SLOVENSKI STANDARD
SIST EN ISO 801-3:1997

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Vlaknine - Določanje prodajne mase v balah - 3. del: Poenotenje bal

Pulps - Determination of saleable mass in lots - Part 3: Unitized bales (ISO 801-3:1994)

Zellstoffe - Bestimmung des Handelsgewichtes von Lieferposten - Teil 3: Großballen (ISO 801-3:1994)

Pâtes - Détermination de la masse marchande des lots - Partie 3: Ballots (ISO 801-3:1994)

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Pulps - Determination of saleable mass in lots - Part 3: Unitized bales (ISO 801-3:1994)

Pâtes - Détermination de la masse marchande des lots - Partie 3: Ballots (ISO 801-3:1994)

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

The text of the International Standard from Technical Committee ISO/TC 6 "Paper, board and pulps" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 172 "Pulp, paper and board", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 1997, and conflicting national standards shall be withdrawn at the latest by March 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 801-3:1994 has been approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO 801-3

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Pulps — Determination of saleable mass in lots —

Part 3: Unitized bales

Pâtes — Détermination de la masse marchande des lots —

Partie 3: Ballots

Reference number
ISO 801-3:1994(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 801-3 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 5, *Test methods and quality specifications for pulp*.

ISO 801 consists of the following parts, under the general title *Pulps — Determination of saleable mass in lots*:

— *Part 1: Pulp baled in sheet form*

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

— *Part 3: Unitized bales*

Annexes A and B of this part of ISO 801 are for information only.

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Pulps — Determination of saleable mass in lots —

Part 3:
Unitized bales

1 Scope

This part of ISO 801 specifies a method for determining the dryness of a lot of pulp baled in sheet form and shipped as unitized bales, and for calculating its saleable mass.

This method is applicable to all kinds of pulp baled in sheet form and shipped as unitized bales. It does not apply to pulp baled in lots in slab form or to pulp shipped as single bales.

An example of a full certificate of analysis and related calculations is given in annex A. Annex B gives details of equipment for marking the position of specimen sheets in sample bales.

2 Definitions

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

2.1 lot: The total number of unitized bales of the same sort of pulp of specific characteristics.

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

A lot of unitized bales of pulp is said to be "with specification" if it is accompanied by a certificate of origin stating for each bale unit either

— its gross mass (2.4) and its absolute dryness (2.6),

or

— its saleable mass (2.9).

2.2 unit: A set of bales strapped together. Usually a unit (unitized bale) consists of eight individual bales, each having its own wrappings and wires, strapped together with steel bands to facilitate shipping and handling.

2.3 bale: An individually strapped package of pulp sheets.

2.4 gross mass: The total mass of a bale, a unit, a part of a lot or a lot comprising

— contents;

— wrappers (pulp — paper);

— packaging wires or strappings of individual bales.

2.5 oven-dry mass: The mass obtained on drying pulp at 105 °C ± 2 °C, until constant mass is reached.

2.6 absolute dryness: The ratio of the oven-dry mass (2.5) of the pulp to its initial mass, expressed as a percentage.

2.7 air-dry mass: The mass of the pulp when its moisture content is in equilibrium with the ambient atmosphere.

2.8 theoretical commercial dryness: A conventional equilibrium value of 88 % or 90 % according to the country and/or commercial agreements.[1)]

2.9 saleable mass: The gross mass (2.4) multiplied by the absolute dryness (2.6) divided by the theoretical commercial dryness (2.8). Usually, it approximates to the air-dry mass (2.7).

2.10 invoiced mass: The saleable mass (2.9) indicated by the vendor on the invoice.

3 Principle

From the lot, sample units are taken in number which is a function of the total number of units in the complete lot. The bales in the sample units are weighed[2)] and collected so that the bales of each unit form one group.

Five specimen sheets are selected from each sample bale under defined conditions.

From each specimen sheet, a test piece is cut in the form of a triangle, as indicated in clause 6.

The test pieces are weighed and dried to constant mass to determine their oven-dry mass (2.5).

The saleable mass (2.9) of the lot is then calculated.

4 Apparatus

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

4.2 Balance, of sensitivity 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.

4.3 Equipment, for marking the position of the specimen sheets to be selected (see annex B) and the test pieces in these sheets, as well as for cutting them.

4.4 Equipment, for storing at least 40 test pieces to prevent them from gaining or losing mass before weighing.

4.5 Drying oven, with good ventilation, and capable of being controlled at 105 °C ± 2 °C.

5 Sample units

All the sample units shall be representative of the lot and for this purpose, so far as possible, these units should be selected at random from all parts of the lot. In the absence of any other agreement between the interested parties, the available part of the lot to be examined shall be not less than half the complete lot at the time of examination.

If the units or bales in the units have identification numbers relating to several series, the sample units shall be selected as far as possible in proportion to the size of each of these series.

The sample units shall be intact and as little damaged as possible, and shall not include

— bales showing signs of definite drying or wetting, as may happen with bales situated on the external faces of a stack;

— bales or wrappings of bales having deteriorated, or showing clear signs of accidental localized wetting or loss;

— bales carrying traces of previous sampling;

— bales whose number is illegible or is not contained in the specification, if this is a lot specified unit by unit.

The number of sample units, n, to be taken is, up to a lot size of 650 units, determined by the formula

$$n = \sqrt{N}$$

where N is the total number of units in the lot.

1) 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.

2) The mean of the gross mass of the sample units is considered as being the mean of the gross mass of all the units in the lot.

For lots exceeding 650 units, the number of sample units is 25 plus one additional sample unit for each additional 100 units in the lot.

The number of sample units to be taken is given in table 1.

For frozen pulp, the sampling shall be postponed until the bales have thawed, so that satisfactory test pieces can be cut from the sheets.

NOTE 2 If the number of sample units is determined as stated above, the number of sample bales will be of the same order as the maximum number of sample bales in ISO 801-1 for a similar lot. Practice has shown that the minimum number of bales as stated in ISO 801-1 very seldom is enough for a satisfactory accuracy. One reason for this is that nowadays the gross masses of the bales are not always adjusted to 200 kg but can vary by almost 10 %.

Table 1 — Number of sample units to be taken

Total number of units in lot	Number of sample units
Up to 12	3
13 to 20	4
21 to 30	5
31 to 40	6
41 to 55	7
56 to 70	8
71 to 90	9
91 to 110	10
111 to 130	11
131 to 155	12
156 to 180	13
181 to 210	14
211 to 240	15
241 to 270	16
271 to 305	17
306 to 340	18
341 to 380	19
381 to 420	20
421 to 460	21
461 to 505	22
506 to 550	23
551 to 600	24
601 to 650	25
651 to 750	26
751 to 850	27
851 to 950	28
etc.	

6 Procedure

6.1 Weighing of sample bales

Determine the gross mass of each sample bale in each sample unit separately and report the results to an accuracy between 1/500 and 1/1 000; report, if possible, their marks and references in the order of their weighing; from the results, calculate the gross mass of each sample unit. Check the scale (4.1) before the weighings and during the course of the operation.

If the moisture content of the sheets of pulp serving as wrappers obviously differs from that of the rest of the bale, or if the wrappers are invoiced separately, test them separately in accordance with 7.2.

NOTE 3 The sample units can be weighed as such, if there is a scale suitable for weighing the units to an accuracy of at least 1/1 000. In this case, the strappings (steel bands) holding the unit together are weighed separately and their mass is subtracted from the gross mass of the unit.

6.2 Selection of specimen sheets

Select five specimen sheets from each sample bale, as specified below, as soon as possible after weighing.

Draw five sheets from each sample bale, the distance between the sheets being constant and equal to one-fifth of the total thickness of the bale. Do not take the sheets from the same positions in each bale, but select them according to the procedure specified below and illustrated in figure 1. If the number of bales in the units deviates from eight, give the bales a running number starting from sample unit 1, sample bale 1 and take the sample sheets according to the diagram in figure 1. Thus, in the sample bale No. I, the first sheet is taken 1 cm from the extreme top, and the last sheet (the fifth) will be one-fifth of the thickness of the bale from the bottom. In sample bales Nos. II, III, IV, V and VI, VII and VIII, each sheet is taken from a slightly lower position (actually 1/70 of the thickness of the bale) than the corresponding sheet of the preceding bale; thus, in sample bale No. VIII, the first sheet will be taken 1/10 of the height of the bale from the top, and the last sheet will be 1/10 of the height of the bale from the bottom. The sample bale No. IX will recommence the cycle and be treated in the same way as the sample bale No. I, etc.

Select all specimen sheets very carefully, especially those within about 5 cm from the top and the bottom of the bale.

The specimen sheets can be selected easily with the aid of an appropriately graduated measuring rod (see annex B). Place the rod in an inclined position against the side of the bale, so that its lower end is at the level of its top. The faces on the rod correspond to the cycle of eight bales and the lines correspond to the five specimen sheets in the table.