

भारतीय मानक मसौदा  
लुगदी के लिए परीक्षण पद्धति

भाग 8 — कागज़, बोर्ड, लुगदी और सेलूलोज़ नैनोमटेरियल्स  
अनुभाग 4 — शुष्क पदार्थ सामग्री का निर्धारण — ओवन से सुखाने की पद्धति —  
ठोस रूप में सामग्रियाँ

*Draft Indian Standard*  
**Methods of Test for Pulp**

Part 8 — Paper, board, pulps and cellulosic nanomaterials  
Section 4 — Determination of dry matter content by oven-drying  
method — Materials in solid form

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ICS 85.040; 85.060

Paper and its Products Sectional  
Committee, CHD 15

Last date of comments: 05<sup>th</sup> August 2024

**NATIONAL FOREWORD**

*(formal clauses to be added later)*

During the chemical and physical analysis of paper, pulp, board and cellulosic nanomaterials, concurrent determination of dry matter content and moisture content are carried out for various purposes. The determination of dry matter content is carried out through oven drying method which is possible when the sample does not contain any appreciable quantity of matter, other than water, volatile at the temperature specified for the drying. In this method the sample should be either in solid form or in suspensions.

This standard covers determination of dry matter content in paper, pulp, board and cellulosic nanomaterials in solid form. A separate standard is being published for determination of dry matter content in suspensions of cellulosic nanomaterials.

ISO has published test method standards related to paper, pulp and board under three broad categories namely 'Paper, board and pulps', 'Paper and board' and 'Pulps'. Related Indian Standards published in IS 1060 (Parts 1, 2 and 3) 'Methods of sampling and test for paper and allied products' and IS 6213 series of standards published for 'Methods of test for pulps' are widely recognized and used in India. To maintain consistency with the prevailing international practices and to retain the existing test methods series, the committee responsible for formulating this standard decided to harmonize the methods of tests prescribed in IS 1060 series and IS 6213 series with those published by ISO and publish these adopted test methods standards in subsequent parts/ sections of IS 1060 series or IS 6213 series.

Related Indian Standards on methods of test have been published in the following other parts of IS 1060 series on 'Methods of sampling and test for paper and allied products':

Part 4 Methods of test for paper, board and pulp

Part 5 Methods of test for paper and board

Part 6 Methods of test for paper

Part 7 Methods of test for board

This standard is being published as Part 8 'Methods of test for paper, board, pulps and cellulose nanomaterials' of IS 1060 series. This Section of IS 1060 (Part 8) specifies an oven-drying method for the determination of the dry matter content in paper, board, pulp and cellulosic nanomaterials in solid form, which all can be produced from virgin and /or recycled materials. The other sections of IS 1060 (Part 8) are:

- |       |   |
|-------|---|
| Sec 1 | Determination of residue (ash content) on ignition at 525 °C<br>CHD 15 (25952) WC   |
| Sec 2 | Determination of residue (ash content) on ignition at 900 °C<br>CHD 15 (25962) WC   |
| Sec 3 | Determination of acid-soluble magnesium, calcium, manganese, iron, copper, sodium and potassium<br>CHD 15 (25971) WC        |
| Sec 5 | Determination of dry matter content by oven-drying method —<br>Suspensions of cellulosic nanomaterials<br>CHD 15 (26256) WC |

This test method was originally published as IS 6213 (Part 21) : 1984 'Methods of test for pulp: Part 21 Determination of dry matter content' describing the gravimetric method for determination of dry matter content of the pulp. During the formulation, considerable assistance was derived from ISO 638-1978 'Pulps — Determination of dry matter content'. In 2019, the committee decided to align this test method with ISO 638 : 2008 'Paper, board and pulps — Determination of dry matter content — Oven-drying method' by identical adoption under dual numbering.

ISO has further revised the standard expanding the title and scope to cover cellulose nanomaterial and paper and board for recycling and splitting the standard in two parts. Recognizing the benefits of following uniform practices globally, the committee has decided to adopt latest version of ISO 638-1 : 2022 'Paper, board, pulps and cellulosic nanomaterials — Determination of dry matter content by oven-drying method — Part 1: Materials in solid form' and publish it as separate standard under IS 1060 (Part 8) series, which provides methods of test for paper, board, pulp and cellulose nanomaterial, superseding ISO 6213 (Part 21) : 2019.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'; and
- b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 186 Paper and board — Sampling to determine average quality	IS 1060 (Part 5/Sec 1) : 2014/ISO 186 : 2002 Methods of sampling and test for paper and allied products: Part 5 Methods of test for paper and board, Section 1 Sampling to determine average quality.	Identical with ISO 186 : 2002

The Committee has reviewed the provisions of the following International Standard

referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
ISO 7213	Pulps — Sampling for testing
EN 17085	Paper and board — Sampling procedures for paper and board for recycling

In this adopted standard, reference appears to certain International Standards where the standard atmospheric conditions to be observed are stipulated which are not applicable to tropical/subtropical countries. The applicable standard atmospheric conditions for Indian conditions are  $(27 \pm 2)$  °C and  $(65 \pm 5)$  percent relative humidity and shall be observed while using this standard.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'.

**'FOR COMPLETE TEXT OF THE DOCUMENT, KINDLY REFER ISO 638-1 : 2022**

**Note:** The technical content of the document has not been enclosed as these are identical with the corresponding ISO Standard. For obtaining the copy of the complete ISO Standard,

Please contact:

Scientist 'F'/Senior Director and Head (Chemical)  
Chemical Department  
Bureau of Indian Standards  
Manak Bhavan, 9, Bahadur Shah Zafar Marg  
New Delhi-110002  
Telephone: 011-23236428  
Email: [chd@bis.gov.in](mailto:chd@bis.gov.in) or [chd15@bis.org.in](mailto:chd15@bis.org.in)