IS 1136 (2008): Preferred sizes for wrought metal products
[MTD 4: Wrought Steel Products]

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IS 1136 : 2008
(Superseding IS 1137 : 1990)

भारतीय मानक

पिटवाँ धातु उत्पादों के लिए अधिमानित आकार

(तीसरा पुनरीक्षण)

Indian Standard

PREFERRED SIZES FOR WROUGHT METAL PRODUCTS

(Third Revision)

ICS 77.140.01, 77.150.01

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

September 2008

Price Group 3

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by Wrought Steel Products Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1959 and revised in 1967 and 1990. While reviewing this standard, in the light of experience gained during these years, the Committee decided to revise it to bring in line with the present manufacturing and trade practices being followed in the country, in this field.

In this revision the following changes have been made:

a) Wire and sheet metal gauges have been given for information (*see* Annex A); and
b) Requirements of IS 1137 : 1990 'Thicknesses of sheet and diameters of wire (*first revision*)' have been incorporated.

The revised standard shall supersede IS 1137.

The sizes covered in this standard are preferred sizes only. However, the sizes other than these may be mutually agreed between the manufacturer and the purchaser.

The composition of the Committee responsible for formulation of this standard is given in Annex B.

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 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PREFERRED SIZES FOR WROUGHT METAL PRODUCTS

(Third Revision)

1 SCOPE

This standard specifies the preferred sizes, in millimetres, of wrought metal products.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IS No.	*Title*
1076	Preferred numbers:
(Part 1) : 1985	Series of preferred numbers
(Part 2) : 1985	Guide to the use of preferred numbers and series of preferred numbers
(Part 3) : 1985	Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers

3 PREFERRED SIZES OF WROUGHT METAL PRODUCTS

3.1 Preferred sizes of wrought metal products are generally derived from the R 10, R 20 and R 40 series of preferred numbers [*see* IS 1076 (Part 1)]. The preferred sizes derived from the R 10 series (first choice) should be given preference over the sizes derived from the R 20 series (second choice). Likewise, the sizes derived from the R 20 series (second choice) should be given preference over the R 40 series (third choice).

3.2 The preferred sizes of wrought metal products in the range 0.010 mm to 1 000 mm are given in Table 1. Since, the series of preferred numbers are unlimited in both the directions, the preferred sizes in the other decimal ranges are obtained by multiplying the values in Table 1 by positive or integral powers of 10.

Table 1 Preferred Sizes of Wrought Metal Products
(*Clause* 3.2)

First Choice	Second Choice	Third Choice	First Choice	Second Choice	Third Choice
(1)	(2)	(3)	(1)	(2)	(3)
0.010 mm to 0.100 mm			**1.00 mm to 10.0 mm**		
0.010			1.0		
0.020				1.1	
0.030			1.2		
0.040					1.3
0.050				1.4	
0.060					1.5
	0.070		1.6		
0.080					1.7
	0.090			1.8	
0.100					1.9
0.10 mm to 1.00 mm			2.0		
0.10					2.1
	0.11			2.2	
0.12					2.4
	0.14		2.5		
0.16					2.6
	0.18			2.8	
0.20					3.0
	0.22		3.2		
0.25					3.4
	0.28			3.6	
		0.30			3.8
0.32			4.0		
		0.34			4.2
	0.36			4.5	
		0.38			4.8
0.40			5.0		
		0.42			5.3
	0.45			5.6	
		0.48			6.0
0.50			6.3		
		0.53		7.0	
	0.56				7.5
		0.60	8.0		
0.63					8.5
		0.75		9.0	
0.80					9.5
		0.85	10.0		
	0.90				
		0.95			
1.00					

Table 1 (*Concluded*)

First Choice	Second Choice	Third Choice	First Choice	Second Choice	Third Choice
(1)	(2)	(3)	(1)	(2)	(3)
10 mm to 100 mm			**10 mm to 100 mm**		
10					34
	11			36	
12					38
		13	40		
	14				42
		15		45	
16					48
		17	50		
	18				53
		19		56	
20					60
		21	63		
	22			70	
		24			75
25			80		
		26			85
	28			90	
		30			95
32			100		

First Choice	Second Choice	Third Choice	First Choice	Second Choice	Third Choice
(1)	(2)	(3)	(1)	(2)	(3)
100 mm to 1 000 mm			**100 mm to 1 000 mm**		
100					340
	110			360	
120					380
		130	400		
	140				420
		150		450	
160					480
		170	500		
	180				530
		190		560	
200					600
		210	630		
	220			700	
		240			750
250			800		
		260			850
	280			900	
		300			950
320			1000		

ANNEX A

(*Foreword*)

WIRE AND SHEET METAL GAUGES

A-1 In the metal industries, the word gauge has been used in various systems, or scales, for expressing the thickness of thin plates, sheet and strip, or the diameters of rod and wire. Specific diameters or thicknesses are denoted in gauge systems by certain numerals followed by the word gauge; for example, No. 12 gauge, or simply 12 gauge. Gauge numbers for flat products have been used only in connection with thin materials; that is, usually when the thickness was not more than ¼ inch (6.35 mm), although most gauge tables began at about ½ inch (12.7 mm), and one table began at double this value.

Table 2 shows the approximate thickness or diameter, in mm, for each gauge number adopted by the originators of the gauge.

Table 2 Wire and Sheet Metal Gauges

(*Clause* A-1)

Name of Gauge	Steel Wire Gauge or Washburn and Moen Wire Gauge	Music Wire Gauge	American Wire Gauge or Brown and Sharpe Gauge	New Birmingham Standard Sheet and Hoop Gauge	British Imperial or English Legal Standard Wire Gauge	Birmingham or Stubs' Iron Wire Gauge
	Steel W and M.W.G.	M.W.G.	A.W.G. B&S.G.	B.G.	S.W.G.	B.W.G.
Principal Use	Steel Wire Except Music Wire	Steel Music Wire	Non-ferrous Sheets and Wire	Iron and Steel Sheets and Hoops	Wire	Strips, Bands, Hoops and Wire
Gauge No.	**Diameter or Thickness, mm**					
7/0's	12.4	—	—	16.9	12.7	—
6/0's	11.7	0.102	14.7	15.9	11.8	—
5/0's	10.9	0.127	13.1	14.9	11.0	12.7
4/0's	10.0	0.152	11.7	13.8	10.2	11.5
3/0's	9.21	0.178	10.4	12.7	9.45	10.8
2/0's	8.41	0.203	9.27	11.3	8.84	9.65
0	7.79	0.229	8.25	10.1	8.23	8.64
1	7.19	0.254	7.35	8.97	7.62	7.62
2	6.67	0.279	6.54	7.99	7.01	7.21
3	6.19	0.305	5.83	7.12	6.40	6.58
4	5.72	0.330	5.19	6.35	5.89	6.05
5	5.26	0.356	4.62	5.65	5.38	5.59
6	4.88	0.406	4.12	5.03	4.88	5.16
7	4.50	0.457	3.66	4.48	4.47	4.57
8	4.11	0.508	3.26	3.99	4.06	4.19
9	3.77	0.559	2.91	3.55	3.66	3.76
10	3.43	0.610	2.59	3.18	3.25	3.40
11	3.06	0.660	2.30	2.83	2.95	3.05
12	2.68	0.737	2.05	2.52	2.64	2.77
13	2.32	0.787	1.83	2.24	2.34	2.41
14	2.03	0.838	1.63	1.99	2.03	2.11
15	1.83	0.889	1.45	1.78	1.83	1.83
16	1.59	0.940	1.29	1.59	1.63	1.65
17	1.37	0.991	1.15	1.41	1.42	1.47
18	1.21	1.04	1.02	1.26	1.22	1.24
19	1.04	1.09	0.912	1.12	1.02	1.07
20	0.884	1.14	0.812	0.996	0.914	0.889
21	0.805	1.19	0.723	0.886	0.813	0.813
22	0.726	1.24	0.644	0.794	0.711	0.711
23	0.655	1.30	0.573	0.707	0.610	0.635
24	0.584	1.40	0.511	0.629	0.559	0.559
25	0.518	1.50	0.455	0.560	0.508	0.508
26	0.460	1.60	0.405	0.498	0.457	0.457
27	0.439	1.70	0.361	0.443	0.417	0.406
28	0.411	1.80	0.321	0.397	0.376	0.356
29	0.381	1.90	0.286	0.353	0.345	0.330
30	0.356	2.03	0.255	0.312	0.315	0.305
31	0.335	2.16	0.227	0.279	0.295	0.254
32	0.325	2.29	0.202	0.249	0.274	0.229
33	0.300	2.41	0.180	0.221	0.254	0.203
34	0.264	2.54	0.160	0.196	0.234	0.178
35	0.241	2.69	0.143	0.175	0.213	0.127
36	0.229	2.84	0.127	0.155	0.193	0.102
37	0.216	3.00	0.113	0.137	0.173	—
38	0.203	3.15	0.101	0.122	0.152	—
39	0.190	3.30	0.0897	0.109	0.132	—
40	0.178	3.51	0.0799	0.0980	0.122	—

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Wrought Steel Products Sectional Committee, MTD 4

Organization	*Represntative(s)*
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Organization	*Represntative(s)*
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Tata Motors Limited, Pune	Shri J. D. Haridas Shri B. R. Galgali (*Alternate*)
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BIS Directorate General	Dr Shrimati Sneh Bhatla, Scientist 'F' & Head (MTD) [Representing Director General *(Ex-officio)*]

Member Secretary
Shri Deepak Jain
Scientist 'E' (MTD), BIS

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Review of Indian Standards

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