

Australian Standard[®]

Specification for test sieves

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Australian Mining Industry Council
National Association of Testing Authorities
National Ready Mixed Concrete Association
The Royal Australian Chemical Institute
The University of New South Wales
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PREFACE

This Standard was prepared by the Standards Australia Committee on Particle Size Analysis, under the direction of the Multitechnics Standards Policy Board, to supersede AS 1152—1973, *Test sieves*.

In the preparation of this Standard, the committee took cognizance of overseas experience, including: BS 410, *Specification for test sieves*; ISO 565, *Test sieves—Woven metal wire cloth, perforated plate and electroformed sheet—Nominal size of openings*; ISO 2395, *Test sieves and test sieving—Vocabulary*; and ISO 3310, *Test sieves—Technical requirements and testing*.

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STANDARDS AUSTRALIA

Australian Standard

Specification for test sieves

1 SCOPE This Standard specifies the requirements for test sieves made from woven wire cloth or from plates with square or round perforations for use in determining the size distribution of granular products in the particle size range 32 μm to 125 mm.

The aperture sizes and tolerances of this Standard apply to new test sieves.

For wire cloth test sieves, successive sizes of which are in a ratio of about 1:2, the R40/3 series of aperture sizes is proposed. For perforated plate test sieves, both the R40/3 and the R20 series are proposed, particularly to meet the requirements of the aggregate, coal and iron industries.

NOTES:

- 1 Appendix A provides guidance on information to be supplied by purchasers when ordering test sieves.
- 2 Appendix B describes the procedure for inspecting woven wire test sieves.
- 3 Appendix C describes the procedure for inspecting perforated plate test sieves.
- 4 Appendix D describes the procedure for calibrating woven wire cloth or perforated plate test sieves.
- 5 Appendix E gives information on the maintenance of test sieves.

2 REFERENCED DOCUMENTS The following document is referred to in this Standard:

ISO 565 Test sieves—Woven metal wire cloth, perforated plate and electroformed sheet—Nominal size of openings

3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

3.1 Aperture size—the dimension defining an opening in the sieving medium.

3.2 Bridge width (bar)—the distance between the nearest edges of two adjacent holes in a perforated plate.

3.3 Frame—a rigid framework which supports the sieving medium and limits the spread of the material being sieved.

3.4 Lid—a cover which fits snugly over a test sieve to prevent escape of the material being sieved.

3.5 Margin—the distance between the outside edges of the outside rows of holes and the edges of a perforated plate.

3.6 Nest of test sieves—a set of test sieves assembled together with a lid and receiver.

3.7 Perforated plate—a sieving medium consisting of a plate with uniform holes in symmetrical arrangement.

3.8 Pitch (centres)—the distance between corresponding points of two adjacent holes in a perforated plate.

3.9 Plain weave—the weave in which every warp wire crosses alternately above and below every weft wire and vice versa (see Figure 1(a)).

3.10 Plate thickness—the thickness of the plate after perforation.

3.11 Receiver—a pan which fits snugly beneath a test sieve to receive the whole of the passing fraction.

3.12 Sieving medium—a surface containing regularly arranged apertures of uniform shape and size.

3.13 Twilled weave—the weave in which every warp wire crosses alternately above and below every second weft wire and vice versa (see Figure 1(b)).

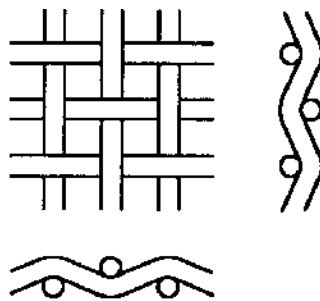
3.14 Test sieve—a sieve, intended for the particle size analysis of the material to be sieved, which conforms to a test sieve Standard specification.

3.15 Warp—all wires running along the cloth as woven.

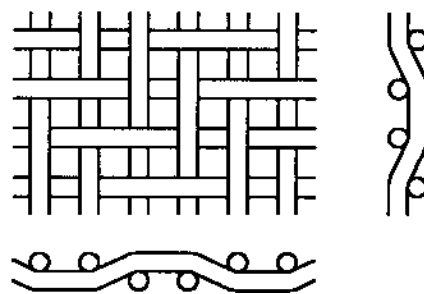
3.16 Weft (shoot)—all wires running across the cloth as woven.

3.17 Wire diameter—the diameter of the wire in the woven cloth.

3.18 Woven wire cloth—a sieving medium of wires which cross each other to form the apertures.



(a) Plain weaver



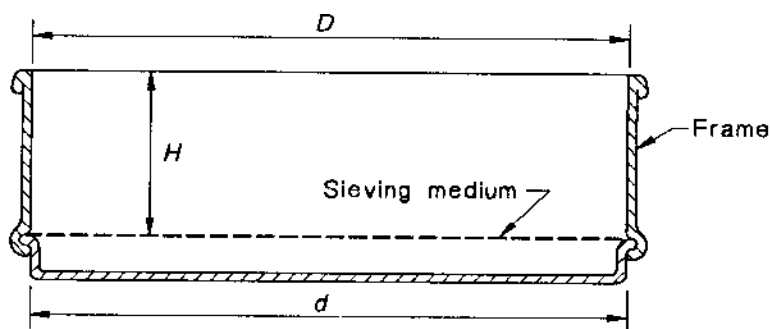
(b) Twilled weave

FIGURE 1 WEAVES OF WIRE CLOTH

4 TEST SIEVE DESIGNATION Test sieves shall be designated by the nominal aperture size, which is the nominal central distance of opposite sides of a square aperture or the nominal diameter of a round aperture. The type of hole (square or round) in perforated plate shall be stated. The dimensions shall be expressed in millimetres.

5 CONSTRUCTION OF TEST SIEVES

5.1 Test sieve frames Frames should be made of brass, plated steel or stainless steel. The preferred dimensions of round test sieve frames are given in Figure 2. Other nominal dimensions for test sieve frames are acceptable provided that the sieving medium in the manufacture of such test sieves complies with the requirements of this Standard. The appropriate sieving medium for each size of sieve is also included in Figure 2.



Nominal diameter, D and d mm	Tolerance		Diameter of sieving surface		Nominal depth H		Appropriate sieving medium
	D mm	d mm	Min. mm	Max. mm	Full mm	Half mm	
100	+0.4 -0	-0.01 -0.4	90	100	40	20	Wire cloth
200	+0.8 -0	-0.01 -0.4	185	200	50	25	Wire cloth or perforated plate
300	+0.09 -0	-0.01 -0.6	275	300	75	40	Wire cloth* or perforated plate
450	+1.0 -0	-0.01 -1.0	425	450	Not less than 100	—	Wire cloth* or perforated plate

* When fine wire cloth is used in large diameter test sieves, it should be supported by a support mesh or spider.

FIGURE 2 DIMENSIONS OF ROUND TEST SIEVE FRAMES

5.2 Lid and receiver When required for round test sieves, lids and receivers shall be of the same metal and gauge as the test sieves (see Figure 3).

5.3 Finish Test sieves, receivers and lids shall be smoothly finished. The seal between frame and sieving medium shall be formed in such a manner as to prevent lodging of the material to be sieved.

5.4 Nesting Test sieves shall be assembled in a nest with lid and receiver in such a way as to prevent escape of the sample during the sieving operations.