
**Industrial woven wire cloth —
Technical requirements and tests**

Tissus métalliques industriels — Exigences techniques et vérifications

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO 9044 was prepared by Technical Committee ISO/TC 24, *Particle characterization including sieving*, Subcommittee SC 8, *Test sieves, sieving and industrial screens*.

This third edition cancels and replaces the second edition (ISO 9044:1999), which has been technically revised.

Industrial woven wire cloth — Technical requirements and tests

1 Scope

This International Standard defines terms regarding industrial woven wire cloth for screening purposes and specifies maximum permissible error, requirements, and test methods.

It applies to industrial woven wire cloth with square apertures, made of steel, stainless steel, or non-ferrous metals (see ISO 4783-2). It does not apply to woven wire cloth coated after weaving nor does it apply to pre-crimped and welded wire screens which are covered in ISO 4783-3 and ISO 14315.

It is of limited application to woven wire cloth used for purposes other than screening which may necessitate other requirements. The alternative requirements may be agreed between the purchaser and the supplier at the time of placing the order.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2194, *Industrial screens — Woven wire cloth, perforated plate and electroformed sheet — Designation and nominal sizes of openings*

ISO 4782, *Metal wire for industrial wire screens and woven wire cloth*

ISO 4783-1, *Industrial wire screens and woven wire cloth — Guide to the choice of aperture size and wire diameter combinations — Part 1: Generalities*

ISO 4783-2:1989, *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*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 aperture width

w

distance between two adjacent warp or weft wires, measured in the projected plane at the mid-positions

Note 1 to entry: See [Figure 1](#).

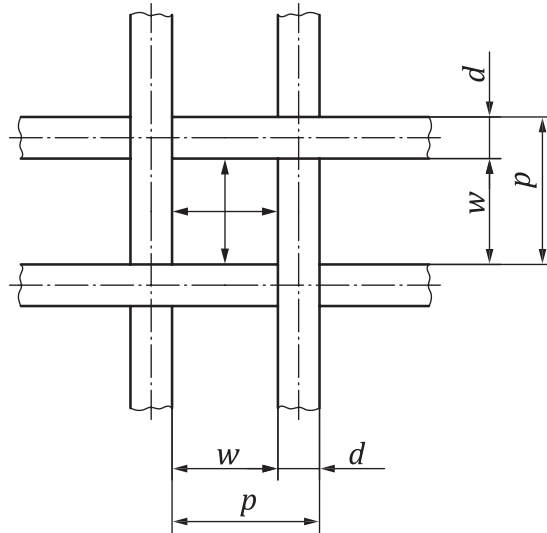


Figure 1 — Aperture width, wire diameter, and pitch

3.2

wire diameter

d

diameter of the wire in the wire screen

Note 1 to entry: The wire diameter may be altered slightly during the weaving process. See [Figure 1](#).

3.3

pitch

p

distance between the mid-points of two adjacent wires

Note 1 to entry: The pitch is the sum of the aperture width, *w*, and the wire diameter, *d*. See [Figure 1](#).

3.4

warp

all wires running lengthwise in the cloth as woven

3.5

weft

all wires running crosswise in the cloth as woven

3.6

number of apertures per unit length

n

number of measurements taken

3.7

open screening area

*A*₀

percentage of the surface of all the apertures in the total screening surface

Note 1 to entry: The open screening area is calculated as the ratio of the square of the nominal aperture width, *w*, and the square of the nominal pitch, *p* = *w* + *d*, rounded to a full percentage value:

$$A_0 = \frac{w^2}{(w + d)^2} \cdot 100\%$$

3.8

type of weave

way in which the *warp* (3.4) and *weft* (3.5) wires cross each other

Note 1 to entry: Industrial woven wire cloth is manufactured with square apertures in plain or twilled weave (see Figure 2).

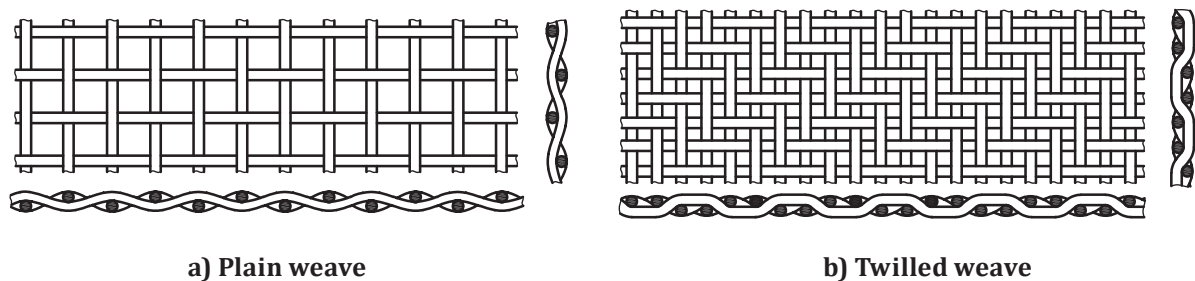


Figure 2 — Types of weave

3.9

firmness of woven wire cloth

tension existing between the crossing *warp* (3.4) and *weft* (3.5) wires and which determines the firmness of the wire cloth

Note 1 to entry: It is affected by the relationship of w to d and by the type of weave.

3.10

mass per unit area

ρ_A

quantity calculated using the following formula:

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

where

d is the wire diameter, in mm;

w is the aperture width, in mm;

ρ is the material density, in kg/m(s)³;

ρ_A is the mass per unit area, in kg/m(s)²

Note 1 to entry: This formula gives the calculated mass per unit area.

Note 2 to entry: The value 618,1 is based on the crimped wire.

Note 3 to entry: Typical values of ρ for various materials are given in ISO 4783-2:1989, Table 2. For example, the mass per unit area for plain or carbon steel with a density of 7 850 kg/m³ can be calculated using the formula provided as follows:

$$\rho_A = \frac{d^2 \cdot 7\,850}{618,1 \cdot (w + d)} = \frac{12,7 \cdot d^2}{w + d}$$