BRITISH STANDARD

BS 7372-2: 1991
ISO 4783-2: 1989

Guide to

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

Part 2: Preferred combinations for woven wire cloth

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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Contents

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 4783-2:1989 *"Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations — Part 2: Preferred combinations for woven wire cloth"*, published by the International Organization for Standardization (ISO). ISO 4783-2 was prepared by Technical Committee 24 of ISO and the UK took an active part in its preparation.

ISO 4783-2:1989 (the second edition) superseded ISO 4783-2:1981 (the first edition) and constituted a minor revision of it.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These two Parts supersede BS 481-1:1971, which is withdrawn.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 481-2:1983.

Cross-reference

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

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 8, 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 preferred combinations of aperture size and wire diameter for industrial woven wire cloth which are taken from the general list of aperture/wire combinations given in ISO 4783-1.

It applies to woven wire cloth of aperture size from 16 mm to 0,02 mm.

NOTE This is the first International Standard on woven wire cloth for industrial purposes; these specifications are a compromise which takes account of existing national standards. ISO Member Bodies are earnestly requested to rationalize further in order to reduce the number of wire diameters per aperture width within the next five years without excluding the option of increasing the number of preferred apertures.

ISO 4783-3 gives 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 listed 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

Woven wire cloth for industrial purposes 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 Figure 2).

4 Aperture size and wire diameter combinations

Table 1 lists the preferred combinations of aperture size and wire diameter for woven wire cloth and states the open area A_o and the mass per square metre, ϱ_A, for each combination.

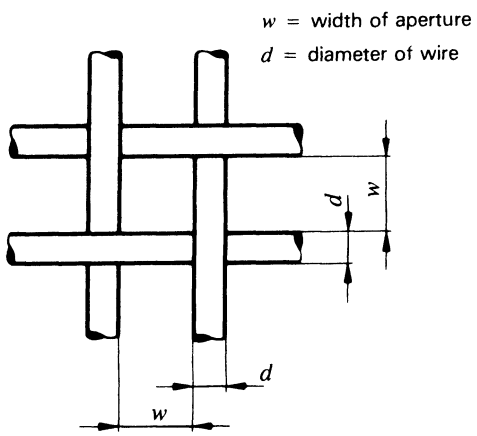

Figure 1 — Width of aperture and diameter of wire

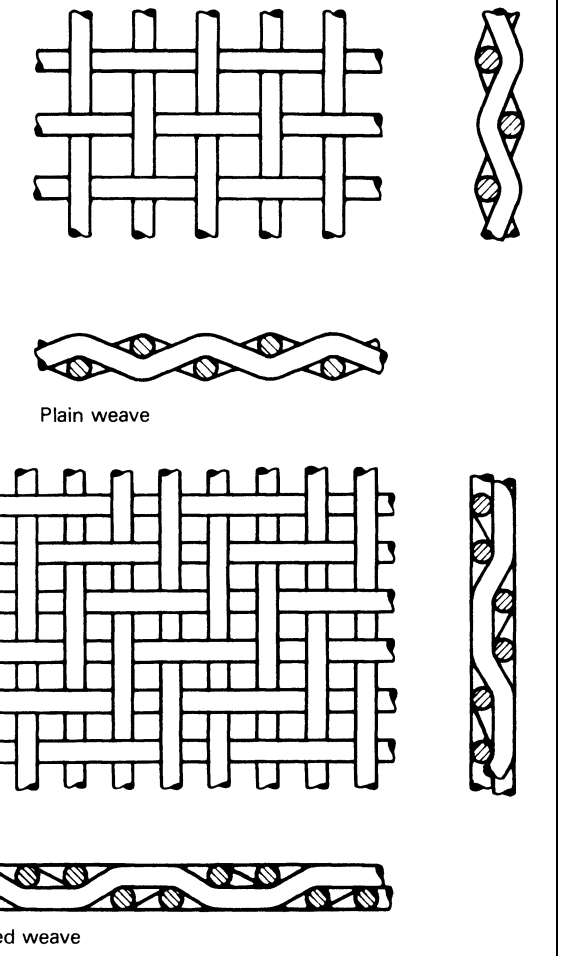

Figure 2 — Types of weave

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire	Open area	Mass[a] per unit area
R 10 w mm	R 20 w mm	R 40/3 w mm	d mm	A_o %	ϱ_A kg/m^2
16	16	16	1,60	83	1,85
			1,80	81	2,31
			2,00	79	2,82
			2,24	77	3,49
			3,15	70	6,58
			3,55	67	8,19
	14		1,40	83	1,62
			1,80	79	2,60
			2,24	74	3,92
			2,80	69	5,93
		13,2	2,80	68	6,22
12,5	12,5		1,25	83	1,44
			1,60	79	2,31
			1,80	76	2,88
			2,00	74	3,50
			2,24	72	4,31
			2,80	67	6,51
	11,2	11,2	1,12	83	1,29
			1,25	81	1,59
			1,40	79	1,98
			1,80	74	3,17
			2,00	72	3,85
			2,24	69	4,74
			2,50	67	5,79
			2,80	64	7,11
			3,15	61	8,78
			3,55	57	10,58
10	10		1,12	81	1,43
			1,40	77	2,18
			1,60	74	2,80
			1,80	72	3,49
			2,00	69	4,23
			2,50	64	6,35
		9,5	1,40	76	2,28
			1,80	71	3,64
			2,00	68	4,42
			2,24	65	5,43
			2,50	63	6,61
			2,80	60	8,09
			3,15	56	9,96
			3,55	53	12,27
	9		1,00	81	1,27
			1,25	77	1,94
			1,40	75	2,39
			1,60	73	3,07
			1,80	69	3,81
			2,24	64	5,67
8	8	8	1,00	79	1,41
			1,25	75	2,15
			1,40	72	2,65
			1,60	69	3,39
			1,80	67	4,20
			2,00	64	5,08
			2,24	61	6,22
			2,50	58	7,56
			2,80	55	9,22
	7,1		0,900	79	1,29
			1,12	75	1,94
			1,25	72	2,38
			1,40	70	2,93
			1,60	67	3,74
			1,80	64	4,62
			2,00	61	5,58
		6,7	1,80	62	4,84
			3,15	46	12,80
6,3	6,3		0,800	79	1,14
			1,00	74	1,74
			1,12	72	2,15
			1,40	67	2,23
			1,80	60	5,08
			2,00	58	6,12
			2,24	54	7,46
			2,50	51	9,02
			2,80	48	10,94
			3,15	44	13,34
	5,6	5,6	0,710	79	1,01
			0,800	77	1,27
			0,900	74	1,58
			1,12	69	2,37
			1,25	67	2,90
			1,40	64	3,56
			1,60	60	4,52
			1,80	57	5,56
			2,24	51	8,13
5	5		0,710	77	1,12
			0,900	72	1,74
			1,00	69	2,12
			1,25	64	3,18
			1,40	61	3,89
			1,60	57	4,93
			1,80	54	6,05
			2,00	51	7,26
			2,24	48	8,80
			2,50	44	10,58
			2,80	41	12,77

[a] For plain steel wire, ϱ = 7 850 kg/m^3 (see clause **5**).

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire	Open area	Mass[a] per unit area
R 10 w mm	R 20 w mm	R 40/3 w mm	d mm	A_o %	ϱ_A kg/m^2
		4,75	0,900	71	1,82
			1,25	63	3,31
			1,40	60	4,05
			1,60	56	5,12
			1,80	53	6,28
			2,00	50	7,53
			2,24	46	9,12
			2,50	43	10,95
			2,80	40	13,19
	4,5		0,630	77	0,98
			0,800	72	1,53
			0,900	69	1,91
			1,00	67	2,31
			1,12	64	2,83
			1,25	61	3,45
			1,40	58	4,22
			1,60	54	5,33
			1,80	51	6,53
			2,00	48	7,82
			2,24	45	9,46
4	4	4	0,560	77	0,87
			0,630	75	1,09
			0,710	72	1,36
			0,900	67	2,10
			1,00	64	2,54
			1,12	61	3,11
			1,25	58	3,78
			1,40	55	4,61
	3,55		0,500	77	0,78
			0,560	75	0,97
			0,630	72	1,21
			0,800	67	1,87
			0,900	64	2,31
			1,00	61	2,79
			1,12	58	3,41
			1,25	55	4,13
		3,55	0,560	73	1,02
			0,900	62	2,42
			1,25	53	4,31
3,15	3,15		0,450	77	0,71
			0,500	74	0,87
			0,560	72	1,07
			0,710	67	1,66
			0,800	64	2,05
			0,900	60	2,54
			1,12	54	3,73
			1,25	51	4,51
	2,8	2,8	0,450	74	0,79
			0,500	72	0,96
			0,560	69	1,19
			0,710	64	1,82
			0,800	60	2,26
			0,900	57	2,78
			1,12	51	4,06
			1,60	40	7,39
			1,80	37	8,95
			2,00	34	10,85
2,5	2,5		0,400	74	0,70
			0,450	72	0,87
			0,500	69	1,06
			0,630	64	1,61
			0,710	61	1,99
			0,800	57	2,46
			0,900	54	3,08
			1,00	51	3,63
		2,36	0,800	56	2,57
			1,00	49	3,78
			1,80	32	9,89
	2,24		0,355	75	0,62
			0,400	72	0,77
			0,450	69	0,96
			0,560	64	1,42
			0,630	61	1,76
			0,710	58	2,17
			0,900	51	3,28
2	2	2	0,315	74	0,60
			0,400	69	0,85
			0,560	61	1,56
			0,630	58	1,92
			0,710	54	2,36
			0,900	48	3,55
			1,00	44	4,23
			1,25	38	6,11
			1,60	31	9,03
	1,8		0,315	72	0,60
			0,355	70	0,74
			0,400	67	0,92
			0,500	61	1,38
			0,560	58	1,69
			0,630	55	2,07
			0,800	48	3,13
		1,7	0,400	66	0,97
			0,630	53	2,16
			0,800	46	3,25
			1,12	36	5,65
			1,40	30	8,03

[a] For plain steel wire, ϱ = 7 850 kg/m^3 (see clause **5**).

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire	Open area	Mass[a] per unit area
R 10 w mm	R 20 w mm	R 40/3 w mm	d mm	A_o %	ϱ_A kg/m^2
1,6	1,6		0,280	72	0,53
			0,315	70	0,66
			0,355	67	0,82
			0,450	61	1,25
			0,500	58	1,51
			0,560	55	1,84
			0,630	51	2,26
			0,710	48	2,77
			0,800	44	3,39
			1,00	38	4,88
		1,4	0,250	72	0,48
			0,315	67	0,73
			0,450	57	1,39
			0,560	51	2,03
			0,630	48	2,48
			0,710	44	3,03
			0,900	37	4,47
			1,25	28	7,49
1,25	1,25		0,250	69	0,53
			0,280	67	0,65
			0,315	64	0,81
			0,400	57	1,23
			0,500	51	1,81
			0,560	48	2,20
			0,630	44	2,68
			0,800	37	3,96
		1,18	0,450	52	1,58
			0,630	43	2,78
			0,800	36	4,11
			1,00	29	5,83
	1,12		0,250	67	0,58
			0,315	61	0,88
			0,355	58	1,09
			0,400	54	1,34
			0,450	51	1,64
			0,560	44	2,37
			1,00	31	5,64
1	1	1	0,224	67	0,52
			0,250	64	0,64
			0,280	61	0,78
			0,315	58	0,96
			0,355	54	1,18
			0,400	51	1,45
			0,450	48	1,77
			0,500	44	2,12
			0,560	41	2,55
			0,710	34	3,74
			0,900	28	5,41
	0,9		0,200	67	0,46
			0,224	64	0,57
			0,250	61	0,69
			0,315	55	1,04
			0,355	51	1,28
			0,400	48	1,56
			0,450	45	1,91
			0,500	41	2,27
		0,85	0,355	50	1,33
			0,400	44	1,63
			0,500	40	2,35
			0,630	33	3,41
			0,800	27	4,93
0,8	0,8		0,200	64	0,51
			0,250	58	0,76
			0,280	55	0,92
			0,315	51	1,13
			0,355	48	1,39
			0,450	41	2,06
			0,500	38	2,44
	0,71	0,71	0,180	64	0,46
			0,200	61	0,56
			0,250	55	0,83
			0,280	51	1,01
			0,315	48	1,23
			0,355	44	1,50
			0,450	37	2,22
			0,560	31	3,14
0,63	0,63		0,160	64	0,41
			0,180	60	0,51
			0,224	54	0,75
			0,250	51	0,90
			0,280	48	1,09
			0,315	44	1,33
			0,400	37	1,97
		0,6	0,280	46	1,13
			0,400	36	2,03
			0,450	33	2,45

[a] For plain steel wire, ϱ = 7 850 kg/m^3 (see clause **5**).

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire	Open area	Mass[a] per unit area
R 10 w mm	R 20 w mm	R 40/3 w mm	d mm	A_o %	ϱ_A kg/m^2
	0,56		0,160	60	0,45
			0,224	51	0,81
			0,280	44	1,19
			0,355	37	1,75
0,5	0,5	0,5	0,140	61	0,39
			0,160	57	0,49
			0,200	51	0,73
			0,224	48	0,88
			0,250	44	1,06
			0,280	41	1,28
			0,315	38	1,55
			0,355	34	1,87
			0,400	31	2,26
	0,45		0,140	58	0,42
			0,200	48	0,78
			0,250	41	1,13
			0,280	38	1,36
			0,315	35	1,65
		0,425	0,200	46	0,81
			0,280	36	1,41
			0,355	30	2,05
0,4	0,4	.	0,125	58	0,38
			0,180	48	0,71
			0,224	41	1,02
			0,250	38	1,22
			0,280	35	1,46
	0,355	0,355	0,125	55	0,41
			0,140	51	0,50
			0,180	44	0,77
			0,200	41	0,92
			0,224	38	1,10
			0,250	34	1,31
			0,280	31	1,57
			0,315	28	1,88
			0,355	25	2,25
0,315	0,315		0,112	54	0,37
			0,160	44	0,69
			0,200	37	0,99
			0,250	31	1,40
		0,3	0,160	43	0,71
			0,200	36	1,02
			0,224	33	1,18
			0,250	30	1,44
	0,28		0,100	54	0,33
			0,112	51	0,41
			0,140	44	0,59
			0,160	40	0,74
			0,180	37	0,89
			0,224	31	1,26
0,25	0,25	0,25	0,100	51	0,36
			0,125	44	0,53
			0,140	41	0,64
			0,160	37	0,79
			0,180	34	0,96
			0,200	31	1,13
	0,224		0,090	51	0,33
			0,100	48	0,39
			0,125	41	0,57
			0,160	34	0,85
			0,180	31	1,02
		0,212	0,100	46	0,41
			0,140	36	0,71
			0,160	32	0,87
0,2	0,2		0,080	51	0,29
			0,090	48	0,35
			0,112	41	0,51
			0,125	38	0,61
			0,140	35	0,73
			0,160	31	0,90

[a] For plain steel wire, ϱ = 7 850 kg/m^3 (see clause **5**).

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire	Open area	Mass[a] per unit area
R 10 w mm	R 20 w mm	R 40/3 w mm	d mm	A_o %	ϱ_A kg/m^2
	0,18	0,18	0,080	48	0,31
			0,090	44	0,38
			0,112	38	0,55
			0,125	35	0,65
			0,140	32	0,78
0,16	0,16		0,071	48	0,28
			0,100	38	0,49
			0,112	35	0,59
			0,125	32	0,70
		0,15	0,063	50	0,24
			0,080	43	0,36
			0,100	36	0,51
			0,112	33	0,61
	0,14		0,063	48	0,25
			0,090	37	0,45
			0,100	34	0,53
			0,112	31	0,63
0,125	0,125	0,125	0,056	48	0,22
			0,063	44	0,27
			0,080	37	0,40
			0,090	34	0,48
			0,100	31	0,56
	0,112		0,056	44	0,24
			0,071	38	0,35
			0,080	34	0,42
			0,090	31	0,51
		0,106	0,050	46	0,20
			0,056	43	0,25
			0,063	39	0,30
			0,071	36	0,36
			0,080	31	0,45
0,1	0,1		0,050	44	0,21
			0,063	38	0,31
			0,071	34	0,37
			0,080	31	0,40
	0,09	0,09	0,040	48	0,16
			0,045	44	0,19
			0,050	41	0,23
			0,056	38	0,27
			0,063	35	0,33
			0,071	31	0,40
0,08	0,08		0,040	44	0,17
			0,045	41	0,21
			0,050	38	0,24
			0,056	35	0,29
			0,063	31	0,35
		0,075	0,036	46	0,15
			0,040	43	0,18
			0,050	36	0,25
			0,056	33	0,30
	0,071		0,040	41	0,18
			0,045	38	0,22
			0,050	34	0,26
			0,056	31	0,31
0,063	0,063	0,063	0,036	41	0,17
			0,040	37	0,20
			0,045	34	0,24
			0,050	31	0,28
	0,056		0,032	41	0,15
			0,036	37	0,18
			0,040	34	0,21
			0,045	31	0,26
		0,053	0,036	36	0,19
			0,040	33	0,22
0,05	0,05		0,028	41	0,13
			0,030	39	0,14
			0,032	37	0,16
			0,036	34	0,19
			0,040	31	0,23

[a] For plain steel wire, ϱ = 7 850 kg/m^3 (see clause **5**).

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire	Open area	Mass[a] per unit area
R 10 w mm	R 20 w mm	R 40/3 w mm	d mm	A_o %	ϱ_A kg/m^2
	0,045	0,045	0,032	34	0,17
			0,036	31	0,20
0,04	0,04		0,025	38	0,12
			0,030	33	0,16
			0,032	31	0,18
		0,038	0,025	36	0,13
			0,030	30	0,17
	0,036		0,028	32	0,16
			0,030	30	0,17
0,032	0,032	0,032	0,025	32	0,14
			0,028	28	0,17
0,025	0,025		0,022	28	0,13
			0,025	26	0,16
0,02	0,02		0,020	25	0,13

[a] For plain steel wire, ϱ = 7 850 kg/m^3 (see clause **5**).

5 Mass per unit area

The mass per unit area, ϱ_A, of an industrial wire screen or woven wire cloth is given, in kilograms per square metre, by the formula

$$\varrho_A = \frac{d^2\varrho}{618{,}1\,(w + d)}$$

where

d is the diameter of wire, in millimetres;

w is the width of aperture, in millimetres;

ϱ is the material density, in kilograms per cubic metre.

Values for ϱ shall be taken from Table 2.

Table 2 — Material densities

Material	Density ϱ kg/m^3
Plain steel	7 850
Carbon steel	7 850
Stainless steel (17–19 % Cr, 8–10 % Ni)	7 900
Aluminium (AlMg5)	2 700
Copper	8 900
Brass (CuZn37)	8 450
Brass (CuZn20)	8 650
Brass (CuZn10)	8 800
Nickel	8 900
Nickel-copper (NiCu 30 Fe)	8 830
Copper-tin (CuSn6) (Phosphor-bronze)	8 800

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Publication(s) referred to

See national foreword.

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