INTERNATIONAL STANDARD

ISO 4783-1

Second edition
1989-04-15

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-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																
	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	R 40
	Diameter of wire d, mm																A_o
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_o %	Width of aperture w, mm																
	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																A_o
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_o %	Width of aperture w, mm																
	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	R 40
	Diameter of wire d, mm																A_o
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			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_o %	Width of aperture w, mm																
	8				6,3				5				4				R 10
	8		7,1		6,3		5,6		5		4,5		4		3,55		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_o
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																
	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																A_o
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_o %	Width of aperture w, mm																
	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																A_o
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																
	0,5				0,4				0,315				0,25				R 10
	0,5		0,45		0,4		0,355		0,315		0,28		0,25		0,224		R 20
	0,5	0,475	0,45	0,425	0,4	0,375	0,355	0,335	0,315	0,3	0,28	0,265	0,25	0,236	0,224	0,212	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																
	0,2				0,16				0,125				0,1				R 10
	0,2		0,18		0,16		0,14		0,125		0,112		0,1		0,09		R 20
	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	R 40
	Diameter of wire d, mm																A_o
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																
	0,08				0,063				0,05				0,04				R 10
	0,08		0,071		0,063		0,056		0,05		0,045		0,04		0,036		R 20
	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	R 40
	Diameter of wire d, mm																A_o
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									
	0,032				0,025				0,020	R 10
	0,032		0,028		0,025		0,022		0,020	R 20
	0,032	0,03	0,028	0,026	0,025	0,024	0,022	0,021	0,020	R 40
	Diameter of wire d, mm									A_o
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, ϱ_A, of an industrial wire screen or woven wire cloth is given, in kilograms per square metre, by the formula

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

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;

f is the wire screen conversion factor.

Values for ϱ 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 ϱ kg/m³
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

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

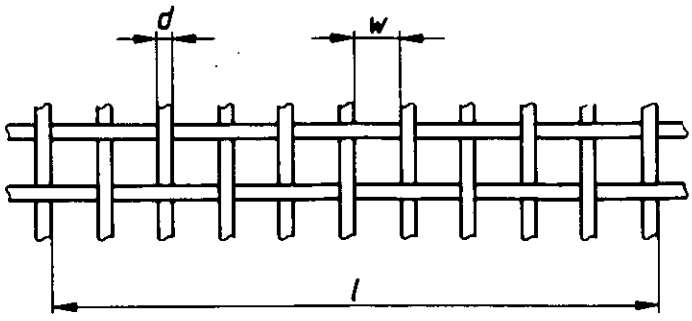

Figure — Mesh count of wire cloth

UDC 621.928.028.3

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

Price based on 11 pages