
International Standard



4782

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Industrial wire screens and woven wire cloth — Diameters of metal wire

Tamis et tissus métalliques industriels — Diamètres des fils métalliques

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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 4782 was developed by Technical Committee ISO/TC 24, *Sieves, sieving and other sizing methods*, and was circulated to the member bodies in January 1980.

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

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

No member body expressed disapproval of the document.

Industrial wire screens and woven wire cloth — Diameters of metal wire

1 Scope and field of application

This International Standard specifies the diameters of wire to be used for the manufacturing of industrial wire screens and woven wire cloth. It is applicable to metal wires from 25 to 0,020 mm diameter.

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

2 References

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

ISO/R 388, *ISO metric series for basis thicknesses of sheet and diameters of wire.*

3 Diameters

Table 1 lists the diameters of wire according to the R 10 and R 20 series of ISO/R 388, with the addition of the 0,030 mm value of the R 40 series. Diameters in bold type (R 10 series) should be given preference.

Table 1 — Diameters of metal wire and linear densities for steel wire

Diameter of wire <i>d</i>	Linear density ¹⁾ ρ_1	Diameter of wire <i>d</i>	Linear density ¹⁾ ρ_1	Diameter of wire <i>d</i>	Linear density ¹⁾ ρ_1	Diameter of wire <i>d</i>	Linear density ¹⁾ ρ_1
mm	kg/km	mm	kg/km	mm	kg/km	mm	kg/km
		10,00	617	1,000	6,2	0,100	0,062
		9,00	499	0,900	5,0	0,090	0,050
		8,00	395	0,800	3,9	0,080	0,039
		7,10	311	0,710	3,1	0,071	0,031
		6,30	245	0,630	2,4	0,063	0,024
		5,60	193	0,560	1,9	0,056	0,019
		5,00	154	0,500	1,5	0,050	0,015
		4,50	125	0,450	1,2	0,045	0,012
		4,00	98,6	0,400	1,0	0,040	0,010
		3,55	77,7	0,355	0,78	0,036	0,008
		3,15	61,2	0,315	0,61	0,032	0,006
		2,80	48,3	0,280	0,48	0,030	0,006
		2,50	38,5	0,250	0,39	0,028	0,005
		2,24	30,9	0,224	0,31	0,025	0,004
25,0	3 853	2,00	24,7	0,200	0,25	0,022	0,003
22,4	3 094	1,80	20,0	0,180	0,20	0,020	0,002
20,0	2 466	1,60	15,8	0,160	0,16		
18,0	1 998	1,40	12,1	0,140	0,12		
16,0	1 578	1,25	9,6	0,125	0,096		
14,0	1 208	1,12	7,7	0,112	0,077		
12,5	963						
11,2	773						

1) For plain or carbon steel, the material density $\rho = 7 850 \text{ kg/m}^3$ (see clause 4).

4 Linear density and running length

The linear density of the wire as given in table 1 is calculated using the formula

$$\rho_1 = \frac{\pi d^2 \rho}{4\,000}$$

If desired, the running length of wire per kilogram may be calculated using the formula

$$L = \frac{4\,000\,000}{\pi d^2 \rho}$$

where

ρ_1 is the linear density, in kilograms per kilometre;

L is the running length, in metres per kilogram;

d is the diameter, in millimetres;

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

For the use of the formulae, values for ρ may be taken from table 2.

Table 2 — Material density

Material	Density ρ kg/m ³
Plain steel	7 850
Carbon steel	7 850
Stainless steel (17-19 % Cr, 8-10 % Ni)	7 800
Aluminium (AlMg5)	2 700
Copper	8 900
Brass (CuZn37)	8 450
Brass (CuZn20)	8 650
Brass (CuZn10)	8 800
Nickel	8 900
Nickel-copper (NiCu30Fe)	8 830
Copper-tin (CuSn6) (Phosphor-bronze)	8 800

5 Delivery and marking of wire

Wires for industrial wire screens and woven wire cloth shall be delivered in coils, in drums, or on spools, which shall be marked with the following items :

- a) name of producer;
- b) material of wire;
- c) diameter of wire;
- d) tensile strength and elongation (if required);
- e) date of manufacture.

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