

INTERNATIONAL STANDARD

ISO
4783-2

Second edition
1989-04-15

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

*Tamis et tissus métalliques industriels — Guide pour le choix des combinaisons
d'ouverture de maille et de diamètre du fil —*

Partie 2 : Combinaisons préférentielles pour tissus non préformés



Reference number
ISO 4783-2 : 1989 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4783-2 was prepared by Technical Committee ISO/TC 24, *Sieves, sieving and other sizing methods*.

This second edition cancels and replaces the first edition (ISO 4783-2 : 1981), of which it constitutes a minor revision.

ISO 4783 consists of the following parts, under the general title *Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations* :

- *Part 1: Generalities*
- *Part 2: Preferred combinations for woven wire cloth*
- *Part 3: Preferred combinations for pre-crimped or pressure-welded wire screens*

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

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.

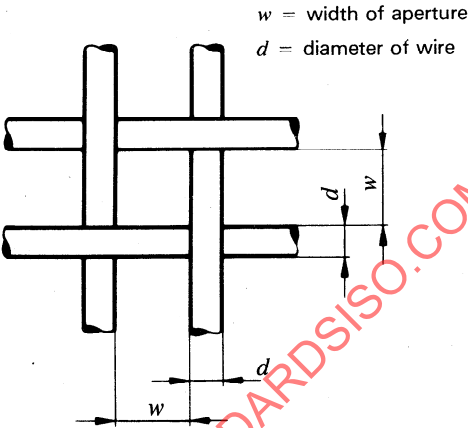


Figure 1 — Width of aperture and diameter of wire

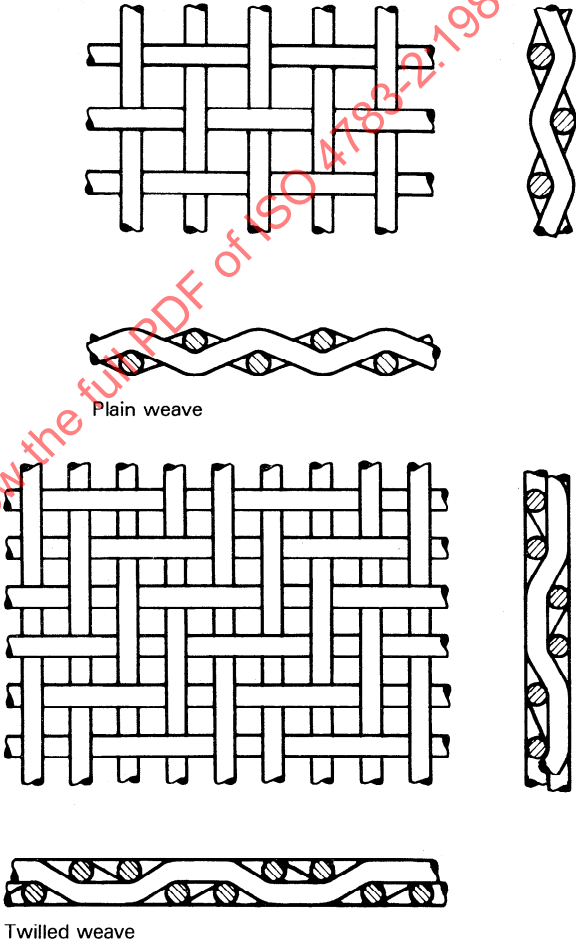


Figure 2 — Types of weave

Table 1 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	Mass ¹⁾ per unit area <i>ρ_A</i> kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
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
			1,00	81	1,27
			1,25	77	1,94
			1,40	75	2,39
			1,60	73	3,07
8	8	8	1,80	69	3,81
			2,24	64	5,67
			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

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	Mass ¹⁾ per unit area <i>ρ_A</i> kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
	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
		6,7	2,00	61	5,58
			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
			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
		4,75	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

1) For plain steel wire, $\rho = 7\,850\text{ kg/m}^3$ (see clause 5).

Table 1 — Preferred aperture size and wire diameter combinations (continued)

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A</i> _o %	Mass ¹⁾ per unit area <i>q</i> _A kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
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

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A</i> _o %	Mass ¹⁾ per unit area <i>q</i> _A kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
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
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) For plain steel wire, $\rho = 7\,850\text{ kg/m}^3$ (see clause 5).

Table 1 — Preferred aperture size and wire diameter combinations (continued)

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	Mass ¹⁾ per unit area <i>q_A</i> kg/m ²
R 10 w mm	R 20 w mm	R 40/3 w mm			
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
	0,56		0,160	60	0,45
			0,224	51	0,81
			0,280	44	1,19
			0,355	37	1,75

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	Mass ¹⁾ per unit area <i>q_A</i> kg/m ²
R 10 w mm	R 20 w mm	R 40/3 w mm			
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

1) For plain steel, $q = 7\,850\text{ kg/m}^3$ (see clause 5).

Table 1 — Preferred aperture size and wire diameter combinations (concluded)

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A</i> ₀ %	Mass ¹⁾ per unit area <i>ρA</i> kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
		0,212	0,100 0,140 0,160	46 36 32	0,41 0,71 0,87
0,2	0,2		0,080 0,090 0,112 0,125 0,140 0,160	51 48 41 38 35 31	0,29 0,35 0,51 0,61 0,73 0,90
	0,18	0,18	0,080 0,090 0,112 0,125 0,140	48 44 38 35 32	0,31 0,38 0,55 0,65 0,78
0,16	0,16		0,071 0,100 0,112 0,125	48 38 35 32	0,28 0,49 0,59 0,70
	0,15	0,15	0,063 0,080 0,100 0,112	50 43 36 33	0,24 0,36 0,51 0,61
	0,14		0,063 0,090 0,100 0,112	48 37 34 31	0,25 0,45 0,53 0,63
0,125	0,125	0,125	0,056 0,063 0,080 0,090 0,100	48 44 37 34 31	0,22 0,27 0,40 0,48 0,56
	0,112		0,056 0,071 0,080 0,090	44 38 34 31	0,24 0,35 0,42 0,51
		0,106	0,050 0,056 0,063 0,071 0,080	46 43 39 36 31	0,20 0,25 0,30 0,36 0,45
0,1	0,1		0,050 0,063 0,071 0,080	44 38 34 31	0,21 0,31 0,37 0,40
	0,09	0,09	0,040 0,045 0,050 0,056 0,063 0,071	48 44 41 38 35 31	0,16 0,19 0,23 0,27 0,33 0,40

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A</i> ₀ %	Mass ¹⁾ per unit area <i>ρA</i> kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
0,08	0,08		0,040 0,045 0,050 0,056 0,063	44 41 38 35 31	0,17 0,21 0,24 0,29 0,35
		0,075	0,036 0,040 0,050 0,056	46 43 36 33	0,15 0,18 0,25 0,30
	0,071		0,040 0,045 0,050 0,056	41 38 34 31	0,18 0,22 0,26 0,31
0,063	0,063	0,063	0,036 0,040 0,045 0,050	41 37 34 31	0,17 0,20 0,24 0,28
	0,056		0,032 0,036 0,040 0,045	41 37 34 31	0,15 0,18 0,21 0,26
		0,053	0,036 0,040	36 33	0,19 0,22
0,05	0,05		0,028 0,030 0,032 0,036 0,040	41 39 37 34 31	0,13 0,14 0,16 0,19 0,23
	0,045	0,045	0,032 0,036	34 31	0,17 0,20
0,04	0,04		0,025 0,030 0,032	38 33 31	0,12 0,16 0,18
		0,038	0,025 0,030	36 30	0,13 0,17
	0,036		0,028 0,030	32 30	0,16 0,17
0,032	0,032	0,032	0,025 0,028	32 28	0,14 0,17
0,025	0,025		0,022 0,025	28 26	0,13 0,16
0,02	0,02		0,020	25	0,13

1) For plain steel wire, $\rho = 7\,850\text{ kg/m}^3$ (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

STANDARDSISO.COM : Click to view the full PDF of ISO 4783-2:1989