

INTERNATIONAL STANDARD

ISO 4783-2

Second edition,
June 1997 (1989-04-15)

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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

Bearbeitet: Normung		4.29
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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*

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

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, e_A , for each combination.

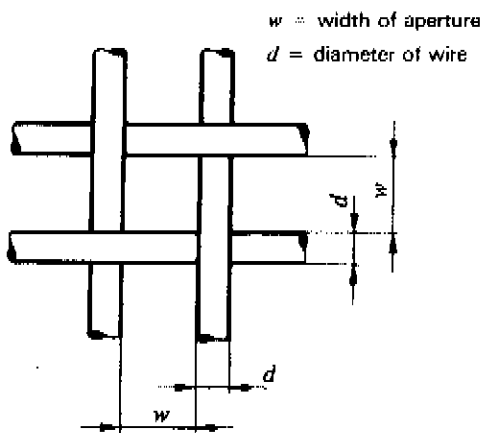
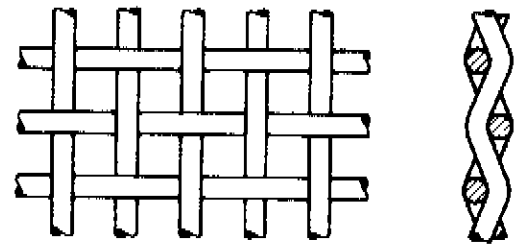
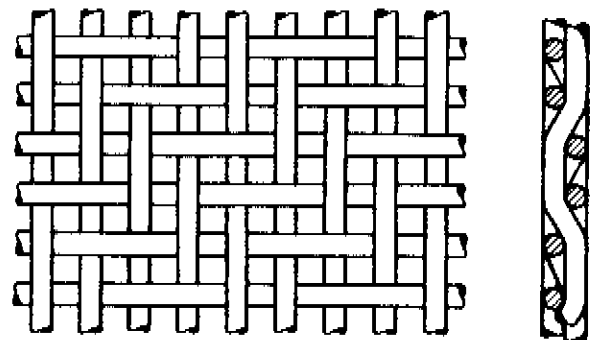


Figure 1 — Width of aperture and diameter of wire



Plain weave



Twilled weave

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>ρA_o</i> kg/m ²	Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	Mass ¹⁾ per unit area <i>ρA_o</i> kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm				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	6,3	6,3		0,900	79	1,29
			1,80	81	2,31				1,12	75	1,94
			2,00	79	2,82				1,25	72	2,38
			2,24	77	3,49				1,40	70	2,93
			3,15	70	6,58				1,60	67	3,74
			3,55	67	8,19				1,80	64	4,62
	14		1,40	83	1,62	5,6	5,6	5,6	0,800	79	1,14
			1,80	79	2,60				1,00	74	1,74
			2,24	74	3,92				1,12	72	2,15
			2,80	69	5,93				1,40	67	2,23
		13,2	2,80	68	6,22	6,3	6,3		1,80	62	4,84
									3,15	46	12,80
			1,25	83	1,44				1,00	74	1,74
			1,60	79	2,31				1,12	72	2,15
12,5	12,5		1,80	76	2,88	5,6	5,6	5,6	1,40	67	2,23
			2,00	74	3,50				1,80	60	5,08
			2,24	72	4,31				2,00	58	6,12
			2,80	67	6,51				2,24	54	7,46
									2,50	51	9,02
									2,80	48	10,94
11,2	11,2		1,12	83	1,29	5,6	5,6	5,6	3,15	44	13,34
			1,25	81	1,59				0,710	79	1,01
			1,40	79	1,98				0,800	77	1,27
			1,80	74	3,17				0,900	74	1,58
			2,00	72	3,85				1,12	69	2,37
			2,24	69	4,74				1,25	67	2,90
			2,50	67	5,79				1,40	64	3,56
			2,80	64	7,11				1,60	60	4,52
			3,15	61	8,78				1,80	57	5,56
			3,55	57	10,58				2,24	51	8,13
10	10		1,12	81	1,43	5	5		0,710	77	1,12
			1,40	77	2,18				0,900	72	1,74
			1,60	74	2,80				1,00	69	2,12
			1,80	72	3,49				1,25	64	3,18
			2,00	69	4,23				1,40	61	3,89
			2,50	64	6,35				1,60	57	4,93
		9,5	1,40	76	2,28	5	5		2,00	54	6,05
			1,80	71	3,64				2,24	51	7,26
			2,00	68	4,42				2,50	48	8,80
			2,24	65	5,43				2,80	44	10,58
			2,50	63	6,61				2,80	41	12,77
			2,80	60	8,09						
			3,15	56	9,96	4,75	4,75		0,900	71	1,82
			3,55	53	12,27				1,25	63	3,31
									1,40	60	4,05
			1,00	81	1,27				1,60	56	5,12
			1,25	77	1,94				1,80	53	6,28
			1,40	75	2,39				2,00	50	7,53
	9		1,40	75	2,39	4,5	4,5		2,24	46	9,12
			1,60	73	3,07				2,50	43	10,95
			1,80	69	3,81				2,80	40	13,19
			2,24	64	5,67						
									0,630	77	0,98
									0,800	72	1,53
8	8	8	1,00	79	1,41	4,5	4,5		0,900	69	1,91
			1,25	75	2,15				1,00	67	2,31
			1,40	72	2,65				1,12	64	2,83
			1,60	69	3,39				1,25	61	3,45
			1,80	67	4,20				1,40	58	4,22
			2,00	64	5,08				1,60	54	5,33
			2,24	61	6,22				1,80	51	6,53
			2,50	58	7,56				2,00	48	7,82
			2,80	55	9,22				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_o</i> %	Mass ¹⁾ per unit area <i>ρA₂</i> kg/m ²	Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	Mass ¹⁾ per unit area <i>ρA₂</i> kg/m ²			
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm				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	2	2	2	0,315	74	0,60			
			0,630	75	1,09				0,400	69	0,85			
			0,710	72	1,36				0,560	61	1,56			
			0,900	67	2,10				0,630	58	1,92			
			1,00	64	2,54				0,710	54	2,36			
			1,12	61	3,11				0,900	48	3,55			
			1,25	58	3,78				1,00	44	4,23			
			1,40	55	4,61				1,25	38	6,11			
	3,55		0,500	77	0,78		1,8		0,315	72	0,60			
			0,560	75	0,97				0,355	70	0,74			
			0,630	72	1,21				0,400	67	0,92			
			0,800	67	1,87				0,500	61	1,38			
			0,900	64	2,31				0,560	58	1,69			
			1,00	61	2,79				0,630	55	2,07			
			1,12	58	3,41				0,800	48	3,13			
			1,25	55	4,13						1,7	0,400	66	0,97
0,560	62	2,42	0,630	53	2,16									
0,900	53	4,31	0,800	46	3,25									
1,25	53	4,31	1,12	36	5,65									
3,15	3,15		0,450	77	0,71	1,6	1,6					0,280	72	0,53
			0,500	74	0,87							0,315	70	0,66
			0,560	72	1,07							0,355	67	0,82
			0,710	67	1,66							0,450	61	1,25
			0,800	64	2,05				0,500	58	1,51			
			0,900	60	2,54				0,560	55	1,84			
			1,12	54	3,73				0,630	51	2,26			
			1,25	51	4,51				0,710	48	2,77			
	2,8	2,8	0,450	74	0,79			1,4	0,250	72	0,48			
			0,500	72	0,96				0,315	67	0,73			
			0,560	69	1,19				0,450	57	1,39			
			0,710	64	1,82				0,560	51	2,03			
			0,800	60	2,26				0,630	48	2,48			
			0,900	57	2,78				0,710	44	3,03			
			1,12	51	4,06				0,900	37	4,47			
			1,60	40	7,39				1,25	28	7,49			
			1,80	37	8,95				1,25	1,25		0,250	69	0,53
			2,00	34	10,85							0,280	67	0,65
2,5	2,5		0,400	74	0,70	0,315	64	0,81						
			0,450	72	0,87	0,400	57	1,23						
			0,500	69	1,06	0,500	51	1,81						
			0,630	64	1,61	0,560	48	2,20						
			0,710	61	1,99	0,630	44	2,68						
			0,800	57	2,46	0,800	37	3,96						
			0,900	54	3,08			1,18	0,450	52	1,58			
			1,00	51	3,63				0,630	43	2,78			
0,800	56	2,57	0,800	36	4,11									
1,00	49	3,78	1,00	29	5,83									
1,80	32	9,89		2,24					0,355	75	0,62			
2,5	2,5								0,400	72	0,77	0,400	67	0,58
									0,450	69	0,96	0,315	61	0,88
									0,560	64	1,42	0,355	58	1,09
						0,630	61	1,76	0,400	54	1,34			
						0,710	58	2,17	0,450	51	1,64			
						0,900	51	3,28	0,560	44	2,37			
						1,00	51	3,28	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>ρA</i> kg/m ²	Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A_o</i> %	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				R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm				
1	1	1	0,224	67	0,52	0,5	0,5	0,5	0,140	61	0,39	
			0,250	64	0,64				0,160	57	0,49	
			0,280	61	0,78				0,200	51	0,73	
			0,315	58	0,96				0,224	48	0,88	
			0,355	54	1,18				0,250	44	1,06	
			0,400	51	1,45				0,280	41	1,28	
			0,450	48	1,77				0,315	38	1,55	
			0,500	44	2,12				0,355	34	1,87	
			0,560	41	2,55				0,400	31	2,26	
									0,710	34	3,74	
			0,900	28	5,41							
	0,9		0,200	67	0,46				0,140	58	0,42	
			0,224	64	0,57				0,200	48	0,78	
			0,250	61	0,69				0,250	41	1,13	
			0,315	55	1,04				0,280	38	1,36	
			0,355	51	1,28				0,315	35	1,65	
			0,400	48	1,56				0,425	0,200	46	0,81
			0,450	45	1,91					0,280	36	1,41
			0,500	41	2,27					0,355	30	2,05
		0,85	0,355	50	1,33	0,4	0,4		0,125	58	0,38	
			0,400	44	1,63				0,180	48	0,71	
			0,500	40	2,35				0,224	41	1,02	
			0,630	33	3,41				0,250	38	1,22	
			0,800	27	4,93				0,280	35	1,46	
									0,355	0,355	0,125	55
0,8	0,8		0,200	64	0,51				0,140	51	0,50	
			0,250	58	0,76				0,180	44	0,77	
			0,280	55	0,92				0,200	41	0,92	
			0,315	51	1,13				0,224	38	1,10	
			0,355	48	1,39				0,250	34	1,31	
			0,450	41	2,06				0,280	31	1,57	
			0,500	38	2,44				0,315	28	1,88	
			0,315	0,315	0,355	25	2,25					
	0,71	0,71	0,180	64	0,46	0,315	0,315		0,112	54	0,37	
			0,200	61	0,56				0,160	44	0,69	
			0,250	55	0,83				0,200	37	0,99	
			0,280	51	1,01				0,250	31	1,40	
			0,315	48	1,23				0,3	0,160	43	0,71
			0,355	44	1,50					0,200	36	1,02
			0,450	37	2,22					0,224	33	1,18
			0,560	31	3,14				0,250	30	1,44	
0,63	0,63		0,160	64	0,41				0,100	54	0,33	
			0,180	60	0,51				0,112	51	0,41	
			0,224	54	0,75				0,140	44	0,59	
			0,250	51	0,90				0,160	40	0,74	
			0,280	48	1,09				0,180	37	0,89	
			0,315	44	1,33				0,224	31	1,26	
		0,6	0,280	46	1,13	0,25	0,25	0,25	0,100	51	0,36	
			0,400	36	2,03				0,125	44	0,53	
			0,450	33	2,45				0,140	41	0,64	
									0,160	37	0,79	
									0,180	34	0,96	
	0,56		0,160	60	0,45				0,200	31	1,13	
			0,224	51	0,81				0,090	51	0,33	
			0,280	44	1,19				0,100	48	0,39	
			0,355	37	1,75				0,125	41	0,57	
							0,160	34	0,85			
							0,180	31	1,02			

1) For plain steel, $\rho = 7\,850\text{ kg/m}^3$ (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_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			
		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	0,063 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_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			
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

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

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