

# INTERNATIONAL STANDARD

# ISO 4783-1

Second edition  
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 1 : Generalities

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

*Partie 1 : Généralités*



Reference number  
ISO 4783-1 : 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 4783-1 was prepared by Technical Committee ISO/TC 24, *Sieves, sieving and other sizing methods*.

This second edition cancels and replaces the first edition (ISO 4783-1 : 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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# Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations —

## Part 1 : Generalities

### 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-cripped 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				R 10
	125		112		100		90		80		71		63		56		R 20
	125	118	112	106	100	95	90	85	80	75	71	67	63	60	56		53
Diameter of wire $d$ , mm																	
86	10,0																86
85		10,0															85
84	11,2		10,0	10,0				8,00				6,30		5,60		5,00	84
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		5,60	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		6,30	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		7,10	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					8,00	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		9,00	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		10,0	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		11,2	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				12,5	65
64					25,0		22,4		20,0		18,0		16,0		14,0		64
63																14,0	63
62										20,0		18,0		16,0			62
61											20,0						61
60													18,0		16,0		60
59																16,0	59

Table 1 — Aperture size and wire diameter combinations (continued)

Open area $A_0$ %	Width of aperture $w$ , mm																$A_0$	
	50				40				31,5				25					R 10
	50		45		40		35,5		31,5		28		25		22,4			R 20
	50	47,5	45	42,5	40	37,5	35,5	33,5	31,5	30	28	26,5	25	23,6	22,4	21,2	R 40	
Diameter of wire $d$ , mm																		
84				4,00				3,15		2,80		2,50				2,00	84	
83	5,00	4,50			4,00	3,55	3,55		3,15		2,80		2,50	2,24	2,24		83	
82		5,00		4,50		4,00		3,55		3,15		2,80		2,50		2,24	82	
81	5,60		5,00		4,50		4,00		3,55		3,15		2,80		2,50		81	
80		5,60		5,00		4,50		4,00		3,55		3,15		2,80		2,50	80	
79	6,30		5,60		5,00		4,50		4,00		3,55		3,15		2,80		79	
78		6,30		5,60		5,00		4,50		4,00		3,55		3,15		2,80	78	
77	7,10		6,30		5,60		5,00		4,50		4,00		3,55		3,15		77	
76		7,10		6,30		5,60		5,00		4,50				3,55		3,15	76	
75			7,10		6,30		5,60						4,00			3,55	75	
74	8,00								5,00		4,50		4,00				74	
73		8,00		7,10		6,30		5,60		5,00		4,50		4,00		3,55	73	
72	9,00		8,00		7,10		6,30		5,60		5,00		4,50		4,00		72	
71		9,00		8,00		7,10		6,30		5,60		5,00		4,50		4,00	71	
70																	70	
69	10,0		9,00		8,00		7,10		6,30		5,60		5,00		4,50		69	
68		10,0		9,00		8,00		7,10		6,30		5,60		5,00		4,50	68	
67	11,2		10,0		9,00		8,00		7,10		6,30		5,60		5,00		67	
66				10,0													66	
65		11,2				9,00		8,00		7,10		6,30		5,60		5,00	65	
64	12,5		11,2		10,0		9,00		8,00		7,10		6,30		5,60		64	
63		12,5		11,2												5,60	63	
62						10,0		9,00		8,00		7,10		6,30			62	
61	14,0		12,5		11,2		10,0						7,10		6,30		61	
60		14,0		12,5					9,00		8,00						60	
59						11,2		10,0		9,00		8,00		7,10		6,30	59	
58			14,0		12,5		11,2		10,0						7,10		58	
57	16,0										9,00		8,00				57	
56						12,5		11,2		10,0		9,00		8,00		7,10	56	
55							12,5										55	
54									11,2		10,0		9,00		8,00		54	
53													10,0			8,00	53	
52														9,00			52	
51															10,0	9,00	51	

Table 1 -- Aperture size and wire diameter combinations (continued)

Open area $A_0$ %	Width of aperture $w$ , mm															$A_0$	
	20				16				12,5				10				R 10
	20		18		16		14		12,5		11,2		10		9		R 20
	20	19	18	17	16	15	14	13,2	12,5	11,8	11,2	10,6	10	9,5	9		8,5
Diameter of wire $d$ , mm																	
84				1,60		1,40						1,00			0,800	84	
83	2,00	1,80	1,80		1,60		1,40	1,25	1,25	1,12	1,12		1,00	0,900	0,900	83	
82		2,00		1,80		1,60		1,40		1,25		1,12		1,00		0,900	82
81	2,24		2,00		1,80		1,60		1,40		1,25		1,12		1,00		81
80		2,24		2,00		1,80		1,60		1,40		1,25		1,12		1,00	80
79	2,50		2,24		2,00		1,80		1,60		1,40		1,25		1,12		79
78		2,50		2,24		2,00			1,60		1,40		1,25		1,12		78
77	2,80		2,50		2,24		2,00	1,80			1,60		1,40		1,25		77
76		2,80		2,50		2,24			1,80				1,40		1,25		76
75	3,15		2,80		2,50			2,00		1,80		1,60			1,40		75
74		3,15		2,80			2,24		2,00		1,80		1,60			1,40	74
73					2,50		2,24		2,00		1,80		1,60		1,60		73
72	3,55		3,15		2,80		2,50		2,24		2,00		1,80		1,60		72
71		3,55		3,15		2,80		2,50		2,24		2,00		1,80		1,60	71
70			3,55		3,15												70
69	4,00						2,80		2,50		2,24		2,00		1,80		69
68		4,00		3,55		3,15		2,80		2,50		2,24		2,00		1,80	68
67	4,50		4,00		3,55		3,15		2,80		2,50		2,24		2,00		67
66				4,00											2,00		66
65		4,50				3,55		3,15		2,80		2,50		2,24			65
64	5,00		4,50		4,00		3,55		3,15		2,80		2,50				64
63		5,00		4,50								2,80		2,50		2,24	63
62						4,00		3,55		3,15							62
61	5,60		5,00		4,50				3,55		3,15		2,80		2,50		61
60		5,60		5,00		4,00								2,80		2,50	60
59						4,50		4,00		3,55		3,15					59
58	6,30		5,60		5,00						3,55		3,15		2,80		58
57				5,60			4,50		4,00							2,80	57
56		6,30				5,00		4,50		4,00		3,55		3,15			56
55			6,30		5,60										3,15		55
54	7,10						5,00		4,50		4,00		3,55				54
53		7,10		6,30		5,60		5,00				4,00		3,55		3,15	53
52									4,50								52
51	8,00		7,10		6,30		5,60		5,00		4,50		4,00		3,55		51
50		8,00		7,10		6,30								4,00		3,55	50
49								5,60		5,00		4,50					49
48			8,00		7,10		6,30		5,60		5,00		4,50		4,00		48
47																	47
46								6,30		5,60		5,00		4,50		4,00	46
45																	45
44									6,30		5,60		5,00		4,50		44
43														5,00		4,50	43
42																	42
41															5,00		41
40																5,00	40

Table 1 — Aperture size and wire diameter combinations (continued)

Open area $A_0$ %	Width of aperture $w$ , mm															R 10		
	8				6,3				5				4					R 20
	8	7,5	7,1	6,7	6,3	6	5,6	5,3	5	4,75	4,5	4,25	4	3,75	3,55		3,35	R 40
Diameter of wire $d$ , mm																	$A_0$	
83	0,800	0,710	0,710														83	
82		0,800		0,710		0,630		0,560									82	
81	0,900		0,800		0,710		0,630	0,560									81	
80		0,900		0,800		0,710		0,630	0,560		0,500		0,450				80	
79	1,00		0,900		0,800		0,710	0,630		0,560		0,500		0,450			79	
78		1,00		0,900		0,800		0,710	0,630		0,560		0,500		0,450		78	
77	1,12		1,00		0,900		0,800		0,710	0,630		0,560		0,500			77	
76		1,12		1,00		0,900			0,710	0,630		0,560		0,500			76	
75	1,25		1,12				0,800			0,710		0,630		0,560			75	
74					1,00		0,900		0,800								74	
73		1,25		1,12		1,00		0,900	0,800		0,710		0,630		0,560		73	
72	1,40		1,25		1,12		1,00		0,900	0,800		0,710		0,630			72	
71		1,40		1,25		1,12		1,00		0,900		0,800		0,710		0,630	71	
70			1,40		1,25												70	
69	1,60						1,12		1,00		0,900		0,800		0,710		69	
68		1,60		1,40		1,25		1,12	1,00		0,900		0,800		0,710		68	
67	1,80		1,60		1,40		1,25		1,12		1,00		0,900		0,800		67	
66						1,40						1,00					66	
65		1,80		1,60				1,25	1,12				0,900		0,800		65	
64	2,00		1,80		1,60		1,40		1,25	1,12		1,00		0,900			64	
63								1,40		1,25		1,12					63	
62		2,00		1,80		1,60							1,00		0,900		62	
61	2,24		2,00						1,40	1,25		1,12		1,00			61	
60					1,80	1,60			1,40		1,25						60	
59		2,24		2,00		1,80		1,60					1,12		1,00		59	
58	2,50		2,24		2,00					1,40		1,25		1,12			58	
57						1,80		1,60			1,40						57	
56		2,50		2,24		2,00		1,80		1,60			1,25		1,12		56	
55	2,80		2,50									1,40		1,25			55	
54					2,24		2,00		1,80		1,60						54	
53		2,80		2,50		2,24		2,00		1,80		1,60		1,40		1,25	53	
52																	52	
51	3,15		2,80		2,50		2,24		2,00		1,80		1,60		1,40		51	
50		3,15		2,80		2,50				2,00						1,40	50	
49								2,24				1,80		1,60			49	
48	3,55		3,15		2,90		2,50		2,24		2,00		1,80		1,60		48	
47																	47	
46		3,55		3,15		2,80		2,50		2,24		2,00		1,80		1,60	46	
45											2,24						45	
44	4,00		3,55		3,15		2,80		2,50			2,00		1,80			44	
43		4,00		3,55		3,15		2,80		2,50		2,24		2,00			43	
42																1,80	42	
41	4,50		4,00		3,55		3,15		2,80		2,50		2,24		2,00		41	
40										2,80		2,50					40	
39				4,00		3,55		3,15						2,24		2,00	39	
38	5,00								3,15		2,80		2,50		2,24		38	
37					4,00		3,55		3,15								37	
36										3,15		2,80		2,50		2,24	36	
35											3,15		2,80				35	
34														2,50			34	
33																2,50	33	

Table 1 – Aperture size and wire diameter combinations (continued)

Open area $A_o$ %	Width of aperture $w$ , mm															$A_o$		
	3,15				2,5				2				1,6					R 10
	3,15		2,8		2,5		2,24		2		1,8		1,6		1,4			R 20
	3,15	3	2,8	2,65	2,5	2,36	2,24	2,12	2	1,9	1,8	1,7	1,6	1,5	1,4	1,32	R 40	
Diameter of wire $d$ , mm																		
78		0,400		0,355													78	
77	0,450		0,400		0,355												77	
76		0,450				0,355		0,315		0,280							76	
75				0,400			0,355		0,315		0,280						75	
74	0,500		0,450		0,400					0,315		0,280					74	
73		0,500		0,450		0,400		0,355					0,250		0,224		73	
72	0,560		0,500		0,450		0,400		0,355		0,315		0,280		0,250		72	
71		0,560		0,500		0,450		0,400		0,355		0,315		0,280		0,250	71	
70											0,355		0,315				70	
69	0,630		0,560		0,500		0,450		0,400						0,280		69	
68		0,630		0,560		0,500		0,450		0,400		0,355		0,315		0,280	68	
67	0,710		0,630		0,560		0,500		0,450		0,400		0,355		0,315		67	
66												0,400					66	
65		0,710		0,630		0,560		0,500		0,450				0,355		0,315	65	
64	0,800		0,710		0,630		0,560		0,500		0,450		0,400		0,355		64	
63								0,560		0,500		0,450					63	
62		0,800		0,710		0,630							0,400		0,355		62	
61				0,710		0,630		0,560		0,500		0,450					61	
60	0,900		0,800							0,560		0,500			0,400		60	
59		0,900		0,800		0,710		0,630						0,450		0,400	59	
58	1,00					0,710		0,630		0,560		0,500					58	
57			0,900		0,800						0,560			0,450			57	
56		1,00		0,900		0,800		0,710		0,630			0,500		0,450		56	
55											0,630		0,560				55	
54	1,12		1,00		0,900		0,800		0,710					0,500			54	
53		1,12		1,00			0,800		0,710		0,630		0,560		0,500		53	
52					0,900												52	
51	1,25		1,12		1,00		0,900		0,800		0,710		0,630		0,560		51	
50		1,25								0,800		0,710		0,630			50	
49				1,12		1,00		0,900								0,560	49	
48	1,40		1,25		1,12		1,00		0,900		0,800		0,710		0,630		48	
47																	47	
46		1,40		1,25		1,12		1,00		0,900		0,800		0,710		0,630	46	
45																	45	
44	1,60		1,40		1,25		1,12		1,00		0,900		0,800		0,710		44	
43		1,60		1,40		1,25		1,12		1,00		0,900		0,800			43	
42																0,710	42	
41				1,40		1,25		1,12		1,00		0,900					41	
40	1,80		1,60				1,25		1,12		1,00			0,800			40	
39		1,80		1,60		1,40							0,900		0,800		39	
38						1,40		1,25		1,12		1,00					38	
37	2,00		1,80		1,60									0,900			37	
36		2,00			1,60		1,40		1,25		1,12		1,00				36	
35				1,80				1,40		1,25		1,12			0,900		35	
34	2,24				1,80		1,60							1,00			34	
33		2,24		2,00					1,40		1,25		1,12				33	
32					1,80		1,60		1,40		1,25			1,00			32	
31	2,50		2,24		2,00		1,80		1,60					1,12			31	
30											1,40		1,25				30	
29						2,00		1,80		1,60						1,12	29	
28							2,00		1,80		1,60		1,40		1,25		28	
27												1,60		1,40			27	
26															1,25		26	
25												1,60		1,40			25	



Table 1 — Aperture size and wire diameter combinations (continued)

Open area $A_0$ %	Width of aperture $w$ , mm															$A_0$		
	1,25				1				0,8				0,63					R 10
	1,25		1,12		1		0,9		0,8		0,71		0,63		0,56			R 20
	1,25	1,18	1,12	1,06	1	0,95	0,9	0,85	0,8	0,75	0,71	0,67	0,63	0,6	0,56	0,53	R 40	
Diameter of wire $d$ , mm																		
72	0,224																72	
71		0,224		0,200													71	
70																	70	
69	0,250		0,224		0,200												69	
68		0,250		0,224		0,200		0,180									68	
67	0,280		0,250		0,224		0,200		0,180								67	
66				0,250				0,200									66	
65		0,280			0,224					0,180		0,160					65	
64	0,315		0,280		0,250		0,224		0,200		0,180		0,160				64	
63				0,280		0,250		0,224								0,140	63	
62		0,315								0,200		0,180		0,160			62	
61	0,355		0,315		0,280		0,250		0,224		0,200						61	
60						0,280		0,250					0,180		0,160		60	
59		0,355		0,315						0,224		0,200		0,180		0,160	59	
58			0,355		0,315		0,280		0,250		0,224		0,200				58	
57	0,400							0,280							0,180		57	
56		0,400		0,355		0,315				0,250		0,224		0,200		0,180	56	
55							0,315		0,280		0,250						55	
54	0,450		0,400		0,355								0,224		0,200		54	
53				0,400		0,355		0,315		0,280		0,250		0,224		0,200	53	
52		0,450															52	
51	0,500		0,450		0,400		0,355		0,315		0,280		0,250		0,224		51	
50						0,400		0,355		0,315		0,280		0,250			50	
49		0,500		0,450												0,224	49	
48	0,560		0,500		0,450		0,400		0,355		0,315		0,280		0,250		48	
47																	47	
46		0,560		0,500		0,450		0,400		0,355		0,315		0,280		0,250	46	
45							0,450										45	
44	0,630		0,560		0,500			0,400		0,355		0,315		0,280			44	
43		0,630		0,560		0,500		0,450		0,400		0,355		0,315		0,280	43	
42																	42	
41	0,710		0,630		0,560		0,500		0,450		0,400		0,355		0,315		41	
40						0,560		0,500									40	
39		0,710		0,630					0,450		0,400		0,355		0,315		39	
38					0,630		0,560		0,500								38	
37	0,800		0,710							0,450		0,400		0,355			37	
36		0,800		0,710		0,630		0,560		0,500		0,450		0,400		0,355	36	
35							0,630		0,560								35	
34	0,900		0,800		0,710						0,500		0,450		0,400		34	
33				0,800		0,710		0,630		0,560		0,500		0,450			33	
32		0,900															32	
31	1,00		0,900		0,800		0,710		0,630		0,560		0,500		0,450		31	
30							0,710		0,630		0,560		0,500				30	
29		1,00		0,900		0,800										0,450	29	
28	1,12		1,00		0,900		0,800		0,710		0,630		0,560		0,500		28	
27								0,800				0,630		0,560			27	
26		1,12		1,00		0,900				0,710						0,500	26	
25	1,25		1,12		1,00		0,900		0,800		0,710		0,630		0,560		25	

Table 1 — Aperture size and wire diameter combinations (continued)

Open area $A_o$ %	Width of aperture $w$ , mm															R 10		
	0,5				0,4				0,315				0,25					R 20
	0,5		0,45		0,4		0,355		0,315		0,28		0,25		0,224			R 40
	Diameter of wire $d$ , mm															$A_o$		
61	0,140																61	
60		0,140		0,125													60	
59																	59	
58			0,140		0,125												58	
57	0,160			0,140													57	
56		0,160				0,125		0,112									56	
55			0,160		0,140		0,125										55	
54	0,180							0,112		0,100		0,090					54	
53		0,180		0,160		0,140		0,125		0,112		0,100				0,080	53	
52																	52	
51	0,200		0,180		0,160		0,140		0,125		0,112		0,100		0,090		51	
50		0,200						0,140									50	
49				0,180		0,160						0,112		0,100		0,090	49	
48	0,224		0,200		0,180		0,160		0,140		0,125		0,112		0,100		48	
47																	47	
46		0,224		0,200		0,180		0,160		0,140		0,125		0,112		0,100	46	
45			0,224														45	
44	0,250				0,200		0,180		0,160		0,140		0,125		0,112		44	
43		0,250		0,224		0,200				0,160		0,140		0,125		0,112	43	
42								0,180									42	
41	0,280		0,250		0,224		0,200						0,140		0,125		41	
40		0,280		0,250				0,180		0,160						0,125	40	
39					0,224		0,200		0,180		0,160		0,140				39	
38	0,315		0,280		0,250		0,224								0,140		38	
37								0,200		0,180		0,160					37	
36		0,315		0,280		0,250		0,224		0,200				0,160		0,140	36	
35			0,315		0,280			0,224		0,200	0,180						35	
34	0,355					0,250						0,180		0,160			34	
33		0,355		0,315		0,280		0,250		0,224							33	
32											0,200		0,180		0,160		32	
31	0,400		0,355		0,315		0,280		0,250		0,224		0,200		0,180		31	
30				0,355		0,315		0,280		0,250							30	
29		0,400										0,224		0,200		0,180	29	
28	0,450		0,400		0,355		0,315		0,280		0,250		0,224		0,200		28	
27				0,400				0,315		0,280							27	
26		0,450				0,355						0,250		0,224		0,200	26	
25	0,500		0,450		0,400		0,355		0,315		0,280		0,250		0,200		25	

Table 1 – Aperture size and wire diameter combinations (continued)

Open area $A_o$ %	Width of aperture $w$ , mm															$A_o$	
	0,2				0,16				0,125				0,1				
	0,2		0,18		0,16		0,14		0,125		0,112		0,1		0,09		
Diameter of wire $d$ , mm															53		
0,2	0,19	0,18	0,17	0,16	0,15	0,14	0,132	0,125	0,118	0,112	0,106	0,1	0,095	0,09		0,085	
53		0,071		0,063		0,056		0,050								53	
52																52	
51	0,080		0,071		0,063		0,056		0,050							51	
50		0,080		0,071		0,063										50	
49								0,056		0,050		0,045				49	
48	0,090		0,080		0,071		0,063		0,056		0,050		0,045			48	
47																47	
46		0,090		0,080		0,071		0,063		0,056		0,050		0,045		0,040	46
45																45	
44	0,100		0,090		0,080		0,071		0,063		0,056		0,050		0,045	44	
43		0,100		0,090		0,080			0,063		0,056		0,050		0,045	43	
42								0,071								42	
41	0,112		0,100		0,090			0,071		0,063		0,056		0,050		41	
40		0,112		0,100			0,080						0,056		0,050	40	
39					0,090		0,080		0,071		0,063					39	
38	0,125		0,112		0,100					0,071		0,063		0,056		38	
37						0,090		0,080								37	
36		0,125		0,112		0,100			0,080		0,071		0,063		0,056	36	
35	0,140		0,125		0,112			0,090						0,063		35	
34						0,100		0,090		0,080		0,071				34	
33		0,140		0,125		0,112					0,080		0,071		0,063	33	
32			0,140		0,125			0,100		0,090						32	
31	0,160					0,112		0,100		0,090		0,080		0,071		31	
30			0,140		0,125										0,071	30	
29		0,160					0,112		0,100		0,090		0,080			29	
28	0,180		0,160		0,140		0,125		0,112		0,100		0,090		0,080	28	
27			0,160		0,140										0,080	27	
26		0,180					0,125		0,112		0,100		0,090			26	
25	0,200		0,180		0,160		0,140		0,125		0,112		0,100		0,090	25	

Table 1 – Aperture size and wire diameter combinations (continued)

Open area $A_o$ %	Width of aperture $w$ , mm																$A_o$
	0,08				0,063				0,05				0,04				
	0,08		0,071		0,063		0,056		0,05		0,045		0,04		0,036		
	0,08	0,075	0,071	0,067	0,063	0,06	0,056	0,053	0,05	0,048	0,045	0,042	0,04	0,038	0,036	0,034	
	Diameter of wire $d$ , mm																
46		0,036		0,032													46
45																	45
44	0,040		0,036		0,032	0,030											44
43		0,040				0,032		0,028									43
42				0,036			0,030										42
41	0,045		0,040		0,036		0,032	0,030	0,028								41
40										0,028							40
39		0,045		0,040		0,036		0,032	0,030			0,025					39
38	0,050		0,045							0,030	0,028		0,025				38
37					0,040		0,036		0,032								37
36		0,050		0,045		0,040				0,032	0,030	0,028		0,025			36
35	0,056							0,036					0,028		0,025		35
34			0,050		0,045		0,040		0,036		0,032	0,030					34
33		0,056		0,050		0,045				0,036			0,030	0,028		0,025	33
32								0,040					0,032			0,028	32
31	0,063		0,056		0,050		0,045		0,040		0,036		0,032	0,030			31
30		0,063		0,056		0,050				0,040					0,030	0,028	30
29								0,045				0,036		0,032			29
28	0,071		0,063		0,056		0,050		0,045		0,040		0,036		0,032	0,030	28
27				0,063		0,056				0,045						0,032	27
26		0,071						0,050				0,040		0,036			26
25	0,080		0,071		0,063		0,056		0,050		0,045		0,040		0,036		25

Table 1 – Aperture size and wire diameter combinations (concluded)

Open area $A_o$ %	Width of aperture $w$ , mm										$A_o$
	0,032					0,025				0,020	
	0,032		0,028			0,025		0,022		0,020	
	0,032	0,03	0,028	0,026	0,025	0,024	0,022	0,021	0,020		
	Diameter of wire $d$ , mm										
33		0,022									33
32	0,025										32
31			0,022								31
30		0,025									30
29											29
28	0,028		0,025	0,022	0,022						28
27	0,030	0,028				0,022					27
26				0,025				0,020			26
25	0,032		0,028		0,025		0,022		0,020		25

### 5 Mass per unit area

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

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

where

- $d$  is the diameter of wire, in millimetres;
- $w$  is the width of aperture, in millimetres;
- $\rho$  is the material density, in kilograms per cubic metre;
- $f$  is the wire screen conversion factor.

Values for  $\rho$  shall be taken from table 2. For plain and twilled weave of woven wire cloth,  $f = 1$  (see ISO 4783-2). Values of  $f$  for pre-crimped and pressure-welded wire screens are tabulated in ISO 4783-3.

NOTE — Values for the mass per square metre obtained from the above formula are empirical and based on data collected over several decades.

**Table 2 — Material densities**

Material	Density $\rho$ kg/m <sup>3</sup>
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

### 6 Mesh count

The identification of a wire screen or woven wire cloth by the dimensions  $d$  and  $w$  may be carried out by direct measurement of

- the wire diameter  $d$  with a micrometer,
- the aperture width  $w$  with a vernier inside calliper.

The width of apertures which are too small to be measured by calliper may be calculated using the formula

$$w = \frac{l}{n} - d$$

where

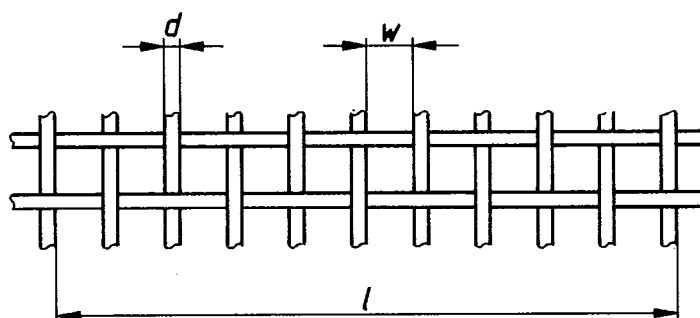
- $w$  is the aperture width, in millimetres;
- $n$  is a convenient number of apertures;
- $l$  is the length covered by  $n$  apertures and  $n$  wires, in millimetres;
- $d$  is the wire diameter, in millimetres.

For aperture widths of 1 mm and greater,  $n$  shall be at least 10 and for smaller aperture widths at least 20. For these smaller apertures, the value for  $d$  shall be determined as an average value of at least five measurements.

The length  $l$  shall be measured with a steel rule or, in the case of wire cloth with very small apertures, a micrometer magnifying glass.

**Example** — A woven wire cloth which has a measured length of 36 mm covered by 10 apertures and 10 wires and a measured wire diameter of 0,45 mm, has an aperture width of

$$w = \frac{36}{10} - 0,45 = 3,15 \text{ mm}$$



**Figure — Mesh count of wire cloth**

**ISO 4783-1 : 1989 (E)**

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**UDC 621.928.028.3**

**Descriptors :** sieves, sizing screens, wire cloth, dimensions, relative aperture.

**Price based on 11 pages**

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