



भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS

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व्यापक परिचालन मसौदा

हमारा संदर्भ : सीईडी 55/टी-15

10 सितम्बर 2025

तकनीकी समिति: छलनी, छिनाई और अन्य छिनाई पदतियों विषय समिति, सीईडी 55

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- क) सिविल इंजीनियरी विभाग परिषद, सीईडीसी के सभी सदस्य
- ख) सीईडी 55 के सभी सदस्य
- ग) रूचि रखने वाले अन्य निकाय।

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प्रलेख संख्या	शीर्षक
सीईडी 55 (28685)WC	परीक्षण छलनी और परीक्षण छिनाई से संबंधित पारिभाषिक शब्दावली का भारतीय मानक मसौदा (IS 5421 का तीसरा पुनरीक्षण) ICS 19.120

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(द्वैपायन भद्र)

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WIDE CIRCULATION DRAFT

Our Ref: CED 55/T-15

10 September 2025

TECHNICAL COMMITTEE: SIEVES, SIEVING AND OTHER SIZING METHODS SECTIONAL COMMITTEE, CED 55

ADDRESSED TO:

- a) All Members of Civil Engineering Division Council, CEDC
- b) All Members of CED 55
- c) All other interested

Dear Sir/Madam,

Please find enclosed the following draft:

Doc. No.	Title
CED 55 (28685)WC	Draft Indian Standard Glossary of Terms Relating to Test Sieves and Test Sieving (Third Revision of IS 5421) ICS 19.120

Kindly examine the attached draft and forward your views stating any difficulties which you are likely to experience in your business or profession, if this is finally adopted as National Standard.

Last Date for Comments: 15 October 2025

Comments if any, may please be made in the enclosed format and emailed at ced55@bis.gov.in or sent at the above address. Additionally, comments may be sent online through the BIS e-governance portal, www.manakonline.in.

In case no comments are received or comments received are of editorial nature, kindly permit us to presume your approval for the above document as finalized. However, in case comments, technical in nature are received, then it may be finalized either in consultation with the Chairman, Sectional Committee or referred to the Sectional Committee for further necessary action if so desired by the Chairman, Sectional Committee.

The document is also hosted on BIS website www.bis.gov.in.

Thanking you,

Yours faithfully,

Sd/-

(Dwaipayan Bhadra)
Scientist 'E' & Head
Civil Engineering Department
Email: ced55@bis.gov.in

Encl: As above

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

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DOC. NO.- CED 55 (28685) WC

TITLE: Draft Indian Standard Glossary of Terms Relating to Test Sieves and Test Sieving
(Third Revision of IS 5421) ICS 19.120

LAST DATE OF COMMENTS: **15/10/2025**

NAME OF THE COMMENTATOR/ORGANIZATION: _____

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Draft Indian Standard

Glossary of Terms Relating to Test Sieves and Test Sieving

(Third Revision of IS 5421)

**SIEVES, SIEVING AND OTHER SIZING
METHODS SECTIONAL COMMITTEE, CED 55**

Last Date of Comments
15 October 2025

FOREWORD

(Formal clauses to be added later)

This standard was first published in 1969 and revised in 1981 and 2013. In the second revision the definitions have been aligned with ISO 2395: 1990 'Test sieves and test sieving — Vocabulary'.

The third revision of this standard has been taken up to incorporate further modifications necessary in the light of comments received from the users of this Standard. In this revision, definitions related to sieves and their testing have been rationalised.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

GLOSSARY OF TERMS RELATING TO TEST SIEVES AND TEST SIEVING
(Third Revision of IS 5421)

SIEVES, SIEVING AND OTHER SIZING
METHODS SECTIONAL COMMITTEE, CED 55

Last Date of Comments
15 October 2025**1 SCOPE**

This standard defines terms to facilitate understanding of the terminology relating to test sieves and test sieving.

2 TERMINOLOGY**2.1 Material to be Sieved**

2.1.1 Particle — Discrete element of the material regardless of its size.

2.1.2 Agglomerate — Several particles adhering together.

2.1.3 Sample — Representative part taken from a quantity of material.

2.1.4 Test Sample — Sample which is used in the test.

2.1.5 Charge — Test sample, or part of a test sample, placed on a test sieve or on a nest of test sieves.

2.1.6 Apparent Bulk Density — The mass of a charge divided by its volume at the moment when it is placed on the sieving medium.

2.1.7 Particle Density — The mass of a particle divided by the volume of the particle excluding open pores but including closed pores.

2.2 Test Sieves

2.2.1 Sieve — Apparatus for the purpose of sieving, consisting of a sieving medium mounted in a frame.

2.2.2 Test Sieve — Sieve which contains a sieving medium (mesh or perforated or electroformed sheet) having precise and uniform openings, both in size and shape, used for particle size analysis.

2.2.3 Certified Test Sieve — Test sieve that has been certified by an accredited authority as complying with standard specification.

2.2.4 Matched Test Sieve — Test sieve that reproduces the results of a master test sieve within defined limits for a given material.

2.2.5 Full Set of Test Sieves — All the test sieves of a given type of sieving medium in accordance with a standard specification.

2.2.6 Stack of Test Sieves — Set of two or more test sieves assembled according to increasing aperture size from bottom to top and with a lid and a receiver.

2.2.7 Sieve Depth, H_1 — Distance between the top rim of the sieve and the sieving medium (see Fig. 1).

2.2.8 Sieve Height, H_2 — Distance between the top and bottom rims of the sieve (see Fig. 1).

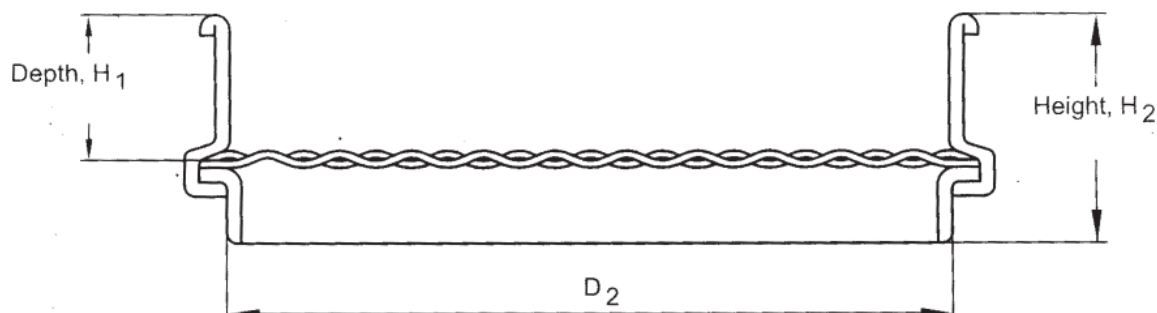


FIG. 1 SIEVE CROSS-SECTION

2.2.9 Lid, Cover — Device which fits snugly over a sieve to prevent the escape of material to be sieved.

2.2.10 Receiver, Pan — Device which fits snugly beneath a sieve to receive the whole of the passing fraction.

2.2.11 Frame — Device, which supports the sieving medium at its perimeter and limits the spread of material to be sieved.

2.2.12 Sieving Medium — A surface containing regularly arranged apertures of uniform shape and size.

2.2.13 Woven Wire Cloth — Sieving medium, produced by a wire weaving process. The wires form square apertures of uniform size.

2.2.14 Perforated Plate — Sieving medium consisting of a plate with uniform holes in a regular arrangement. The holes may be round or square.

2.2.15 Electroformed Sheet — Sieving medium made of metal sheet with round or square apertures, produced by electrochemical methods.

2.2.16 Aperture Size — Dimension defining an opening in a sieving medium.

2.2.17 Pitch

- a) For woven wire cloth, the distance between the axes of two adjacent wires in the weft or the warp; and
- b) For perforated plate and electroformed sheet, the distance between corresponding points of two adjacent holes.

2.2.18 Percentage Open Area

- a) For woven wire cloth and electroformed sheet, the ratio of the total area of the apertures to the total area of the cloth or sheet; and

- b) For perforated plate, the ratio of the total area of the holes to the total area of the perforated part of the plate (excluding any non-perforated parts).

2.2.19 Wire Diameter — Diameter of the wire in a woven wire cloth, as measured before weaving.

2.2.20 Type of Weave — The way in which warp and weft wires cross each other.

2.2.21 Warp — All wires running lengthwise of the cloth as woven.

2.2.22 Weft — All wires running crosswise of the cloth as woven.

2.2.23 Plain Weave — Type of weave in which every warp wire crosses alternately above and below every weft wire and *vice-versa* (see Fig. 2).

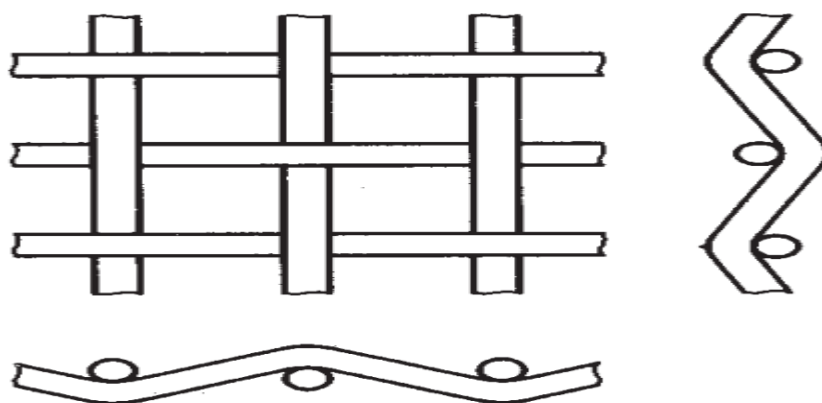


FIG. 2 PLAIN WEAVE

2.2.24 Twill Weave — Type of weave in which every warp wire crosses alternately above and below two weft wires and *vice-versa* (see Fig. 3).

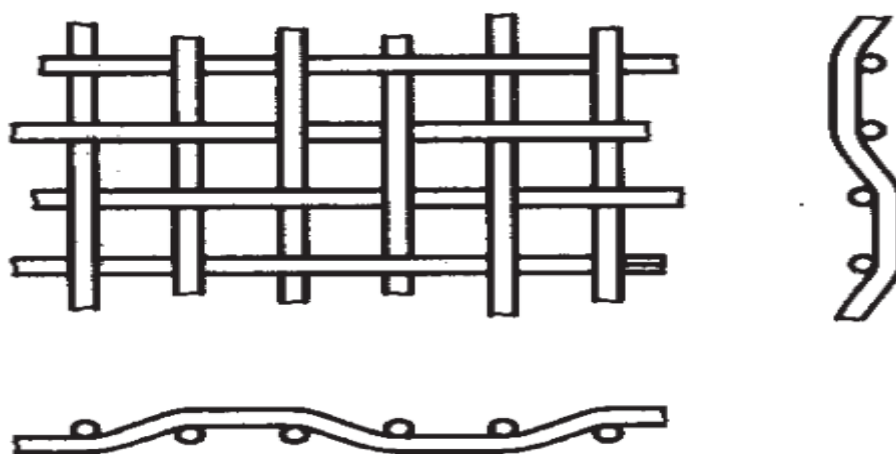


FIG. 3 TWILL WEAVE

2.2.25 Plate Thickness — Thickness of a plate before perforation.

2.2.26 Land — Distance between the nearest edges of two adjacent holes in a perforated plate or an electroformed sheet.

2.2.27 Margin — A non-perforated strip at the edge of a perforated plate or an electroformed sheet.

NOTE — The width of the margin is measured between the edge of the plate or sheet and the line of the outermost points of the row of holes next to this edge.

2.2.28 Punch Side — Surface of a perforated plate which the punch entered.

2.3 Test Sieving

2.3.1 Sieving — Process of separating a mixture of particles according to their size by means of one or more sieves.

NOTE — The process of separating particles for industrial purpose is designated as screening.

2.3.2 Test Sieving — Sieving with one or more test sieves.

2.3.3 Particle Size Analysis by Sieving — The separation of a sample of particulate material by test sieving, and the reporting of the results.

2.3.4 Hand Sieving — Sieving with one sieve or a nest of sieves, which is supported and agitated manually.

2.3.5 Machine Sieving — Sieving with one sieve or a nest of sieves, in which either the sieve(s) or the charge is agitated mechanically.

2.3.6 Dry Sieving — Sieving in the absence of a liquid.

2.3.7 Wet Sieving — Sieving with the help of a liquid.

2.3.8 Sieving Rate — The quantity of material passing through a sieve in a specified interval of time.

2.3.9 End Point — The point in time after which further sieving fails to pass an amount of material sufficient to change the result significantly.

NOTE — The end point is specified in particular standards for each material, in terms of sieving rate, clarity of liquid in wet sieving, or other measurable criteria.

2.3.10 Pegging — The condition where particles wedge in the sieve apertures.

2.3.11 Blinding; Clogging — The condition where very fine particles adhere to a screening surface and reduce the apertures or close them completely.

2.3.12 Size Fraction — The interval between two quoted limiting sizes of the material with particle sizes between those limits.

2.4 Expression of Results

2.4.1 Particle Size, Sieve Size of a Particle — Smallest aperture size through which a particle will pass if presented in the most favourable attitude.

2.4.2 Near Size Particle — Particle of size approximately equal to the aperture size of the sieve.

2.4.3 Undersize, Fines — That portion of the charge which has passed through the apertures of a stated sieve.

2.4.4 Oversize, Residue — That portion of the charge which has not passed through the apertures of a stated sieve.

2.4.5 Size Distribution Curve — Graphical representation of the results of a particle size analysis.

2.4.6 Cumulative Oversize Distribution Curve — Curve obtained by plotting the total (cumulative) percentage by mass retained on each of a set of sieves against the corresponding aperture size.

2.4.7 Cumulative Undersize Distribution Curve — Curve obtained by plotting the total (cumulative) percentage by mass passing each of a set of sieves against the corresponding aperture size.