires, stampings and forgings) by hot or cold forming method and also meant for producing ingots and slabs.

The standard corresponds to the recommendations of Economical Mutual Aid Council for standardization RS 1581-72.

2. The grades and chemical composition of aluminium and aluminium alloys should correspond to those specified in table 1.

3. The wire, meant for cold heading, should be produced from aluminium/alloys of grades D1, D16 and ANg5, whose chemical composition is specified in table 2. During this, the grades are additionally marked with letter "p".

4. For beryllium-containing alloys, the beryllium is added as per calculation.

5. While using the alloys for manufacturing the containers meant for food articles, the lead content should not exceed 0.15% and arsenic 0.015%.

6. During manufacture of pipes from alloys of grade ANg1, the content of iron and silicon should not be more than 0.4%, content of titanium not more than 0.1%, content of Zinc not more than 0.2%.

7. In alloy of grade ANtS, the ratio of iron to silicon should be more than one.

FORMING  
ALUMINIUM AND ALUMINIUM ALLOYS  
GRIPES

Table 1.

Chemical Composition %  
Alloying Constituents

Alloy	Chemical Composition %											
	Aluminum	Copper	Magnesium	Manganese	Nickel	Iron	Silicon	Zinc	Titanium	Chromium	Zinc	
100	99.50	-	-	-	-	-	-	-	-	-	-	-
101	99.30	-	-	-	-	-	-	-	-	-	-	-
102	Base Constituent	-	0.2-0.5	1.0-1.4	-	-	-	-	-	-	-	-
103	"	-	-	1.0-1.6	-	-	-	-	-	-	-	-
104	"	-	-	1.0-1.4	-	0.25-0.45	0.15-0.35	-	-	-	-	-
105	"	-	0.0-1.0	0.2-1.0	-	-	-	-	-	-	-	-
106	"	-	0.4-1.7	-	-	-	-	-	-	-	-	-
107	"	-	1.8-2.6	0.2-0.6	-	-	-	-	-	-	-	-
108	"	-	3.2-3.8	0.3-0.6	-	-	0.5-0.8	-	-	-	-	-
109	"	-	3.8-4.6	0.5-0.8	-	-	-	-	0.02-0.10	0.05-0.25	-	0.002-0.005
110	"	-	4.8-5.8	0.3-0.8	-	-	-	-	0.02-0.10	-	-	0.002-0.005
111	"	-	5.8-6.8	0.5-0.8	-	-	-	-	0.02-0.10	-	-	0.002-0.005
112	"	-	0.4-0.9	-	-	-	0.3-0.7	-	-	-	-	-
113	"	0.15-0.40	0.2-1.2	-	-	-	0.4-0.8	-	-	0.15-0.35	-	-

Chemical Composition, %

Alloying Constituents

Alloy	Alum. - SILIC.	Copper	Magnesium	Manga- ness.	Nickel	Iron	Silicon	Zi- no.	Titanium	Chromium	Zir- conium	Bory- llium
D55		-	0.8-1.4	0.5-0.9	-	-	0.8-1.2	-	-	-	-	-
B		0.1-0.5	0.45-0.90	or Chromium min 0.15-0.35	-	-	0.6-1.2	-	-	-	-	-
1		3.8-4.8	0.4-0.8	0.4-0.8	-	-	-	-	-	-	-	-
65		3.8-4.5	0.15-0.30	0.3-0.5	-	-	-	-	-	-	-	-
16		3.8-4.9	1.2-1.8	0.3-0.9	-	-	-	-	-	-	-	-
18		2.2-3.0	0.2-0.5	-	-	-	-	-	-	-	-	-
54		1.9-2.5	1.4-1.8	-	0.8-1.3	0.8-1.2	-	-	-	-	-	-
14-1		1.9-2.7	1.2-1.8	-	1.3	0.8-1.4	-	0.02-0.10	-	-	-	-
15		1.8-2.6	0.4-0.8	0.4-0.8	-	-	0.7-1.2	-	-	-	-	-
23		3.9-4.8	0.4-0.8	0.4-1.0	-	-	0.6-1.2	-	-	-	-	-
95		1.4-2.0	1.8-2.8	0.2-0.6	-	-	-	5.0-7.0	-	0.10-0.25	-	-
915		-	1.3-1.8	0.2-0.6	-	-	-	3.4-4.0	-	0.08-0.20	0.15-0.25	-
525		-	1.3-1.8	0.2-0.7	-	-	-	3.4-4.0	-	-	-0.1-0.2	-

Continuation of Table - 1

Grades.	Chemical Composition, %											
	1	2	3	4	5	6	7	8	9	10	11	12
	Iron	Sili- con.	copper	Manga- nese.	Nickel	Zinc	Impurities, Maximum.	Chro- mium.	Magne- sium.	Chro- mium.	Other Impurities	Total
											Each indivi- dually.	
ADO	0.30	0.30	0.02	0.025	-	0.1	0.1	0.05	-	-	0.02	-
ADL	0.30	0.30	0.05	0.025	-	0.1	0.16	0.05	-	-	0.02	-
MM	0.6	1.0	0.2	-	-	0.1	0.1	-	-	-	0.05	0.2
AD35	0.7	0.6	0.15	-	-	0.1	0.2	0.2	-	-	0.05	0.1
AD35	0.7	-	0.1	-	-	0.1	0.1	0.05	-	-	0.05	0.1
AD2	0.7	0.7	0.1	-	-	0.1	0.1	-	-	-	0.05	0.1
AMG1	0.10	0.10	0.1	0.2	-	-	-	-	-	-	0.05	0.1
AMG2	0.4	0.4	0.1	-	-	0.2	0.1	-	0.05	-	0.05	0.1
AMG3	0.5	-	0.1	-	-	0.2	0.1	-	0.05	-	0.05	0.1
AMG4	0.4	0.4	0.1	-	-	0.2	-	-	-	-	0.05	0.1
AMG5	0.5	0.5	0.1	-	-	0.2	0.1	-	-	-	0.05	0.1
AMG6	0.4	0.4	0.1	-	-	0.2	-	-	-	-	0.05	0.1
AD31	0.5	-	0.1	0.1	-	0.2	0.15	-	-	-	0.05	0.1
AD33	0.7	-	-	0.15	-	0.25	0.19	-	-	-	0.05	0.15

Grades	Chemical Composition %										Other Impurities Each indi- vidually	Total
	Impurities (Max)											
1	2	3	4	5	6	7	8	9	10	11	12	
	Iron	Silicon	Copper	Manga- nese	Mickel	Zinc	Tita- nium	Magne- sium	Chro- mium			
AD 35	0.5	-	0.1	-	-	0.2	0.15	-	-	0.05	0.1	
AV	0.5	-	-	-	-	0.2	0.15	-	-	0.05	0.1	
DI	0.7	0.7	-	-	0.1	0.3	0.1	-	-	0.05	0.1	
V 65	0.2	0.25	-	-	-	0.1	0.1	-	-	0.05	0.1	
D 16	0.5	0.5	-	-	0.1	0.3	0.1	-	-	0.05	0.1	
D 18	0.5	0.5	-	0.2	-	0.1	0.1	-	-	0.05	0.1	
AK 6	-	-	-	0.2	-	0.3	0.1	-	-	0.05	0.1	
AK4-1	-	0.35	-	0.2	-	0.3	-	-	0.1	0.05	0.1	
AK 6	0.7	-	-	-	0.1	0.3	0.4	-	-	0.05	0.1	
AK 8	0.7	-	-	-	0.1	0.3	0.1	-	-	0.05	0.1	
V 95	0.5	0.5	-	-	0.1	-	-	-	-	0.05	0.1	
1915	0.4	0.3	0.1	-	-	-	0.1	-	-	0.05	0.1	
1925	0.7	0.7	0.8	-	-	-	0.1	-	0.2	0.05	0.1	

Notes: 1. Recommended figure designation of aluminium and al. alloys has been indicated in appendix.  
 2. In aluminium of grades ADO, ADI, total content of impurities should not exceed 0.50 and 0.70% correspondingly.

Table-2

Grade	Chemical Composition %													
	Alloying constituents				Impurities, Maximum									
	Alumi- nium	Copper	Magnesi- um.	Manga- nese.	Tita- nium	Bery- llium	Iron	Silici- con.	Copp- er.	Zinc	Total Titanium	Other impurities Each Indivi- dually.	Total	
2	3	4	5	6	7	8	9	10	11	12	13	14		
DLP	Base con- stituent. 3.8- 4.6	0.4-0.8	0.4-0.8	-	-	-	0.5	0.5	-	0.1	0.1	0.05	0.1	
DI6P	- do - 3.8- 4.5	1.2-1.6	0.3-0.7	-	-	-	0.5	0.5	-	0.1	0.1	0.05	0.1	
A Mg 5P	- do -	4.7-5.7	0.2-0.5	-	-	-	0.4	0.4	0.2	-	-	0.05	0.1	

FORMABLE ALUMINIUM AND ALUMINIUM ALLOY GRADES	GOST 4704-74	
	10	7

\* C. Refer GOST 21400-76 about the mechanical properties of  
 the alloys of grades AN 75, AN 75B, AN 31, AN 33, AN 42,  
 AN 42c, AN 45, AN 46, AN 46c, AN 46d, AN 46e, AN 46f, AN 46g,  
 AN 46h, AN 46i and AN 46j.

\* Para 6 in add as per letter of Soviet Specialist  
 Ltd. Co. 280749/703 dated 10.06.88.

FORMABLE  
ALUMINIUM AND ALUMINIUM ALLOYS  
GRADES.

GOST 4784 - 74  
Page No. 7      No. of pages 7

Appendix to GOST 4784 - 74 (Recommended).

Recommended number code for grades of aluminium and aluminium alloys.

Grades	Recommended number code for grade	Grades	Recommended number code for grade
ADO	1011	AD35	1350
AD1	1013	AV	1340
AK	1403	V65	1165
<u>AKts</u>	1400	D1	1110
<u>AMtsS</u>	1401	DIP	1111
D12	1521	DI6	1160
AMg1	1510	D16P	1161
AMg2	1520	D18	1180
AMg3	1530	AK4	1140
AMg4	1540	AK4-1	1111
AMg5	1550	AK6	1360
AMg6P	1551	AK8	1380
AMg6	1560	V95	1950
ADE1	1310	1915	1915
AD33	1330	1925	1925