



SLOVENSKI STANDARD

SIST EN 15552:2008

01-oktober-2008

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Packaging - Complete, filled transport packages and unit loads - Performance testing schedules for common distribution chains

Verpackung - Versandfertige Packstücke und Ladeeinheiten - Prüfpläne für gewöhnliche Transportketten

Emballage - Emballages d'expédition complets et pleins et charges unitaires - Programmes d'essai de performance pour circuits de distribution courants

Ta slovenski standard je istoveten z: EN 15552:2008

ICS:

55.180.40	Celovita, napolnjena transportna embalaža	Complete, filled transport packages
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EUROPEAN STANDARD

EN 15552

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2008

ICS 55.180.40

English Version

Packaging - Complete, filled transport packages and unit loads - Performance testing schedules for common distribution chains

Emballages - Emballages d'expédition complets et pleins et
charges unitaires - Programmes d'essai de performance
pour circuits de distribution courants

Verpackung - Versandfertige Packstücke und
Ladeeinheiten - Prüfpläne für gewöhnliche Transportketten

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Foreword

This document (EN 15552:2008) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by February 2009, and conflicting national standards shall be withdrawn at the latest by February 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

Packaging is designed for many functions in the distribution of goods like packing, handling, storage, transport, information, promotion, tamper proofing, easy opening, etc.

This European Standard is intended to assess the protection of goods through handling, storage and transport of packages.

The objective is also to check whether the packaging is just sufficient to the level of stresses, but without excess.

Alternatives are sometimes proposed to better cover actual likely hazards.

The specified testing schedules cross-reference well recognized international testing methods.

EN 13011 defines a system for the declaration of performance conditions within goods transport chains.

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1 Scope

This European Standard specifies methods of deriving schedules for testing completed, filled transport packages and unit loads, representative of current distribution chains within Europe.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14149:2003, *Packaging – Complete, filled transport packages and unit loads – Impact test by rotational drop.*

EN 22206, *Packaging – Complete, filled transport packages – Identification of parts when testing (ISO 2206:1987)*

EN 22248, *Packaging – Complete, filled transport packages – Vertical impact test by dropping (ISO 2248:1985)*

EN 28768, *Packaging – Complete, filled transport packages – Toppling test (ISO 8768:1986)*

EN ISO 2233:2001, *Packaging – Complete, filled transport packages and unit loads – Conditioning for testing (ISO 2233:2000)*

EN ISO 2234:2002, *Packaging – Complete, filled transport packages and unit loads – Stacking tests using a static load (ISO 2234:2000)*

EN ISO 2244, *Packaging – Complete, filled transport packages and unit loads – Horizontal impact tests (ISO 2244:2000)*

EN ISO 2247:2002, *Packaging – Complete, filled transport packages and unit loads – Vibration tests at fixed low frequency (ISO 2247:2000)*

EN ISO 12048, *Packaging – Complete, filled transport packages – Compression and stacking tests using a compression tester (ISO 12048:1994)*

EN ISO 13355, *Packaging – Complete, filled transport packages and unit loads – Vertical random vibration test (ISO 13355:2001)*

ASTM D4003, *Standard test methods for programmable horizontal impact test for shipping containers and systems*

ASTM D5277, *Standard test method for performing programmed horizontal impacts using an inclined impact tester*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1

test item

complete, filled transport package or unit load

EN 15552:2008 (E)**3.2****single testing**

specific test intended to check the reaction of a complete, filled transport package or unit load to a predetermined stress

3.3**test schedule**

succession of single testings, carried out in a predetermined order on the same complete, filled transport package or unit load, in predetermined climatic conditions

4 Distribution chains and categorized shipped packages**4.1 Parcels delivery**

Covers single packages intended for delivery either by express service (normally within 24 hours) such as overnight postal service or by parcel services (generally over 48 hours).

4.2 Packages with intended shipping position

Covers packages fitted with integrated down bearers for easy handling by forklift equipments (i.e. platform, skids) and packages of products with known shipping position (i.e. refrigerator).

4.3 Palletized loads

Covers all structured stacks of packages on pallets, together with possible stability fittings (interleaves, corner posts, shrink/stretch films, etc).

4.4 Packages in maritime containers

Covers the maritime shipping of structured stacks of packages in containers, including connected road transportations.

5 Relevant single testings and options

NOTE The single tests given in Clause 5 are those used in the test schedules in Table 6.

5.1 Climatic conditioning

To reproduce the ambient climates in distribution chains.

The preferred atmospheric conditions from EN ISO 2233:2001 are given in Table 1. Other atmospheric conditions from Table 1 of EN ISO 2233:2001 may be chosen by mutual agreement between the parties; care should be taken that equilibrium has been reached before testing starts.

Table 1 — Climatic Conditioning in accordance with EN ISO 2233:2001

Condition (Table 1 EN ISO 2233: 2001)	Temperature (°C)	Relative humidity (%)	Rationale
7	+ 23	50	dry environment
5	+ 20	65	standard
8	+ 30	85	moist environment
4	+ 5	85	cold environment

NOTE Avoid dew point when not occurring during distribution.

5.2 Stacking Test

To investigate the effects of the compression stresses under static load.

The reference load is the static force exerted by the vertical loads on the lower base tier, as for storage.

Tests are carried out according to EN ISO 12048 or EN ISO 2234:2002, Method 2. If the dead load test is used the test item shall be maintained at the chosen atmospheric conditions for the duration of the test.

Options and rationales are given in Table 2.

Table 2 — Stacking tests

Testing mode	Rationale
EN ISO 12048 - Compressive force applied through a fixed platens type compression machine.	To quickly check packaging systems known from experience.
EN ISO 2234:2002, Method 2 - Application of a static unguided dead load.	To test packaging systems of unknown reaction.

NOTE Testing mode commonly used by manufacturers or for quality control.

NOTE Depending on the nature of the packaging under test, the results from guided and unguided tests might not be comparable.

5.3 Vibration Test

To investigate the effects of bouncing of packages, dynamic stressing of unit loads, and all collateral effects, induced by vibrations during transport.

Testing shall be carried out in accordance with EN ISO 2247:2002, Method B, or EN ISO 13355.

Options and rationales are given in Table 3.