

Methods for

Determination of saleable mass, in lots, of pulp —

Part 2: Pulps (such as flash-dried pulps)
baled in slabs

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PAI/11, upon which the following bodies were represented:

- British Carton Association
- British Fibreboard Packaging Association
- British Printing Industries' Federation
- British Textile Confederation
- Envelope Makers' and Manufacturing Stationers' Association
- Her Majesty's Stationery Office
- Institute of Paper Conservation
- Paper Federation of Great Britain
- Pira International
- Post Office
- University of Manchester (Institute of Science and Technology)
- Coopted members

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National foreword

This Part of BS 4747 has been prepared by Technical Committee PAI/11, Methods of test for paper, board and pulp. It is identical with ISO 801-2:1994 *Pulps — Determination of saleable mass in lots — Part 2: Pulps (such as flash-dried) baled in slabs*, published by the International Organization for Standardization (ISO). This edition supersedes BS 4747-2:1980 which is withdrawn.

Cross-reference

International Standard	Corresponding British Standard
ISO 801-1:1994	BS 4747 <i>Methods for determination of saleable mass, in lots, of pulp</i> Part 1:1995 <i>Pulp baled in sheet form</i>

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

The extreme difficulty encountered in the cutting of wedges from thick slabs of pulp, such as flash-dried pulp, for which this test method has been designed, has led to the adoption of a disc sampling procedure, following an extensive investigation (practical and statistical) of the problem. A brief statement of this investigation is given in Annex B.

It is recognized that, although the wedge system of sampling is, in theory, more accurate than the disc system, the drilling procedure specified in this part of ISO 801 may be regarded as satisfactory because, in practice, the moisture variation from place to place is relatively small (for example in flash-dried pulps).

1 Scope

This part of ISO 801 specifies a method for determining the dryness of a lot of pulp baled in slabs and for calculating its saleable mass.

This method is applicable to most kinds of pulp, in bales of approximately 200 kg, and made up of four to six slabs or wads, of fairly uniform and similar thickness. It may also be applicable to bales not composed of individual layers, but which are naturally delaminable. It does not apply to pulp baled in sheet form or to pulp in unitized bales.

The method is not applicable if the drilling device becomes appreciably hot because of frictional heat evolved during drilling; this can occur with some strong chemical or semichemical pulps.

An example of a full certificate of analysis and related calculations is given in Annex A.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 801. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 801 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 801-1:—, *Pulps — Determination of saleable mass in lots — Part 1: Pulp baled in sheet form*¹⁾.

3 Definitions

For the purposes of this part of ISO 801, the following definitions apply.

3.1

lot

the total number of bales of the same sort of pulp of specific characteristics

the number of bales comprising a lot is indicated by the invoice or by agreement between the interested parties

a lot of bales of pulp is said to be “with specification” if it is accompanied by a certificate of origin stating for each bale either

— its gross mass (3.2) and its absolute dryness (3.4),

or

— its saleable mass (3.7).

3.2

gross mass

the total mass of a bale, a part of a lot or a lot comprising

- contents;
- wrappers (pulp — paper);
- packaging wires or strappings.

3.3

oven-dry mass

the mass obtained on drying pulp at $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, until constant mass is reached

3.4

absolute dryness

the ratio of the oven-dry mass (3.3) of the pulp to its initial mass, expressed as a percentage

3.5

air-dry mass

the mass of the pulp when its moisture content is in equilibrium with the ambient atmosphere

3.6

theoretical commercial dryness

a conventional equilibrium value of 88 % or 90 % according to the country and/or commercial agreements²⁾

¹⁾ To be published. (Revision of ISO 801-1:1979)

²⁾ If the air dryness is 90 %, the pulp contains 90 parts by mass of absolutely dry fibres and 10 parts by mass of water. For an air dryness of 88 %, the corresponding Figures are 88 and 12.

3.7**saleable mass**

the gross mass (3.2) multiplied by the absolute dryness (3.4) divided by the theoretical commercial dryness (3.6). Usually, it approximates to the air-dry mass (3.5)

3.8**invoiced mass**

the saleable mass (3.7) indicated by the vendor on the invoice

4 Principle

Sample bales are taken from the lot in number which is a function of the total number of bales and slabs in the complete lot and in accordance with a sliding scale. The sample bales are weighed individually and collected in groups containing equal numbers of bales. A disc-shaped test piece is cut from every lap or wad. The test pieces are weighed and dried to constant mass to determine their oven-dry mass. The saleable mass of the lot is then calculated.

5 Apparatus

5.1 Scale, suitable for weighing the bales to an accuracy of at least 1/1 000.

5.2 Balance, suitable for weighing the test pieces to an accuracy of at least 1/5 000. The balance shall have a capacity of at least 5 kg and a sensitivity of 0,1 g. Its weighing pan (or weighing table) shall be wide enough to accommodate the test pieces so that they do not protrude outside the rim of the pan.

NOTE 1 As the test pieces are weighed when still hot, they cause an upstream flow of air around the weighing pan and, in consequence, a negative error in the balance reading. This error is minimized if the pan is wide enough so that no part of the test pieces protrudes outside the rim of the pan.

5.3 Equipment, for cutting the disc-shaped test pieces, comprising a commercial drill of about 1 kW, a drill stand, and a cutting tool. (See Figure 1 and Figure 2.)

5.4 Series of 35 cards, showing the complete sequence of sampling positions in each lap or wad from which the discs are to be cut. (See clause 7 and Figure 3 and Figure 4.)

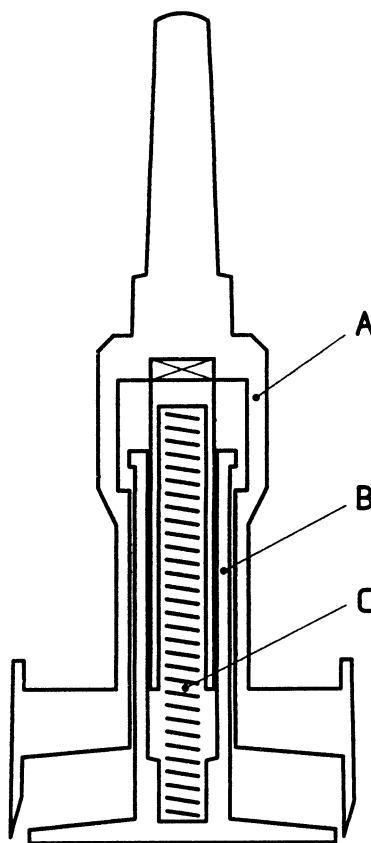
One sample is taken from every wad, in the position indicated by the sampling cards, which have one corner clipped to ensure correct orientation.

Thirty-five cards are prepared and one sampling position is marked on each, so that each card represents the surface of one slab. A card size of 100 mm × 75 mm is suitable. The cards are divided into seven strips of equal width in one direction, and five in the other, thus giving 35 sampling positions over the whole surface of the lap.

5.5 Equipment, for storing the test pieces to prevent them from gaining or losing mass before weighing.

5.6 Drying oven, with good ventilation, and capable of being controlled at $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$.

5.7 Drying containers, fitted with wire mesh.



Outer rotating part, consisting of a cone, an outer casing with four arms holding two cutting knives, and two chip breakers.

Inner stationary part, consisting of a circular footplate, and an inner casing with spring holder and ball bearing.

Coil spring, which expands between the rotating and the stationary parts.

Figure 1 — Cutting tool (see 5.3)