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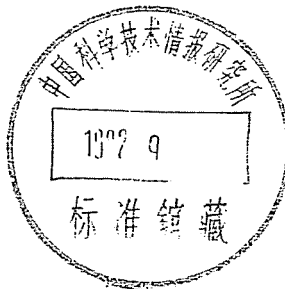
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British Standard Methods for
Determination of the drainability of pulp
Part 2. 'Canadian Standard' freeness method

[ISO title: Pulps – Determination of drainability – Part 2: "Canadian Standard" freeness method]

Méthodes de détermination de l'égouttabilité des pâtes
Partie 2. Méthode 'Canadian Standard'

Verfahren zur Bestimmung der Entwässerungsfähigkeit von Zellstoff
Teil 2. "Canadian Standard freeness" – Verfahren



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Compliance with a British Standard does not of itself confer immunity from legal obligations

National foreword

This Part of this British Standard has been prepared under the direction of the Paper Standards Committee and is identical with ISO 5267/2 'Pulps — Determination of drainability — Part 2 : "Canadian Standard" freeness method' published in 1980 by the International Organization for Standardization (ISO). Part 1 of this standard is identical with ISO 5267/1-1979 'Pulps — Determination of drainability — Part 1 : Schopper-Riegler method'.

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point

on the baseline as the decimal marker.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'British Standard'.

Cross references

International standard	Corresponding British Standard
ISO 4119-1980	BS 5878 : 1980 Method for determination of stock concentration of pulps (rapid method) (Identical)
ISO 5267/1-1979	BS 6035 Methods for determination of the drainability of pulp Part 1 : 1980 Schopper-Riegler method (Identical)

British Standard Methods for

Determination of the drainability of pulp

Part 2. 'Canadian Standard' freeness method

0 Introduction

The "Canadian Standard" freeness number depends on the conditions of measurement, particularly the geometric characteristics of the instrument. The only practical means of achieving the required degree of accuracy is by the calibration procedure specified in annex C. The reproducibility of this method is entirely dependent on these arrangements being established within and between countries.

1 Scope

This International Standard specifies a method for determination of the drainability of a pulp suspension in water in terms of the "Canadian Standard" freeness (CSF) number.

The "Canadian Standard" freeness test is designed to provide a measure of the rate at which a dilute suspension of pulp may be dewatered. 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.

Results of this test do not necessarily correlate with the drainage behaviour of a pulp material on a commercial paper machine.

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

2 Field of application

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

NOTE — However, treatments which produce a large proportion of fines may induce an anomalous rise in freeness (false freeness) as a rule at values below 100 CSF number.

3 Reference

ISO 4119, *Pulps — Determination of stock concentration.*

4 Definition

For the purposes of this International Standard, the following definition applies :

"Canadian Standard" freeness number : The volume, expressed in millilitres, of the filtrate collected from the side orifice of the "Canadian Standard" freeness tester.

5 Principle

Drainage through a fibre mat formed during the test on a perforated screen plate of a given volume of pulp in aqueous suspension into a funnel provided with a bottom and a side orifice. Collection of the discharge from the side orifice in a measuring cylinder.

6 Apparatus

Ordinary laboratory apparatus, and

6.1 "Canadian Standard" freeness tester, as described in annex A.

Instructions for maintenance of the apparatus are given in annex B. Details of the Calibration Service for the apparatus are given in annex C. Information concerning authorized laboratories is given in annex D.

6.2 Measuring cylinder, calibrated in millilitres and capable of measuring volume with an error less than 1,0 ml.

7 Preparation of sample

Take a sample of an aqueous suspension of the disintegrated pulp. If the concentration is not known exactly, dilute the suspension to approximately 0,32 % mass/mass using distilled or deionized water (see note 3), and determine the stock concentration in accordance with ISO 4119. Then dilute the suspension to a stock concentration of $0,3 \pm 0,005$ % mass/mass and adjust the temperature to $20,0 \pm 0,5$ °C (see note 4). Throughout the preparation of the sample, take care to avoid the formation of air bubbles in the suspension.

NOTES

1 With time, an aqueous pulp suspension withdrawn from the stock preparation system or laboratory pulp evaluation equipment, can undergo a change in freeness number. To avoid the effect of this reversion phenomenon, pulp suspensions subjected to testing more than 30 min after sampling should first be treated in the disintegration apparatus for 6 000 revolutions of the propeller, at or near the stock concentration specified for the CSF test.