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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 388

ISO METRIC SERIES FOR BASIC THICKNESSES OF SHEET AND DIAMETERS OF WIRE

1st EDITION

October 1964

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 388, *International Metric Series for Basic Thicknesses of Sheet and Diameters of Wire*, was drawn up by Technical Committee ISO/TC 62, *Sheet and Wire Gauges (Designation of Diameters and Thicknesses)*, the Secretariat of which is held by the Standards Association of Australia (SAA).

Work on this question by the Technical Committee began in 1953 and led, in 1959, to the adoption of a Draft ISO Recommendation.

In November 1959, this Draft ISO Recommendation (No. 324) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies:

Australia	Hungary	Portugal
Burma	India	Romania
Chile	Italy	Sweden
Czechoslovakia	Japan	United Kingdom
Finland	Netherlands	U.S.S.R.
France	New Zealand	Yugoslavia
Germany	Norway	
Greece	Poland	

One Member Body opposed the approval of the Draft:

U.S.A.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in October 1964, to accept it as an ISO RECOMMENDATION.

FOREWORD

The designation of thicknesses of sheet and diameters of wire by arbitrary gauge numbers has long been recognised as presenting difficulties because of the multiplicity of gauge systems currently in use, and because the significance of gauge numbers may, in fact, vary from industry to industry and from country to country.

The purpose of this ISO Recommendation is to provide a basic set of sizes (in millimetres) for thicknesses of sheet and for diameters of wire, to replace existing gauge systems. The nominal size of a sheet thickness or a wire diameter is the basic size as given in the tabulation.

It is contemplated that, where a specification for sheet or wire lays down standard thicknesses or diameters, the sizes given should be a selection from the series of basic sizes given in this ISO Recommendation, such selection taking account of the thicknesses or diameters appropriate to the product in question and of the extent of size differentiation appropriate to its manufacture and application. Attention is drawn to the note to the Table of Basic Sizes, recommending that, in the selection of sizes, preference should be given to the R 10, R 20 and R 40 series, in that order. In particular, the use of the R 40 series is to be avoided, except where application requires fine differentiation of sizes.

ISO Recommendation R 388 October 1964

ISO METRIC SERIES FOR BASIC THICKNESSES OF SHEET AND DIAMETERS OF WIRE

1. The ISO metric series for the basic thicknesses of sheet and diameters of wire is established on the series of preferred numbers set out in ISO Recommendation R 3—*Preferred numbers. Series of preferred numbers.* See Table, pages 6 and 7.

2. The range of sizes is from 0.020 to 25 mm.

3. In selecting sizes, preference should be given to sizes in the R 10, R 20 and R 40 series, in that order.

4. The method of designating the thickness of sheet or diameter of wire is to be by stating the basic size in millimetres followed, if desired, by the letter U to indicate that this size belongs to the ISO metric series.

NOTE. — The equivalent inch values for sizes above 0.25 mm are given to an accuracy close to, or better than, one part in one thousand. This accuracy would be appropriate to practical limits of size associated with a tolerance of ± 1 per cent of the size. For sizes smaller than 0.25 mm, five places of decimals appear adequate for any likely method of direct measurement in inches. The true millimetre basic sizes should be used, if it is desired to compute limits of size in any alternative characteristic, such as mass or electrical resistance.

TABLE OF BASIC SIZES

NOTE. — Preference should be given to sizes in the R 10, R 20 and R 40 series, in that order.

Basic sizes (millimetres)			Equivalent sizes * (for information) (inches)
R 10	R 20	R 40	
			0.003 94
		0.106	0.004 17
	0.112	0.112	0.004 41
		0.118	0.004 65
0.125	0.125	0.125	0.004 92
		0.132	0.005 20
	0.140	0.140	0.005 52
		0.150	0.005 91
0.160	0.160	0.160	0.006 30
		0.170	0.006 69
	0.180	0.180	0.007 09
		0.190	0.007 48
0.200	0.200	0.200	0.007 87
		0.212	0.008 35
	0.224	0.224	0.008 82
		0.236	0.009 29
0.250	0.250	0.250	0.009 84
		0.265	0.010 43
	0.280	0.280	0.011 02
		0.300	0.011 81
0.315	0.315	0.315	0.012 40
		0.335	0.013 19
	0.355	0.355	0.013 98
		0.375	0.014 76
0.400	0.400	0.400	0.015 75
		0.425	0.016 73
	0.450	0.450	0.017 72
		0.475	0.018 70
0.500	0.500	0.500	0.019 69
		0.530	0.020 87
	0.560	0.560	0.022 05
		0.600	0.023 62
0.630	0.630	0.630	0.024 80
		0.670	0.026 38
	0.710	0.710	0.027 95
		0.750	0.029 53
0.800	0.800	0.800	0.031 50
		0.850	0.033 46
	0.900	0.900	0.035 43
		0.950	0.037 40
1.000	1.000	1.000	0.039 40
		1.060	0.041 73
	1.120	1.120	0.044 09
		1.180	0.046 46
1.250	1.250	1.250	0.049 21
		1.320	0.051 97
	1.400	1.400	0.055 12
		1.500	0.059 06
1.600	1.600	1.600	0.062 99
		1.700	0.066 93
	1.800	1.800	0.070 87
		1.900	0.074 80
2.000	2.000	2.000	0.078 74
		2.120	0.083 46
	2.240	2.240	0.088 19
		2.360	0.092 91
2.500	2.500	2.500	0.098 43
		2.650	0.104 33
	2.800	2.800	0.110 24
		3.000	0.118 11
3.150	3.150	3.150	0.124 01
		3.350	0.131 89
	3.550	3.550	0.139 76
		3.750	0.147 64
4.000	4.000	4.000	0.157 48
		4.250	0.167 32
	4.500	4.500	0.177 17
		4.750	0.187 01
5.000	5.000	5.000	0.196 85
		5.300	0.208 66
	5.600	5.600	0.220 47
		6.000	0.236 22
6.300	6.300	6.300	0.248 03
		6.700	0.263 78
	7.100	7.100	0.279 53
		7.500	0.295 27
8.000	8.000	8.000	0.314 96
		8.500	0.334 65
	9.000	9.000	0.354 33
		9.500	0.374 02
10.000	10.000	10.000	0.393 70

* See note to text.