International Standard 6599/1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Packaging — Sacks — Conditioning for testing — Part 1 : Paper sacks

Emballages — Sacs — Conditionnement pour essais — Partie 1 : Sacs en papier

First edition — 1983-04-15

UDC 621.798.15 : 676.821 **Ref. No. ISO 6599/1-1983 (E)**

Descriptors : packages, bags, testing conditions.

Price based on 2 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6599/1 was developed by Technical Committee ISO/TC 122, *Packaging*, and was circulated to the member bodies in February 1982.

It has been approved by the member bodies of the following countries :

Australia	India	South Africa, Rep. of
Austria	Ireland	Spain
Brazil	Israel	Sweden
Canada	Italy	Switzerland
Denmark	Japan	Turkey
Egypt, Arab Rep. of	Malaysia	United Kingdom
Finland	Netherlands	USA
France	Poland	USSR
Germany, F. R.	Romania	Yugoslavia

No member body expressed disapproval of the document.

Printed in Switzerland

Packaging — Sacks — Conditioning for testing — Part 1 : Paper sacks

0 Introduction

The physical properties of paper are affected materially by its moisture content, which is dependent on the humidity and temperature of the surrounding atmosphere. In order that tests may be made on a paper sack in a defined physical state, it is brought into equilibrium with an atmosphere of standardized temperature and relative humidity, and tested in that atmosphere.

1 Scope

This part of ISO 6599 specifies the conditioning atmospheres and the method for conditioning samples of intact, empty paper sacks before and during testing.

If only conventional paper tests are to be carried out on the material of a sack, samples of this material shall be cut out and conditioned as specified in ISO 187.

2 Field of application

This part of ISO 6599 applies to all types of empty paper sacks as specified in ISO 6590/1.

3 References

ISO 187, *Paper and board — Conditioning of samples.*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications.*

ISO 6590/1, *Packaging — Sacks — Vocabulary and types — Part 1 : Paper sacks.*[1)]

4 Principle

Exposure of empty sacks to a conditioning atmosphere so that a state of temperature and moisture content equilibrium is reached between the sacks and this atmosphere.

5 Definitions

For the purposes of this International Standard, the following definitions apply.

5.1 relative humidity (R.H.) : The ratio of the absolute humidity of the air to the humidity of air saturated with water vapour at the same temperature and pressure.

NOTE — This ratio is usually expressed as a percentage. At ordinary atmospheric temperatures, this ratio is almost exactly equal to the ratio of the actual vapour pressure to the saturation vapour pressure at the same (dry bulb) temperature.

5.2 conditioning : The establishment of a temperature and moisture content equilibrium between empty sacks and an atmosphere of specified temperature and relative humidity.

6 Conditioning atmospheres

The table indicates suitable conditioning atmospheres.

Unless otherwise stated in the relevant specifications or test methods, or agreed between the interested parties, atmosphere 23/50 shall be used.

NOTE — The temperature and relative humidity conditions are those specified in ISO 187 and ISO 554. The tolerances quoted are the reduced or close tolerances specified in ISO 554.

Table

Designation	Temperature °C	Relative humidity %	Remarks
23/50	23 ± 1	50 ± 2	Preferred atmosphere
27/65	27 ± 1	65 ± 2	Where made necessary by climatic conditions at the test location
20/65	20 ± 1	65 ± 2	—

1) At present at the stage of draft.

7 Equipment

7.1 Room and measuring instrumentation

The room in which conditioning is carried out shall be provided with automatic equipment for bringing the air to standard conditions of temperature and relative humidity and for so circulating it that these conditions are uniformly maintained at all relevant points within it. It is recommended that a recording hygrometer, periodically checked by a standard method (for example with calibrated wet and dry bulb thermometers), be kept in the test space for checking purposes.

7.2 Determination of temperature and relative humidity

The relative humidity of the conditioning air shall be determined by a reliable method. Where a wet and dry bulb hygrometer is used, it shall be placed in an air current of the speed required by the tables used. This shall be not less than 2 m/s.

When the thermometers of the hygrometer are at the same temperature, with the bulbs dry, the difference in reading shall not exceed 0,2 °C.

8 Procedure

The sacks shall be so suspended that the conditioning air circulates freely to all their outer surfaces and, in the case of open mouth sacks, to as much of the inner surface of the innermost ply as possible.

8.1 Minimum conditioning period for sacks without barrier plies

Sacks without barrier plies shall be kept in the conditioning atmosphere for at least 24 h.

8.2 Minimum conditioning period for sacks with barrier plies

Sacks with one or more barrier plies shall be kept in the conditioning atmosphere for at least 7 days.

NOTES

1 ISO 187 calls for preconditioning in an atmosphere of low relative humidity. Preconditioning is omitted here as with some sack constructions it may cause larger errors than those it reduces.

2 Where the sack is to be filled with a product after conditioning, the product may change the moisture content of the paper and a further period for moisture equilibration may be needed; this should be not less than the minimum conditioning periods given in 8.1 or 8.2.

9 Test report

The test report shall include the following particulars :

a) a reference to this part of ISO 6599;

b) the conditioning atmosphere used (23/50, 27/65 or 20/65);

c) the time taken to condition the sacks;

d) any deviation from this part of ISO 6599.