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**Tea sacks — Specification —**

**Part 2:**

Performance specification for sacks for  
palletized and containerized transport of tea

*Sacs à thé — Spécifications —  
Partie 2: Spécifications de performance des sacs utilisés pour le transport  
palettisé et conteneurisé du thé*

ISO 9884-2:1999

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## Foreword

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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 9884-2 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Subcommittee SC 8, *Tea*.

ISO 9884 consists of the following parts, under the general title *Tea sacks — Specification*:

- *Part 1: Reference sack for palletized and containerized transport of tea*
- *Part 2: Performance specification for sacks for palletized and containerized transport of tea*

Annexes A and B form an integral part of this part of ISO 9884. Annex C is for information only.

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Printed in Switzerland

## Introduction

ISO 9884-1 specifies the materials, construction and dimensions of a reference sack which has been demonstrated by rigorous transport and storage trials to be suitable for the palletized and containerized transport of tea. Continuing development of improved materials is resulting in the availability of sacks of different materials and construction to serve this purpose. This part of ISO 9884 sets minimum requirements and performance tests to ensure that such sacks are equivalent or superior in performance to the reference sack. Guidance on the filling of tea sacks is given in annex C, for information only.

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# Tea sacks — Specification —

## Part 2:

## Performance specification for sacks for palletized and containerized transport of tea

### 1 Scope

This part of ISO 9884 specifies requirements and tests to determine the suitability of sacks for the palletized and containerized transport of tea on standard pallets of standard unit load size in standard containers (see ISO 9884-1).

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### 2 Normative references

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

ISO 1573:1980, *Tea — Determination of loss in mass at 103 °C.*

ISO 2758:—<sup>1)</sup>, *Paper — Determination of bursting strength.*

ISO 4120:1983, *Sensory analysis — Methodology — Triangular test.*

ISO 4121:1987, *Sensory analysis — Methodology — Evaluation of food products by methods using scales.*

ISO 6590-1:1983, *Packaging — Sacks — Vocabulary and types — Part 1: Paper sacks.*

ISO 7965-1:1984, *Packaging — Sacks — Drop test — Part 1: Paper sacks.*

ISO 9884-1:1994, *Tea sacks — Specification — Part 1: Reference sack for palletized and containerized transport of tea.*

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<sup>1)</sup> To be published. (Revision of ISO 2758:1983)

### 3 Definitions

For the purposes of this part of ISO 9884, the definitions given in ISO 6590-1 apply.

### 4 Requirements

#### 4.1 Sack type

Sacks shall be constructed with flat hexagonal ends and shall consist of at least two plies.

#### 4.2 Dimensions

The filled sack dimensions shall be as given in table 1 of ISO 9884-1:1994.

#### 4.3 Construction materials

##### 4.3.1 General

All materials used in the construction of the sack (paper, plastics, adhesive, barrier ply) shall be free from taint and/or odour. No materials containing chlorophenols or their derivatives shall be used.

##### 4.3.2 Outer ply

The outer-ply material shall have a minimum wet burst index of 1,2 kN/g, when tested in accordance with ISO 2758.

##### 4.3.3 Innermost ply

The inner ply shall be an aluminium-foil-coated barrier ply with the aluminium facing inwards, complying with ISO 9884-1, or of a material having a permeability to chlorophenol or chloroanisole not greater than that of the inner ply of a sack complying with ISO 9884-1 when tested by the method given in annex B.

#### 4.4 Performance requirements

##### 4.4.1 Drop test

When a minimum of three sacks filled with 60 kg of tea are dropped three times (once each on a face, butt and side) from a constant height of 3 m, in accordance with the method given in ISO 7965-1, there shall be no rupture of sacks resulting in loss of contents.

##### 4.4.2 Transport trials

Sacks shall match or surpass the performance of reference sacks (see ISO 9884-1) throughout a minimum of 6 months of intercontinental transport trials carried out in accordance with annex A.

### 5 Test report

The test report may be used by a sack manufacturer to certify that a sack conforms to the requirements of this specification. It shall specify the following details.

- a) Sack specification:
  - 1) materials;
  - 2) construction (number and type of plies);
  - 3) dimensions.

- b) Drop test results:
- 1) number of sacks tested and date(s) of the test;
  - 2) mass and type of tea;
  - 3) name of organization performing the test.
- c) Transport trials:
- 1) place and date of production, grades and invoice/bulk numbers of the tea;
  - 2) moisture content of the tea at point of packing;
  - 3) number and mass of the reference sacks and the trial sacks packed for each bulk/invoice;
  - 4) place and date of packing/palletization;
  - 5) date and means/route of transport to port of loading;
  - 6) port and date of departure;
  - 7) vessel and details of
    - stowage of the test and reference pallets,
    - other cargo carried;
  - 8) route of the voyage and the date of arrival in the terminal port;
  - 9) means of transport to, and place and date of opening the containers;
  - 10) condition on receipt (see A.2.4);
  - 11) numbers of sample sacks and mass of samples taken;
  - 12) moisture contents of the samples and the name of the organization carrying out the analysis;
  - 13) names and affiliations of the tea tasters carrying out the organoleptic assessments, the dates of the assessments and the results.

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## Annex A (normative)

### Transport trials

#### A.1 General procedure

Trial sacks shall be compared with reference sacks (see ISO 9884-1) filled with the same bulk or invoice of tea at the same time under identical conditions, transported together and opened at the same time under identical conditions.

At least 1 000 filled test sacks shall be shipped in a minimum of four vessels over a minimum period of 6 months in a minimum of two containers per vessel. Each test container shall hold at least 100 trial sacks and 100 reference sacks.

The test and reference sacks shall be compared on the basis of:

- incidence and extent of sack damage;
- incidence and extent of product spillage/loss;
- moisture content of tea on arrival;
- organoleptic quality of tea on arrival.



#### A.2 Specific procedures

**A.2.1** Tea from the same bulk or invoice shall be used to fill equal numbers of trial and reference sacks.

**NOTE** Several bulks may be used to make up paired pallet loads of trial and reference sacks to fill the test containers.

**A.2.2** A minimum of three samples of each bulk of tea shall be taken during the sack-filling operation. The moisture content of each sample shall be determined in accordance with the method given in ISO 1573.

**A.2.3** Paired pallets of trial sacks and reference sacks shall be placed adjacently in the test container, alternating in position to achieve an even distribution from side to side and top to bottom.

EXAMPLE

T R T TR

R T R RT

where T is a trial sack and R is a reference sack.

**A.2.4** On arrival at the destination, the condition of the contents of each test container shall be examined as they are removed and stored in the warehouse. An inspection record shall be completed (with photographs illustrating damage) setting out:

- dates of arrival and unpacking;
- the condition, appearance and stability of each pallet load (test and reference sacks);



- the damage incurred by both test and reference sacks;
- the extent of any product spillage/loss.

**A.2.5** Samples shall be taken on arrival from undamaged trial sacks and reference sacks at the top, middle and bottom of each pallet, and these samples shall be bulked. The moisture contents of the bulked samples shall be determined in accordance with the method given in ISO 1573. The moisture contents of samples from trial pallets shall not exceed those of samples from the paired reference pallets.

**A.2.6** At least two consignments of tea, having successfully completed a transport trial from producing factory to purchaser's warehouse, shall be subjected to a comparative taste assessment. This shall be carried out by a minimum of four professional tea tasters (at least two of whom shall be independent of the producer and the purchaser) on bulked samples from reference and test pallets containing the same original bulk tea.

The first step in this assessment shall be a difference test carried out according to the method given in ISO 4120. If no significant difference ( $P$  less than 0,05) is found, the trial sack shall be deemed to have passed the test. If a significant difference is found, a preference test shall be carried out in accordance with the method given in ISO 4121 to determine which sample(s) is (are) of the higher quality. The trial sack shall be deemed to have passed the test if the contents of the reference sacks are not significantly preferred over the contents of the trial sacks ( $P$  less than 0,05).

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