



BSI Standards Publication

Pulps — Determination of drainability

Part 2: "Canadian Standard" freeness method

National foreword

This British Standard is the UK implementation of ISO 5267-2:2025. It supersedes BS 6035-2:1982, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PAI/11, Methods of test for paper, board and pulps.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2025

ISBN 978 0 539 25860 8

ICS 85.040

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2025.

Amendments/corrigenda issued since publication

Date	Text affected



International
Standard

ISO 5267-2

Pulps — Determination of drainability —

Part 2: "Canadian Standard" freeness method

Pâtes — Détermination de l'égouttabilité —

*Partie 2: Méthode de mesure de l'indice d'égouttage "Canadian
Standard"*

**Third edition
2025-10**

Reference number
ISO 5267-2:2025(en)

Full document details: BS ISO 5267-2:2025

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*.

This third edition cancels and replaces the second edition (ISO 5267-2:2001), which has been technically revised.

The main changes are as follows:

- references to a standardizing laboratory and to authorized laboratories, and consequently to ISO 4094, have been removed to comply with ISO guidelines and ISO 4094 now is only relevant to optical standards;
- some contradictions have been corrected;
- an error in the table in [Annex C](#) has been corrected.

A list of all parts in the ISO 5267 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The “Canadian Standard” freeness test is designed to provide a measure of the rate at which a dilute suspension of pulp is dewatered under specified conditions. It has been shown that the drainability is related to the surface conditions and swelling of the fibres, and constitutes a useful index of the amount of mechanical treatment to which the pulp has been subjected.

The rate at which a suspension dewateres depends on the conditions of measurement, particularly the geometric characteristics of the instrument. One such instrument is the “Canadian Standard” freeness tester. The only practical means of achieving the required degree of accuracy for the measurement of “Canadian Standard” freeness is by the maintenance procedure specified in [Annex B](#) and in [Annex C](#). Results of this test do not necessarily correlate with the drainage behaviour of a fibre suspension on a commercial paper machine.

A crucial part of the equipment used to determine “Canadian Standard” freeness is the screen plate. When developing the test, the Pulp and Paper Research Institute of Canada (Paprican) found that even when screen plates were made to carefully defined specifications, they were variable in performance. A particular plate was chosen as the ‘standard’ plate and unless the plate used in a “Canadian Standard” freeness tester matches the performance of this original reference plate the instrument will produce an erroneous result. Production and calibration of Canadian Freeness Test plates thus requires the existence of an organisation which maintains a master plate that matches the performance of the original reference plate using a procedure detailed in this document¹⁾.

A method for the determination of drainability in terms of the Schopper-Riegler number is specified in ISO 5267-1.

NOTE Two slightly different types of “Canadian Standard” freeness testers have been in use, as described in [Annex A](#). These generally provide similar results, although some differences can occur.

1) At the date of publication of this document, FPInnovations, the successor of Paprican, is an organisation that maintained a master drainage plate using a procedure that meets the requirements detailed in [Annex B](#). This information is given for the convenience of users of this document and does not constitute an endorsement by ISO.

Pulps — Determination of drainability —

Part 2:

"Canadian Standard" freeness method

1 Scope

This document specifies a method for determination of the drainability of water from a pulp suspension in terms of the "Canadian Standard" freeness method in millilitres.

In principle, this method is applicable to all kinds of pulp in aqueous suspension.

NOTE Treatments of pulp suspensions which produce a large proportion of fines can induce an anomalous rise in freeness (false freeness), as a rule at values below 100 ml.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4119, *Pulps — Determination of stock concentration*

ISO 4046 (all parts), *Paper, board, pulps and related terms — Vocabulary*

ISO 5269-1, *Pulps — Preparation of laboratory sheets for physical testing — Part 1: Conventional sheet-former method*

ISO 5269-2, *Pulps — Preparation of laboratory sheets for physical testing — Part 2: Rapid-Köthen method*

ISO 14487, *Pulps — Standard water for physical testing*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in given in the ISO 4046 series and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

"Canadian Standard" freeness

volume, expressed in millilitres, of the filtrate collected from the side orifice of the "Canadian Standard" freeness tester with the temperature and stock concentration of the sample within the ranges specified

4 Principle

Drainage through a fibre mat formed during the test on a perforated screen plate of a given volume of an aqueous pulp suspension into a funnel provided with a bottom and a side orifice. Determination is made of