
International Standard



4783/3

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations —

Part 3 : Preferred combinations for pre-crimped or pressure-welded wire screens

*Tamis et tissus métalliques industriels — Guide pour le choix des combinaisons d'ouverture de maille et de diamètre du fil —
Partie 3 : Combinaisons préférentielles pour tissus préformés ou tissus soudés sous pression*

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Descriptors : openings, sizing screens, wire cloth, dimensions.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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.

International Standard ISO 4783/3 was developed by Technical Committee ISO/TC 24, *Sieves, sieving and other sizing methods*, and was circulated to the member bodies in December 1979.

It has been approved by the member bodies of the following countries :

Canada	Ireland	Spain
Egypt, Arab Rep. of	Netherlands	Switzerland
France	Portugal	United Kingdom
Germany, F.R.	Romania	USA
India	South Africa Rep. of	USSR

No member body expressed disapproval of the document.

Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations —

Part 3 : Preferred combinations for pre-crimped or pressure-welded wire screens

1 Scope and field of application

This part of ISO 4783 tabulates preferred combinations of aperture size and wire diameter for pre-crimped or pressure welded wire screens for industrial purposes which are taken from the general list of aperture/wire combinations given in ISO 4783/1.

It applies to wire screens of aperture size from 125 to 1 mm.

NOTE — This is the first International Standard on pre-crimped or pressure welded wire screens 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 5 years without excluding the option of increasing the numbers of preferred apertures.

Part 2 of this International Standard gives the preferred combinations for woven-wire cloth.

2 References

ISO 3, *Preferred numbers — Series of preferred numbers.*

ISO 497, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers.*

ISO 2194, *Wire screens and plate screens for industrial purposes — Nominal sizes of apertures.*

ISO 4782, *Industrial wire screens and woven wire cloth — Diameters of metal wire.*

ISO 4783, *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.

3 Designation

Pre-cripped or pressure welded screens for industrial purposes shall be designated in the following sequence by

- width of aperture w ;
- diameter of wire d ;
- material of wire;
- type (see table 1).

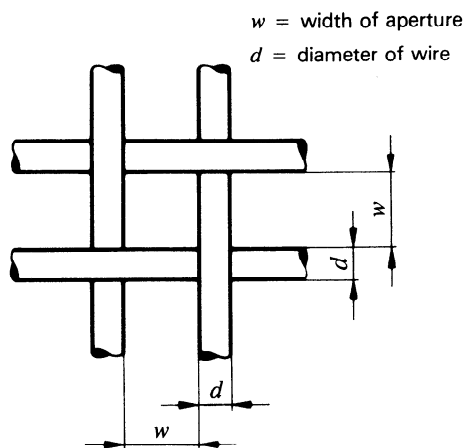


Figure — Width of aperture and diameter of wire

4 Aperture size and wire diameter combinations

Table 2 lists the preferred combinations of aperture size and wire diameter for wire screens and states the open area A_0 and the mass per square metre, ρ_A , for each combination.

5 Mass per unit area

The mass per unit area, ρ_A , of pre-cripped or pressure welded wire screens 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;

f is the screen conversion factor;

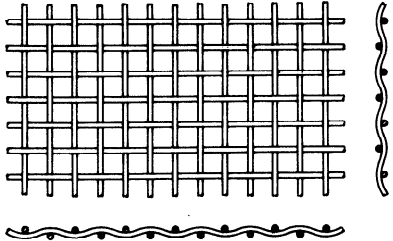
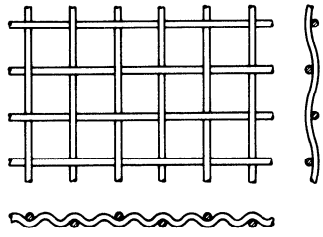
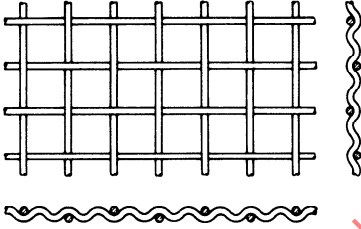
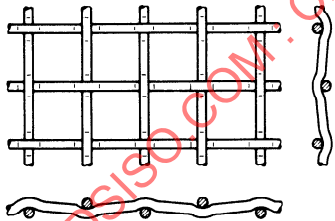
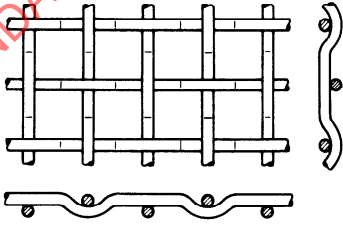
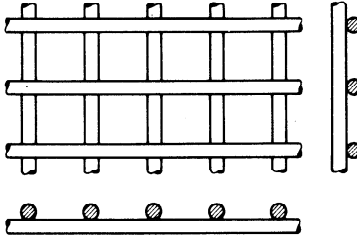
ρ is the material density, in kilograms per cubic metre.

Values for f shall be taken from table 1.

For wires of plain or carbon steel, $\rho = 7\,850 \text{ kg/m}^3$.

For wires of stainless steel, $\rho = 7\,800 \text{ kg/m}^3$.

Table 1 — Types and screen conversion factors

Type	Figure	Designation	Screen conversion factor f^1
A		Double crimp screen	1,00
B		Single intermediate crimp screen	1,03
C		Double intermediate crimp screen	1,06
D		Lock crimp screen	1,03
E		Flat-top screen	1,00
F		Pressure-welded screen	0,98

1) These factors are given as a guideline. Actual values may vary depending on the weaving process.

Table 2 — Preferred aperture size and wire diameter combinations

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A</i> _o %	Mass ¹⁾ per unit area <i>ρ</i> _A kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
125	125	125	10,0	86	9,41
			12,5	83	14,43
			16,0	79	23,06
			20,0	74	35,03
			25,0	69	52,92
	112		10,0	84	10,41
			12,5	81	15,94
			16,0	77	25,40
			20,0	72	38,48
		106	10,0	84	10,95
			12,5	80	16,75
			16,0	75	26,65
			20,0	71	40,32
			25,0	65	60,59
100	100		10,0	83	11,55
			12,5	79	17,64
			16,0	74	28,03
			20,0	69	42,33
			25,0	64	63,50
	90	90	10,0	81	12,70
			12,5	77	19,36
			16,0	72	30,67
			20,0	67	46,18
80	80		10,0	79	14,11
			12,5	75	21,45
			16,0	69	33,87
			20,0	64	50,80
		75	10,0	78	14,94
			12,5	73	22,68
			16,0	69	35,73
			20,0	62	53,47
	71		10,0	77	15,68
			12,5	72	23,76
			16,0	67	37,37
			20,0	61	55,82
63	63	63	8,00	79	11,45
			10,0	74	17,40
			12,5	70	25,12
			16,0	64	41,45
	56		8,00	77	12,70
			10,0	72	19,24
			12,5	67	28,97
			16,0	61	45,16
		53	8,00	75	13,32
			10,0	71	20,16
			12,5	65	30,30
			16,0	59	47,12
50	50		6,30	79	8,95
			8,00	74	14,01
			10,0	69	21,17
			12,5	64	31,75
			16,0	57	49,26

Width of aperture			Diameter of wire <i>d</i> mm	Open area <i>A</i> _o %	Mass ¹⁾ per unit area <i>ρ</i> _A kg/m ²
R 10 <i>w</i> mm	R 20 <i>w</i> mm	R 40/3 <i>w</i> mm			
	45	45	6,30	77	9,83
			8,00	72	15,34
			10,0	67	23,09
			12,5	61	34,51
			16,0	54	53,31
40	40		6,30	75	10,89
			8,00	69	16,93
			10,0	64	25,40
			12,5	58	37,80
		37,5	6,30	74	11,51
			8,00	68	17,67
			10,0	63	26,46
			12,5	56	39,69
	35,5		5,00	77	7,84
			6,30	72	12,06
			8,00	67	18,96
			10,0	61	27,91
31,5	31,5	31,5	5,00	74	8,70
			6,30	69	13,34
			8,00	64	20,58
			10,0	58	30,60
	28		5,00	72	9,62
			6,30	67	14,70
			8,00	60	22,58
			10,0	54	33,42
		26,5	5,00	71	10,08
			6,30	65	15,37
			8,00	59	23,56
			10,0	53	34,80
25	25		4,00	74	7,01
			5,00	69	10,58
			6,30	64	16,10
			8,00	57	24,63
			10,0	51	36,29
	22,4	22,4	4,00	72	7,70
			5,00	67	11,59
			6,30	61	17,56
			8,00	54	26,74
20	20		3,15	75	5,44
			4,00	69	8,47
			5,00	64	12,70
			6,30	58	19,17
			8,00	51	29,03
		19	4,00	68	8,83
			5,00	63	13,23
			6,30	56	19,92
			8,00	50	30,10
	18		3,15	72	5,96
			4,00	67	9,24
			5,00	61	13,80
			6,30	55	20,74
			8,00	48	31,26

1) For type A (see table 1) of plain or carbon steel, $\rho = 7\,850\text{ kg/m}^3$ (see clause 5).