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Test sieves and test sieving — Vocabulary

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FOREWORD

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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 2395 was drawn up by Technical Committee ISO/TC 24, *Sieves, sieving and other sizing methods.*

It was approved in December 1971 by the Member Bodies of the following countries :

Australia	Ireland	Switzerland
Belgium	Italy	United Kingdom
Canada	Netherlands	U.S.A.
Chile	Romania	U.S.S.R.
Germany	South Africa, Rep. of	
India	Spain	

The Member Body of the following country expressed disapproval of the document on technical grounds :

France

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Test sieves and test sieving — Vocabulary

1 SCOPE AND FIELD OF APPLICATION

This International Standard provides a series of terms and definitions for correct and adequate understanding of the terminology relating to test sieves and test sieving.

The terms are divided into four sections covering :

- material to be sieved;
- test sieves;
- test sieving;
- expression of results.

2 MATERIAL TO BE SIEVED

2.1 particle : A discrete element of the material regardless of its size.

2.2 agglomerate : Several particles adhering together.

2.3 sample : A representative part taken from a quantity of material.

2.4 test sample : The sample which is used in the test.

2.5 charge : A test sample, or part of a test sample, placed on a test sieve or on a nest of test sieves.

2.6 apparent bulk density : The mass of the charge divided by its volume at the moment when it is placed on the sieving medium.

3 TEST SIEVES

3.1 sieving medium : A surface containing regularly arranged apertures of uniform shape and size.

3.2 sieve : An apparatus for the purpose of sieving, consisting of a sieving medium mounted in a frame.

3.3 test sieve : A sieve, intended for the particle size analysis of the material to be sieved, which conforms to a test sieve standard specification.

3.4 certified test sieve : A test sieve that has been examined and certified, by an authority accredited for the purpose, as complying with an agreed specification.

3.5 matched test sieve : A test sieve that reproduces the results of a master test sieve within defined limits for a given material.

3.6 full set of test sieves : All the test sieves of a given type of sieving medium contained in a standard specification.

3.7 regular set of test sieves : A number of sieves taken in regular order from a full set of test sieves, for a particle size analysis.

3.8 irregular set of test sieves : A number of sieves taken in irregular order from a full set of test sieves, for a particle size analysis.

3.9 nest of test sieves : A set (regular or irregular) of test sieves assembled together with a lid (cover) and receiver (pan).

3.10 frame : A rigid framework which supports the sieving medium and limits the spread of the material being sieved.

3.11 lid (cover) : A cover which fits snugly over a sieve to prevent escape of the material being sieved.

3.12 receiver (pan) : A pan which fits snugly beneath a sieve to receive the whole of the passing fraction.

3.13 aperture size : Dimension defining an opening.

3.14 percentage sieving area : Ratio of the area of the apertures to the total area of sieving medium, as a percentage.

3.15 woven wire cloth : A sieving medium of wires which cross each other to form the apertures.

3.16 wire diameter : Diameter of the wire in the woven cloth.

3.17 warp : All wires running lengthwise of the cloth as woven.

3.18 weft (shoot) : All wires running crosswise of the cloth as woven.

3.19 type of weave : The way in which warp and weft wires cross each other.

3.20 plain weave : Weave in which every warp wire crosses alternately above and below every weft wire and vice versa (see Figure 1).

3.21 twilled weave : Weave in which every warp wire crosses alternately above and below every second weft wire and vice versa (see Figure 2).

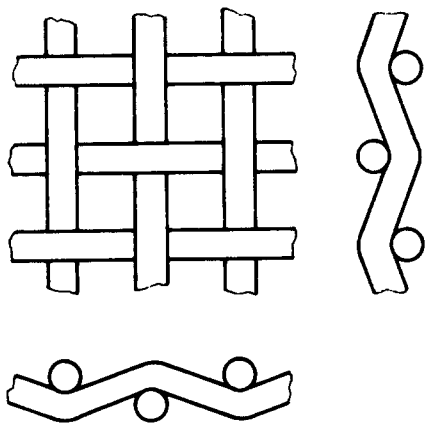

FIGURE 1 – **Plain weave**

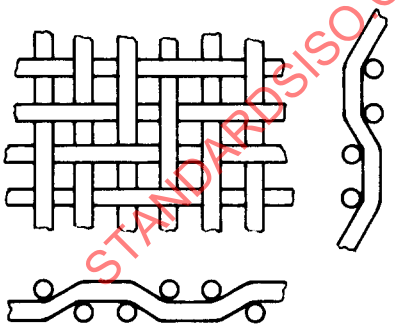

FIGURE 2 – **Twilled weave**

3.22 perforated plate : A sieving medium consisting of a plate with uniform holes in symmetrical arrangement.

3.23 pitch (centres) : Distance between corresponding points of two adjacent holes in a perforated plate.

3.24 bridge width (bar) : Distance between the nearest edges of two adjacent holes in a perforated plate.

3.25 margin : Distance between the outside edges of the outside rows of holes and the edges of a perforated plate.

3.26 plate thickness : Thickness of the plate after perforation.

3.27 puch side : The surface of a perforated plate which the punch entered.

4 TEST SIEVING

4.1 sieving : The process of separating a mixture of particles according to their size by means of one or more sieves.

4.2 test sieving : Sieving with one or more test sieves.

4.3 dry sieving : Sieving in the absence of a liquid.

4.4 wet sieving : Sieving in the presence of a liquid.

4.5 sieving rate : Quantity of material, expressed either in units of mass or as a percentage of the charge, passing through a sieve in a given interval of time.

4.6 undersize (fines) : That portion of the charge which has passed through the apertures of a stated sieve.

4.7 oversize (residue) : That portion of the charge which has not passed through the apertures of a stated sieve.

4.8 end point : The point in time after which further sieving fails to pass an amount sufficient to change the result significantly.

NOTE – The end point shall be specified in particular International Standards for each product, in terms of sieving rate, clarity of liquid in wet sieving, or other measurable criterion.

4.9 near-size particle : Particle of size approximately equal to the sieve aperture size.

4.10 blinding : Obstruction of the apertures of a sieving medium by particles of the material being sieved.

4.11 fraction (size fraction) : The portion of the charge which is retained by a test sieve or by the receiver.

5 EXPRESSION OF RESULTS

5.1 particle size (sieve size of a particle) : The smallest sieve aperture through which a particle will pass if presented in the most favourable attitude.

5.2 size analysis by sieving: The division of a sample by sieving into size fractions, and the reporting of results.

5.3 size distribution curve: A graphical representation of the results of a size analysis.

5.4 cumulative oversize distribution curve: A curve obtained by plotting the total (cumulative) percentages by mass retained on each of a set of sieves of descending aperture size against the corresponding aperture sizes.

5.5 cumulative undersize distribution curve: A curve obtained by plotting the total (cumulative) percentages by mass passing each of a set of sieves of descending aperture size against the corresponding aperture sizes.