इंटरनेट मानक

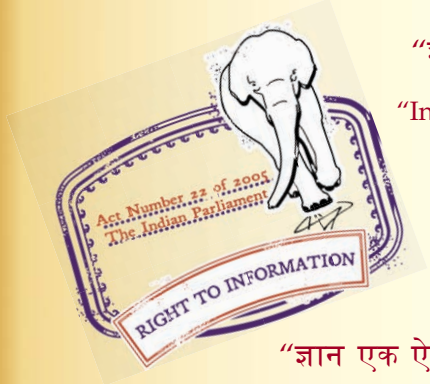
Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 2676 (1981): Dimension for wrought aluminium and aluminium alloy sheet and strip [MTD 7: Light Metals and their Alloys]



"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

IS : 2676 - 1981
(Reaffirmed 2001)

Indian Standard

DIMENSIONS FOR WROUGHT ALUMINIUM AND ALUMINIUM ALLOYS, SHEET AND STRIP

(First Revision)

Second Reprint SEPTEMBER 1991

UDC 669.71-41-131 006.78

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3 *August* 1981

Indian Standard

DIMENSIONS FOR WROUGHT ALUMINIUM AND ALUMINIUM ALLOYS, SHEET AND STRIP

(First Revision)

Light Metals and Their Alloys Sectional Committee, SMDC 10

Chairman	*Representing*
SHRI B. K. MURTHY	Indian Aluminium Co Ltd, Calcutta
Members	
SHRI V. D. AGARWAL	Aluminium Corporation of India Ltd, Calcutta
SHRI V. K. AGRAWAL	Hindustan Aluminium Corporation Ltd, Renukoot, Dist Mirzapur
SHRI K. L. BARUI	National Test House, Calcutta
SHRI PREM BAVEJA	Hindustan Aeronautics Ltd (Bangalore Division), Bangalore
SHRI R. KUPPASWAMY (*Alternate*)	
SHRI B. D. BISWAS	Ministry of Defence (DGOF)
SHRI S. N. CHATTERJEE	Directorate of Technical Development and Production (Air), New Delhi
CHEMIST & METALLURGIST	Integral Coach Factory, Perambur, Madras
SHRI D. M. DAVAR	Premier Automobiles Ltd, Bombay
SHRI A. T. BORATE (*Alternate*)	
SHRI P. U. DEORA	Cables and Conductors Manufacturers' Association of India, New Delhi
SHRI B. R. DUTTA	The Institute of Indian Foundrymen, Calcutta
SHRI A. GUHA (*Alternate*)	
SHRI N. GOPALKRISHNAN	Indian Aluminium Co Ltd, Calcutta
SHRI A. K. HAJRA (*Alternate*)	
SHRI F. A. A. JASDANWALLA	Indian Standard Metal Co Ltd, Bombay
SHRI C. CHATTERJEE (*Alternate*)	
JOINT DIRECTOR (MET)-PM, RDSO, LUCKNOW	*Ministry of Railways*
CHEMIST & METALLURGIST, EASTERN RAILWAY, JAMALPUR (*Alternate* I)	
DEPUTY DIRECTOR, STANDARDS (CARR)-II, RDSO, LUCKNOW (*Alternate* II)	
SHRI P. M. JOSEPH	Aluminium Industries Ltd, Madras
SHRI M. K. JOSHI	Ministry of Defence (R & D)
SHRI I. N. BHATIA (*Alternate*)	

(*Continued on page* 2)

(*Continued from page* 1)

Members	*Representing*
SHRI M. L. KAUL	Bharat Aluminium Co Ltd, New Delhi
LT-COL O. N. BHAN (*Alternate*)	
SHRI S. L. KHANNA	Ministry of Defence (DGI)
SHRI M. Y. BORKAR (*Alternate*)	
DR D. KUMAR	Malaviya Regional Engineering College, Jaipur
DR R. KUMAR	National Metallurgical laboratory (CSIR), Jamshedpur
DR MANJIT SINGH (*Alternate*)	
SHRI O. P. MATHUR	Electrical Manufacturing Co Ltd, Calcutta
SHRI L. MISHRA	Directorate General of Technical Development, New Delhi
SHRI U. MOHAN RAO	Bharat Heavy Electricals Ltd, Hyderabad
DR K. K. SEN GODAN (*Alternate*)	
SHRI K. R. RAGHUNATH	Jindal Aluminium Ltd, Bangalore
SHRI R. RAMDAS	India Government Mint (Ministry of Finance), Hyderabad
REPRESENTATIVE	Planning Commission, New Delhi
REPRESENTATIVE	Ministry of Steel and Mines
SHRI M. S. SESHADRI	Indian Pistons Ltd, Madras
SHRI D. H. SHAH	Jeewanlal (1929) Ltd, Calcutta
SHRI N. H. SHAH (*Alternate*)	
SHRI N. SHANMUGHAM	Madras Aluminium Co Ltd, Mettur Dam
SHRI B. A. SHENOI	Central Electrochemical Research Institute (CSIR), Karaikudi
SHRI P. S. DESIKAN (*Alternate*)	
SHRI K. M. TANEJA	Directorate General of Supplies & Disposals, New Delhi
SHRI S. B. GUPTA (*Alternate*)	
SHRI C. R. RAMA RAO, Director (Struc & Met)	Director General, ISI (*Ex-officio Member*)

Secretary

SHRI B. MUKHERJI
Deputy Director (Metals), ISI

Wrought Aluminium and Its Alloys Subcommittee, SMDC 10 : 3

Convener

SHRI V. K. AGRAWAL	Hindustan Aluminium Corporation Ltd, Renukoot, Dist Mirzapur

Members

SHRI V. D. AGARWAL	Aluminium Corporation of India Ltd, Calcutta
REPRESENTATIVE	Maharashtra State Road Transport Corporation, Bombay
SHRI A. K. HAJRA	Indian Aluminium Company Ltd, Calcutta
SHRI K. SURYANARAYANAN (*Alternate*)	
SHRI O. P. MATHUR	Electrical Manufacturing Co Ltd, Calcutta

(*Continued on page* 9)

Indian Standard

DIMENSIONS FOR WROUGHT ALUMINIUM AND ALUMINIUM ALLOYS, SHEET AND STRIP

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 24 April 1981, after the draft finalized by the Light Metals and Their Alloys Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was first published in 1964. In this revision, the tolerances have been modified in the light of the experience gained since its first publication. Requirements for squareness tolerance and additional standard lengths of 2 000 mm and 4 000 mm and additional standard widths of 1 000 mm and 1 500 mm for sheets have been included in this revision.

0.3 In the preparation of this standard, assistance has been derived from BS 1470 : 1972 Specification for Wrought Aluminium and Aluminium Alloys, Plate, Sheet and Strip issued by the British Standards Institution.

0.4 This standard should be used in conjunction with IS : 737-1974*.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down the dimensions and tolerances for wrought aluminium and aluminium alloys, sheet and strip.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

*Specification for wrought aluminium and aluminium alloys, sheet and strip (for general engineering purposes) (*second revision*).

†Rules for rounding off numerical values (*revised*).

2.1 Sheet — A product of rectangular section, over 0·15 mm but less than 6·0 mm thick. It may be prepared as strip and subsequently cut to length.

2.2 Strip — A cold-rolled product of rectangular section, supplied in coil, or flat form, over 0·15 mm thick but not exceeding 5·0 mm in thickness, with its length more than eight times its width.

3. DIMENSIONS

3.1 The standard thicknesses of sheets and strips shall be as given in the col 1 of Tables 5 and 6.

3.2 The standard lengths and widths of sheet shall be as follows:

Length mm		*Width* mm	*Length* mm		*Width* mm
1 800	×	600	3 600	×	900
1 800	×	900	3 600	×	1 000
1 800	×	1 000	3 600	×	1 200
1 800	×	1 200	3 600	×	1 500
2 000	×	600	4 000	×	900
2 000	×	900	4 000	×	1 000
2 000	×	1 000	4 000	×	1 200
2 000	×	1 200	4 000	×	1 500
2 000	×	1 500			
2 400	×	600			
2 400	×	900			
2 400	×	1 000			
2 400	×	1 200			
2 400	×	1 500			

3.3 Sheets and strips of sizes and thickness, other than standard sizes and thickness shall be supplied by mutual agreement between the manufacturer and the purchaser.

4. TOLERANCES

4.1 Shearing Tolerances — The shearing tolerances (general and fine) for sheets and strips shall be as given in Tables 1, 2, 3 and 4 respectively.

4.2 Thickness Tolerances — The tolerances, general and fine on thicknesses of sheets and strips shall be as given in Tables 5 and 6 respectively.

TABLE 1 SHEARING TOLERANCES (GENERAL) ON LENGTH AND WIDTH OF SHEET

(*Clause* 4.1)

All dimensions in millimetres.

THICKNESS	TOLERANCES ON LENGTH AND WIDTH			
	For Lengths up to and Including 1 000	For Lengths over 1 000 up to and Including 2 000	For Lengths over 2 000 up to and Including 3 000	For Lengths over 3 000 up to and Including 4 000
For all thicknesses of sheet, up to 6·0 mm	±3	±4	±5	±7

TABLE 2 SHEARING TOLERANCES (FINE) ON LENGTH AND WIDTH OF SHEET

(*Clause* 4.1)

All dimensions in millimetres.

THICKNESS	TOLERANCES ON LENGTH AND WIDTH			
	For Lengths up to and Including 1 000	For Lengths over 1 000 up to and Including 2 000	For Lengths over 2 000 up to and Including 3 000	For Lengths over 3 000 up to and Including 4 000
Up to and including 3·0 mm	±2	±3	±4	±7

TABLE 3 SHEARING TOLERANCES (GENERAL) ON WIDTH OF STRIP

(*Clause* 4.1)

All dimensions in millimetres.

THICKNESS		TOLERANCES ON WIDTH					
	Over→	6	100	400	600	900	1 200
	Up to and Including→	100	400	600	900	1 200	1 500
(1)		(2)	(3)	(4)	(5)	(6)	(7)
Up to and including 1·12		± 0·40	± 1·0	± 1·0	± 1·0	± 2·0	± 3·0
Over 1·12 up to and including 2·80		± 0·80	± 1·0	± 1·0	± 1·0	± 2·0	± 3·0
Over 2·80 up to and including 4·50		± 1·20	± 2·0	± 2·0	± 2·0	± 2·0	± 3·0
Over 4·50 up to and including 5·0		± 1·60	± 2·0	± 2·0	± 2·0	± 2·0	± 3·0

4.3 Squareness Tolerances for Sheets — The difference of the two diagonal distances between opposite corners of any sheet (AA — BB in Fig. 1) shall not exceed the total tolerance on the length of the sheet, that is, sum of positive and negative tolerance.

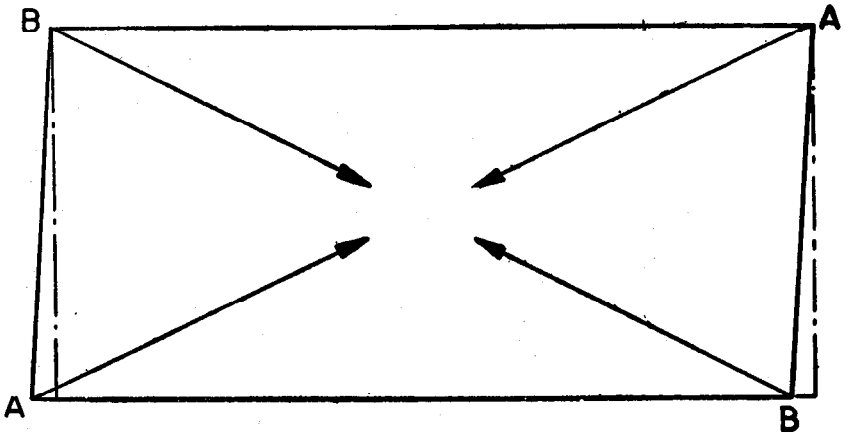


FIG. 1 TOLERANCES FOR SQUARENESS

TABLE 4 SHEARING TOLERANCES (FINE) ON WIDTH OF STRIP

(*Clause* 4.1)

All dimensions in millimetres.

THICKNESS		TOLERANCES ON WIDTH					
	Over→	6	100	400	600	900	1 200
	Up to and including→	100	400	600	900	1 200	1 500
(1)		(2)	(3)	(4)	(5)	(6)	(7)
Up to and including 1·12		± 0·20	± 0·5	± 0·5	± 0·5	± 1·0	±1·0
Over 1·12 up to and including 2·80		± 0·40	± 0·5	± 0·5	± 1·0	± 1·0	± 1·5
Over 2·80 up to and including 4·50		± 0·80	± 1·0	± 1·0	± 1·0	± 1·0	± 1·5
Over 4·50 up to and including 5·0		± 1·00	± 1·0	± 1·0	± 1·0	± 1·0	± 1·5

TABLE 5 TOLERANCES (GENERAL) ON THICKNESS OF SHEET AND STRIP

(*Clauses* 3.1 *and* 4.2)

All dimensions in millimetres.

THICKNESS	FOR WIDTH					
	Up to and including 1 000		Over 1 000 up to and including 1 200		Over 1 200 up to and including 1 500	
	Plus	Minus	Plus	Minus	Plus	Minus
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0·15	0·03	0·03	—	—	—	—
0·19	0·03	0·03	—	—	—	—
0·23	0·03	0·05	—	—	—	—
0·28	0·05	0·05	—	—	—	—
0·32	0·05	0·05	—	—	—	—
0·36	0·05	0·05	—	—	—	—
0·40	0·05	0·05	0·06	0·06	—	—
0·45	0·05	0·05	0·08	0·08	—	—
0·50	0·05	0·05	0·08	0·08	0·08	0·10
0·56	0·05	0·08	0·08	0 08	0·10	0·10
0·63	0·05	0·08	0·08	0·10	0·10	0·10
0·71	0·08	0·08	0·08	0·10	0·10	0·10
0·80	0·08	0·08	0·10	0·10	0·10	0·13
0·90	0·08	0·08	0·10	0·10	0·13	0·13
1·0	0·08	0·08	0·10	0·13	0·13	0·13
1·12	0·08	0·10	0·10	0·13	0·13	0·13
1·25	0·08	0·10	0·10	0·13	0·13	0·15
1·40	0·10	0·13	0·13	0·13	0·15	0·15
1·60	0·10	0·13	0·13	0·13	0·15	0·15
1·80	0·10	0·13	0·13	0·15	0·15	0·18
2·0	0·10	0·13	0·13	0·15	0·15	0·18
2·24	0·10	0·13	0·15	0·15	0·18	0·18
2·50	0·13	0·13	0·15	0·15	0·18	0·18
2·80	0·13	0·13	0·15	0·15	0·18	0·20
3·15	0·13	0·13	0·15	0·18	0·18	0·20
3·55	0·13	0·13	0·15	0·18	0·20	0·20
4·00	0·13	0·15	0·18	0·18	0·20	0·23
4·50	0·15	0·15	0·18	0·18	0·20	0·23
5·00	0·15	0·15	0·18	0·20	0·23	0·23
5·60	0·18	0·18	0·20	0·20	0·23	0·25

NOTE 1 — Thickness shall be measured not less than 15 mm from the edge of the sheet and strip.

NOTE 2 — The tolerances specified in this table are applicable as shown to all alloys except those with a Mg content of 4·0 percent or more. In the case of alloys with such a Mg content the total tolerances for widths up to 1 000 mm require to be increased by 0·02 mm and those for widths over 1 000 mm by 0·04 mm. In the tolerances shown above, the additions of 0·02 mm should be made to the minus side when the tolerances are equal, and to the plus side when they are unequal. The additions of 0·04 mm should be made by adding 0·02 mm to both the positive and negative side.

NOTE 3 — The tolerances for intermediate sizes shall be taken as for the next higher size in the table.

TABLE 6 TOLERANCES (FINE) ON THICKNESS OF SHEET AND STRIP

(*Clauses* 3.1 *and* 4.2)

All dimensions in millimetres.

THICKNESS	FOR WIDTH					
	Up to and including 1 000		Over 1 000 up to and including 1 200		Over 1 200 up to and including 1 500	
	Plus	Minus	Plus	Minus	Plus	Minus
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0·15	0·03	0·03	—	—	—	—
0·19	0·03	0·03	—	—	—	—
0·23	0·03	0·03	—	—	—	—
0·28	0·03	0·05	—	—	—	—
0·32	0·03	0·05	—	—	—	—
0·36	0·04	0·05	—	—	—	—
0·40	0·04	0·05	—	—	—	—
0·45	0·04	0·05	0·05	0·08	—	—
0·50	0·04	0·05	0·05	0·08	0·08	0·08
0·56	0·04	0·05	0·05	0·08	0·08	0·10
0·63	0·04	0·05	0·05	0·08	0·08	0·10
0·71	0·05	0·08	0·08	0·08	0·10	0·10
0·80	0·05	0·08	0·08	0·08	0·10	0·10
0·90	0·08	0·08	0·08	0·10	0·10	0·13
1·00	0·08	0·08	0·08	0·10	0·10	0·13
1·12	0·08	0·08	0·08	0·10	0·10	0·13
1·25	0·08	0·08	0·08	0·10	0·10	0·13
1·40	0·08	0·10	0·10	0·10	0·13	0·13
1·60	0·08	0·10	0·10	0·10	0·13	0·13
1·80	0·08	0·10	0·10	0·10	0·13	0·13
2·00	0·08	0·10	0·10	0·13	0·13	0·15
2·24	0·10	0·10	0·13	0·13	0·15	0·15
2·50	0·10	0·13	0·13	0·15	0·15	0·15
2·80	0·13	0·13	0·15	0·15	0·15	0·15
3·15	0·13	0·13	0·15	0·18	0·15	0·15
3·55	0·13	0·15	0·15	0·18	0·15	0·18
4·00	0·13	0·15	0·18	0·18	0·18	0·18
4·50	0·15	0·15	0·18	0·18	0·18	0·18
5·00	0·15	0·15	0·18	0·20	0·18	0·20
5·60	0·18	0·18	0·20	0·23	0·20	0·23
6·00	0·18	0·18	0·23	0·23	0·23	0·25

NOTE 1 — Thickness shall be measured not less than 15 mm from the edge of the sheet and strip.

NOTE 2 — The tolerances specified in this table are applicable as shown to all alloys except those with a Mg content of 4·0 percent or more. In the case of alloys with such a Mg content the total tolerances for widths up to 1 000 mm require to be increased by 0·02 mm and those for widths over 1 000 mm by 0·04 mm. In the tolerances shown above, the additions of 0·02 mm should be made to the minus side when the tolerances are equal, and to the plus side when they are unequal. The additions of 0·04 mm should be made by adding 0·02 mm to both the positive and negative side.

NOTE 3 — The tolerances for intermediate sizes shall be taken as for the next higher side in the table.

(*Continued from page* 2)

Members	*Representing*
SHRI S. K. MEHROTRA	Bharat Aluminium Co Ltd, Korba
SHRI D. MUKHERJEE (*Alternate*)	
SHRI M. S. S. MURTHY	Bharat Heavy Electricals Ltd, Bhopal
SHRI U. MOHAN RAO (*Alternate*)	
SHRI M. J. POOK	Premier Irrigation Equipment Ltd, Calcutta
REPRESENTATIVE	Integral Coach Factory, Perambur
REPRESENTATIVE	Research, Designs and Standards Organization, Lucknow
SHRI N. SHANMUGHAM	Madras Aluminium Co Ltd, Mettur Dam
SHRI K. R. RAGHUNATH	Jindal Aluminium Ltd, Bangalore
SHRI D. H. SHAH	Jeewanlal (1929) Ltd, Calcutta

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 331 01 31, 331 13 75 Telegrams: Manaksanstha (Common to all Offices)

Regional Offices:	*Telephone*
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	331 01 31 331 13 75
*Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola, CALCUTTA 700054	36 24 99
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	2 18 43 3 16 41
Southern : C. I. T. Campus, MADRAS 600113	41 24 42 41 25 19 41 29 16
†Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	6 32 92 95

Branch Offices:

'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMADABAD 380001	2 63 48 2 63 49
‡Peenya Industrial Area 1st Stage, Bangalore Tumkur Road BANGALORE 560058	38 49 55 38 49 56
Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, BHOPAL 462003	6 67 16
Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002	5 36 27
53/5, Ward No. 29, R.G. Barua Road, 5th Byelane, GUWAHATI 781003	3 31 77
5-8-56C L. N. Gupta Marg (Nampally Station Road), HYDERABAD 500001	23 10 83
R14 Yudhister Marg, C Scheme, JAIPUR 302005	6 34 71 6 98 32
117/418 B Sarvodaya Nagar, KANPUR 208005	21 68 76 21 82 92
Patliputra Industrial Estate, PATNA 800013	6 23 05
T.C. No. 14/1421, University P.O., Palayam TRIVANDRUM 695035	6 21 04 6 21 17

Inspection Offices (With Sale Point):

Pushpanjali, First Floor, 205-A West High Court Road, Shankar Nagar Square, NAGPUR 440010	2 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	5 24 35

*Sales Office in Calcutta is at 5 Chowringhee Approach, P. O. Princep Street, Calcutta 700072 — 27 68 00

†Sales Office in Bombay is at Novelty Chambers, Grant Road, Bombay 400007 — 89 65 28

‡Sales Office in Bangalore is at Unity Building, Narasimharaja Square, Bangalore 560002 — 22 36 71

Reprography Unit, BIS, New Delhi, India