

Guide to

Choice of aperture size and wire diameter combinations for industrial wire screens and woven wire cloth —

Part 1: General

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the General Mechanical Engineering Standards Policy Committee (GME/-) to Technical Committee GME/29, upon which the following bodies were represented:

- BCIRA
- British Cement Association
- British Coal Corporation
- British Laboratory Ware Association
- Guild of Metal Perforators
- Institution of Chemical Engineers
- Institution of Mining and Metallurgy
- National Association of British and Irish Millers
- Ministry of Defence
- Society of Chemical Industry
- Society of Cosmetic Scientists
- Woven Wire Association
- Coopted members

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Aggregate Construction Materials Industries
- British Steel Industry (Wire Section)
- National Federation of Clay Industries
- Refractories Association of Great Britain

This British Standard, having been prepared under the direction of the General Mechanical Engineering Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 28 February 1991

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The following BSI references relate to the work on this standard:
Committee reference GME/29
Draft for comment 88/72089 DC

ISBN 0 580 19013 7

Amendments issued since publication

Amd. No.	Date	Comments

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National foreword

This Part of BS 7372 has been prepared under the direction of the General Mechanical Engineering Standards Policy Committee and is identical with ISO 4783-1:1989 “*Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations — Part 1: Generalities*”, published by the International Organization for Standardization (ISO). ISO 4783-1 was prepared by Technical Committee 24 of ISO and the UK took an active part in its preparation.

ISO 4783-1:1989 (the second edition) superseded ISO 4783:1981 and constituted a minor revision of it.

BS 7372 consists of the following parts:

- *Part 1: General*;
- *Part 2: Preferred combinations for woven wire cloth*.

These two Parts supersede BS 481-1:1971, which is withdrawn.

When ISO 4783-3:1981 “*Preferred combinations for pre-crimped or pressure-welded wire screens*” has been revised it will be considered for implementation as a British Standard to supersede BS 481-2:1972.

Cross-reference

International standard	Corresponding British Standard
ISO 3:1973	BS 2045:1965 Preferred numbers (Technically equivalent)
ISO 497:1973	

Related British Standards to ISO 2194:1972 are BS 410:1986 “*Specification for test sieves*” and BS 481 “*Specification for industrial wire mesh*” — Part 2:1972 “*High tensile steel wire mesh with square apertures from 125 mm to 2 mm*”. There is no British Standard corresponding to ISO 4782.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This part of ISO 4783 tabulates combinations of aperture sizes and wire diameters for industrial wire screens and woven wire cloth. It provides thereby a comprehensive range from which preferred groups of combinations may be chosen.

The percentage open area A_o of each aperture/wire combination is stated to assist in assessing a combination for screening purposes.

ISO 4783-2 gives the preferred combinations for woven wire cloth, and ISO 4783-3 the preferred combinations for pre-crimped or pressure-welded wire screens.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 4783. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4783 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3:1973, *Preferred numbers — Series of preferred numbers*.

ISO 497:1973, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers*.

ISO 2194:1972, *Wire screens and plate screens for industrial purposes — Nominal sizes of apertures*.

ISO 4782:1987, *Metal wire for industrial wire screens and woven wire cloth*.

3 Designation

Industrial wire screens and woven wire cloth shall be designated in the following sequence by

- a) width of aperture w ;
- b) diameter of wire d ;
- c) material of wire;
- d) type of weave (see ISO 4783-2) or type of crimp (see ISO 4783-3).

4 Aperture size and wire diameter combinations

For each width of aperture, Table 1 gives a number of associated diameters of wire and states the corresponding approximate percentage open area of the wire screen. Selections taken from this list may supply additional data such as mass per unit area (see clause 5) or mesh count per unit length (see clause 6). The open area may be calculated, as a percentage, from the formula

$$A_o = 100 \left(\frac{w}{w + d} \right)^2$$

where

A_o is the open area, in percentage;

w is the width of the aperture, in millimetres;

d is the diameter of the wire, in millimetres.

Table 1 — Aperture size and wire diameter combinations

Open area A_o %	Width of aperture w , mm															A_o
	125				100				80				63			
	125		112		100		90		80		71		63		56	
	125	118	112	106	100	95	90	85	80	75	71	67	63	60	56	
Diameter of wire d , mm																A_o
86	10,0															
85		10,0														
84	11,2		10,0	10,0				8,00				6,30		5,60		
83	12,5	11,2	11,2		10,0	9,00	9,00		8,00	7,10	7,10		6,30		5,60	83
82		12,5		11,2		10,0		9,00		8,00		7,10		6,30		82
81	14,0		12,5		11,2		10,0		9,00		8,00		7,10		6,30	81
80		14,0		12,5		11,2		10,0		9,00		8,00		7,10		80
79	16,0		14,0		12,5		11,2		10,0		9,00		8,00		7,10	79
78		16,0		14,0		12,5		11,2		10,0		9,00		8,00		78
77			16,0		14,0		12,5		11,2		10,0		9,00		8,00	77
76	18,0					14,0		12,5		11,2		10,0		9,00		76
75		18,0		16,0			14,0		12,5		11,2					75
74	20,0		18,0		16,0			14,0					10,0		9,00	74
73		20,0		18,0		16,0				12,5		11,2		10,0		73
72	22,4		20,0		18,0		16,0		14,0		12,5		11,2		10,0	72
71		22,4		20,0		18,0		16,0		14,0		12,5		11,2		71
70											14,0		12,5			70
69	25,0		22,4				18,0		16,0						11,2	69
68		25,0		22,4		20,0		18,0		16,0		14,0		12,5		68
67			25,0		22,4		20,0		18,0		16,0		14,0		12,5	67
66								20,0						14,0		66
65				25,0		22,4				18,0		16,0				65
64					25,0		22,4		20,0		18,0		16,0		14,0	64
63																63
62										20,0		18,0		16,0		62
61											20,0					61
60													18,0		16,0	60
59																59