International Standard

2244

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION MEX DY HAPODHAR OPPAHU3ALUR TO CTAHDAPTU3ALUNOORGANISATION INTERNATIONALE DE NORMALISATION

Packaging — Complete, filled transport packages — Horizontal impact tests (horizontal or inclined plane test; pendulum test)

Emballages — Emballages d'expédition complets et pleins — Essais de choc horizontal (essai sur plan horizontal ou incliné; essai au pendule)

Second edition - 1985-11-01

UDC 621.798.1:620.165.7

Descriptors : packing, transport packing, complete-and filled packages, tests, impact tests.

Foreword

3.52

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 2244 was prepared by Technical Committee ISO/TC 122, *Packaging*.

ISO 2244 was first published in 1972. This second edition cancels and replaces the first edition, which has been technically revised as follows:

- a horizontal plane test method has been specified;
- a new clause on "Package preparation" 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 — Horizontal impact tests (horizontal or inclined plane test; pendulum test)

1 Scope and field of application

This International Standard specifies methods of horizontal impact testing (horizontal or inclined plane test and pendulum test) on a complete, filled transport package. The test may be performed either as a single test to investigate the effects of horizontal impact or as part of a sequence of tests designed to measure the ability of a package to withstand a distribution system that includes a horizontal impact hazard.

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

Applying a horizontal velocity to the test package and bringing it to a halt by impact with a vertical impact surface. The atmospheric conditions, the horizontal velocity and the attitude of the package are predetermined. Particular conditions of impact may be simulated by placing appropriately profiled inserts between the impact surface and the impacting face or edge of the test package.

4 Apparatus

4.1 Impact surface, which should be either

a) a plane inclined to the vertical at 10 \pm 1° (for the inclined plane test), or

b) a plane vertical to within 1° (for the horizontal or pendulum test).

The dimensions of the impact surface shall be greater than those of the impacting face, or selected part, of the test package. The impact surface shall be sufficiently rigid not to deflect more than 0,25 mm when a load of 160 kg/cm^2 is applied anywhere on the surface.

In addition, the apparatus shall meet the requirements and tolerances specified in clause 7.

4.2 Optional interposed hazards, to be used when it is required to concentrate the impact in a particular area of the test package.

The dimensions, material and location of the interposed hazard shall be carefully specified.

Example: A steel beam with a length of 200 mm and a crosssection of 100 (\pm 1) mm × 100 (\pm 1) mm with rounded edges of radius 5 \pm 0,1 mm, placed centrally in the impact surface (4.1).

4.3 Impact testing apparatus: Types of apparatus that may be used are described in 4.3.1, 4.3.2 and 4.3.3.

4.3.1 Inclined plane tester, consisting of the following items:

4.3.1.1 Two-rail steel track, inclined at 10° to the horizontal. The distance along the incline shall be graduated at intervals of 50 mm. (See figure 1.)

4.3.1.2 Rolling carriage or dolly: The surface friction between the rolling carriage/dolly and the test package shall be such that during movement from rest to impact the package will not move in relation to the carriage, but such that upon impact the package will move freely.

4.3.1.3 Impact surface (or bumper), meeting the specifications of 4.1, placed at the bottom of the track with its face perpendicular to the direction of movement of the carriage down the track.

NOTES

1 A suitable impact surface comprises a number of heavy timbers mounted horizontally across the face of the structure such that the optional interposed hazard (4.2) can be fitted easily when required.