

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

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Printed in Switzerland

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

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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 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.

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	
0.020	0.020	0.020	0.000 79
		0.021	0.000 83
		0.022	0.000 87
		0.024	0.000 94
0.025	0.025	0.025	0.000 98
		0.026	0.001 02
		0.028	0.001 10
0.032	0.032	0.030	0.001 18
		0.032	0.001 26
		0.034	0.001 34
		0.036	0.001 42
0.040	0.040	0.038	0.001 50
		0.040	0.001 58
		0.042	0.001 65
		0.045	0.001 77
0.050	0.050	0.048	0.001 89
		0.050	0.001 97
		0.053	0.002 09
		0.056	0.002 20
0.063	0.063	0.060	0.002 36
		0.063	0.002 40
		0.067	0.002 64
		0.071	0.002 80
0.080	0.080	0.075	0.002 95
		0.080	0.003 15
		0.085	0.003 35
		0.090	0.003 54
0.100	0.100	0.095	0.003 74
		0.100	0.003 94

* See note to text.