

**भारतीय मानक मसौदा**  
**लुगदी के लिए परीक्षण पद्धतियाँ**

भाग 10 — कप्पा संख्या का निर्धारण  
(दूसरा पुनरीक्षण)

***Draft Indian Standard***

**Methods of Test for pulp**

Part 10 — Determination of Kappa number  
( *Second Revision* )

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ICS 85.040

Paper and its Products Sectional Committee,  
CHD 15

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

**NATIONAL FOREWORD**

*(formal clauses added to be later)*

The Kappa number is an indication of the lignin content or bleachability of pulp. The Kappa number thus helps in knowing the degree of delignification of certain types of pulps.

For Kappa number range 1 to 100, this method is applicable. For pulps with a Kappa number exceeding 100, use of the chlorine-consumption procedure is recommended to describe the degree of delignification. A separate standard IS 6213 (Part 18) has been developed for chlorine-consumption procedure.

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.

This part of IS 6213 series specifies a method for determination of the kappa number of pulp and is applicable for all kind of chemical pulps and semi-chemical pulps within the kappa number range between 1 to 100.

The other parts of IS 6213 are:

Part 1	Water solubility of pulp
Part 2	Determination of freeness of pulp
Part 3	Determination of alpha, beta and gamma cellulose in pulp
Part 4	Determination of viscosity of pulp
Part 5	Solubility of pulp in one percent caustic soda solution
Part 6	Copper number of pulp
Part 8	Preparation of laboratory sheets for physical testing
Sec 1	Conventional sheet-former method ( <i>first revision</i> )
Sec 2	Rapid-Köthen method
Part 9	Bleach requirements and preparation of hand sheets for optical tests of pulp
Part 11	Determination of acid-insoluble ash ( <i>first revision</i> )
Part 12	Determination of calcium content ( <i>first revision</i> )
Part 13	Determination of copper content ( <i>first revision</i> )
Part 14	Determination of iron content ( <i>first revision</i> )
Part 15	Determination of manganese content ( <i>first revision</i> )
Part 16	Dirt count
Part 17	Determination of saleable mass of pulp

Part 18	Pulp — Determination of chlorine consumption (Degree of delignification) ( <i>first revision</i> )
Part 19	Determination of alkali solubility of pulp
Part 20	Determination of alkali resistance of pulp
Part 21	Paper, board and pulps — Determination of dry matter content — oven-drying method ( <i>first revision</i> )
Part 22	Preparation of laboratory sheets for the measurement of optical properties

This standard was first published in 1975, drawing assistance from ISO/R 302 'Determination of Kappa number of pulp'. The first revision was brought out in 2014 to identically align the standard with ISO 302 : 2004 and was published in dual numbering system. As ISO 302 has been revised in 2015, the committee decided to further revise this standard by aligning it with ISO 302 : 2015 'Pulps — Determination of Kappa number' under dual numbering.

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 638 Paper, board and pulps — Determination of dry matter content — Oven-drying method	CHD 15 (26254) WC/ ISO 638-1 : 2022 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. ( <i>Under development</i> )	Identical with ISO 638-1 : 2022

CHD 15 (26256) WC/ISO 638-2 : 2022 Methods of test for pulp: Part 8 Paper, board, pulps and cellulosic nanomaterials, Section 5 Determination of dry matter content by oven-drying method — Suspensions of cellulosic nanomaterials. (*Under development*)

Identical with ISO 638-2 : 2022

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

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 302 : 2015**

**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,

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