

211

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BRANCH STANDARD
 ARMOUR SHEETS AND PLATES
 FROM ALUMINIUM ALLOY
 GRADE A5T-101
 SPECIFICATIONS
 OST B3 - 75-77

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147
2
16

12

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BRANCH STANDARD, ARMOUR SHEETS AND PLATES FROM ALUMINIUM ALLOY, GRADE A5T - 101.

OST B3-75-77

SHEET	No. OF SHEETS
1	1472

211

BRANCH STANDARD

Present standard is applicable to sheets and plates from aluminium alloy grade A5T-101 intended for the manufacture of armour components and design of articles for armour equipments.

I. RANGE

1.1. Thickness of sheets and plates should conform to those specified in Table I

Designation of semi finished items	mm.		
	Thickness	Width	Length.
Sheets	8 - 10	1200-2000	2000-6000
Plates	II - 32	1200-2000	2000-6000

Table-1

Example for specifying the designations of plates from aluminium alloy grade A5T-101 without plating, of thickness 20mm, width 1200mm and length 6000mm in hardened and artificially aged conditions:

Plate A5T-101T1 20 x 1200 x 6000 OST B3-75

1.2. Sheets and plates are supplied with measured lengths on the with multiple measurements within the limits of standard lengths with an interval of 500mm.

1.3. Tolerances on dimensions of sheets and plates should conform to those specified in Table 2.

ALL	SHEET	NO. OF DOCUMENT	SIGNATURE	DATE					
					OST B3-75-77				2

TABLE 2.

Thickness	Tolerance on thickness	Width	Tolerance on width	Tolerance on length	
8 - 10	+ 0.5 from	1200 - 1300	+ 30	+ 50	
	+ 0.8 above - 0.2	1300 - 2000			
11 - 15	+ 0.8 - 0.2	1200 - 1300			
	+ 1.5 - 0.5	1300 - 2000			
16 - 25	+ 1.0 - 0.5	1200 - 1300			
	+ 2.0 - 1.0	1300 - 2000			
26 - 32	+ 1.0	1200 - 1300			+ 130
	+ 1.5	1300 - 2000			

- 1.4. Sheets and plates should be cut at take right angles. Oblique cut should not take the sheet or plate beyond lower limit of given length.
- 1.5. Plates with thickness above 15mm should be supplied without cut edges:
- 1.6. Mass of the given sheets on plates is obtained by calculation. During the calculation assume:
 Density of the material - 2.78 gms/cc;
 Thickness of sheet or plate as equal nominal thickness plus half of upper tolerance limit.
 Length and width of sheet or plate, equal to nominal size, plus half tolerance limits on length and width.
- 1.7. Ordering quantity of every standard size should not be less than 2.4 tonnes.

2. TECHNICAL REQUIREMENTS

- 2.1. Sheets and plates should be manufactured in accordance with the requirements of the present standard as per technical manuals and approved in the established order and agreed with the customer's representative on his requirements.
- 2.2. Chemical composition of sheets and plates from aluminium alloy grade A5T-101 should conform to the requirements of the standard technical manuals.
- 2.3. Sheets and plates are manufactured without plating.
- 2.4. Sheets and plates are supplied after hardening and I stage artificial ageing.
- 2.5. Sheets and plates should be stress relieved after hardening.
- 2.6. Mechanical properties of sheets and plates in ready for supply condition should not be ^{min} beyond the requirements in Table 4.

TABLE 4

Thickness of sheet or plate in mm	Ultimate strength MPa (kgf/mm ²)	Yield strength MPa (kgf/mm ²)	Elongation %	Hardness value BHN	Impact strength th (kgf-m/cm ²)
8-15	470.4 (48.0)	372.4 (38.0)	6.0	138	0.6

ALL	SHEET	No. OF DOCUMENT	SIGNATURE	DATE	4 4
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TABLE 4 CONTINUED.

Thickness of sheet or plate in mm	Ultimate strength MPa(kgf/mm ²)	Yield strength MPa (Kgf/mm ²)	Elongation %	Hardness Value BHN	Impact strength kgfM/cm ² .
16-32	470.4 (48.0)	372.4 (38.0)	6.0	138	0.5
26-32	470.4 (48.0)	372.4 (38.0)	5.0	138	0.45

2.7. Bullet proof resistance of the semi finished items should be checked on shelling boards subjected to additional artificial ageing as per stage II and should ensure acceptable damage during firing trials and in correspondence with norms, shown, in Table 5.

Table-5

Type calibre of bullet and testing equipment.	Thickness of shelling board mm	Angle of impact of bullet with shelling board α degree.	Firing range M during velocity 25 = 817m/s average	Qty-of the resulting damages of shelling board pieces, Min.	Character of permissible damages as per OST B3-2518-74.
5 - 32 12.7 mm Machine gun LWK	8	82	75	3	No. 1, 2, 3
	10	79	75	3	No. 1, 2, 3
	12	76	75	3	No. 1, 2, 3
	15	72	75	3	No. 1, 2, 3
	20	63	75	3	No. 1, 2, 3
	23	58	75	3	No. 1, 2, 3
	32	46	75	3	No. 1, 2, 3

NOTES:

1. SHELLING of boards of thickness 12mm should be carried out in the direction transverse to the direction of

REV	5
OST B3 - 75 - 77	
ALL SHEET No. OF DOCUMENT SIGNATURE DATE	