International Standard ISO 2876

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

Packaging — Complete, filled transport packages — Rolling test

Emballages — Emballages d'expédition complets et pleins — Essai de roulement

Second edition — 1985-11-15

UDC 621.798.1 : 620.165.7 **Ref. No. ISO 2876-1985 (E)**

Descriptors : packing, transport packing, complete and filled packages, tests, rolling tests.

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 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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 2876 was prepared by Technical Committee ISO/TC 122, *Packaging*.

ISO 2876 was first published in 1973. This second edition cancels and replaces the first edition, which has been technically revised as follows :

- a note has been added to clause 1;
- a new clause on "Package preparation" has been added;
- a new sub-clause ("Inspection" 7.3) has been added.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Packaging — Complete, filled transport packages — Rolling test

1 Scope and field of application

This International Standard specifies a method for conducting rolling tests on a complete, filled transport package. It may be performed either as a single test to investigate the effects of rolling or as part of a sequence of tests designed to measure the ability of a package to withstand a distribution system that includes a rolling hazard.

NOTE — A toppling test may be more suitable for packages which are tall in relation to their base dimensions, or the height of which is small by comparison with base dimensions but which may be stored or transported resting on a side face. The toppling test is recommended for packages where the ratio of the longest to the shortest sides is of the order of 3 : 1 or greater. A method of carrying out a toppling test on a complete, filled transport package is under preparation.

2 References

ISO 2206, *Packaging — Complete, filled transport packages — Identification of parts when testing.*

ISO 2233, *Packaging — Complete, filled transport packages — Conditioning for testing.*

3 Principle

Rolling of the test package so as to impact on each face in turn.

4 Apparatus

Impact surface, horizontal and flat, massive enough to be immovable and rigid enough to be non-deformable under test conditions.

NOTE — In normal circumstances the impact surface provided shall be

- integral with a mass at least 50 times that of the heaviest package to be tested;
- flat, such that no two points on its surface differ by more than 2 mm; however, where one of the dimensions of the test package in contact with the surface is greater than 1 000 mm, a maximum difference in surface level of 5 mm will be acceptable;
- rigid, such that it will not be deformed by more than 0,1 mm when an area of 100 mm^2 is loaded statically with 10 kg anywhere on the surface;
- sufficiently large to ensure that the test package falls entirely upon the surface.

5 Package preparation

The test package shall normally be filled with its intended contents. However, simulated or dummy contents may be used, on condition that the dimensions and physical properties of such contents shall be as close as possible to those of the intended contents.

Ensure that the test package is closed normally, as if ready for distribution. If simulated or dummy contents are used, ensure that the normal method of closure is still employed.

6 Conditioning

The package shall be conditioned in accordance with one of the conditions described in ISO 2233.

7 Procedure

Whenever possible the test shall be carried out in the same atmospheric conditions as used for conditioning, where this is critical to the materials or application of the package. In other circumstances, the test shall be carried out in atmospheric conditions which are as near as practicable to those used for conditioning.

7.1 Parallelepipedal packages

Define the panels and edges of the test package using the requirements given in ISO 2206.

Place the package on the impact surface (see clause 4) with surface 1 uppermost.

Tilt the package by hand with the edge 3-4 resting on the impact surface until the point of balance on this edge is reached. Then permit it to overbalance without thrust so as to impact on surface 4.

Repeat this procedure until the sequence given in the table is completed.

Table

Balance on edge	Impact on surface
3-4	4
4-1	1
1-2	2
2-3	3
3-6	6
6-1	1
1-5	5
5-3	3

NOTE — If the dimensions of one surface are small it will sometimes occur that two of the above impacts will occur consecutively after one release. In such instances the test will proceed as though each of the impacts had occurred separately.

7.2 Packages of other shapes

The procedure shall be as close to that described in 7.1 as is possible.

7.3 Inspection

On completion of the test sequence, the test package and its contents shall be examined for damage.

8 Test report

The test report shall include the following particulars :

a) reference to this International Standard;

b) number of replicate packages tested;

c) full description of the package, including dimensions, structural and material specifications of the package and its fittings, cushioning, blocking, closure or reinforcing arrangements;

d) description of contents — if simulated or dummy contents were used, full details shall be given;

e) gross mass of package and mass of contents, in kilograms;

f) relative humidity, temperature and time of conditioning; temperature and relative humidity of test area at time of test; whether these values comply with the requirements of ISO 2233;

g) any deviations from the test method described in this International Standard;

h) a record of the result, with any observations which may assist in correct interpretation;

j) date of the test;

k) signature of tester.