



**SLOVENSKI STANDARD**  
**SIST EN 13054:2002**  
**01-januar-2002**

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Packaging - Complete, filled transport packages - Test methods for the determination of the centre of gravity of a package

Verpackung - Versandfertige Packstücke - Prüfung zur Bestimmung des Schwerpunktes eines Packstückes

**iTeh STANDARD PREVIEW**  
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Emballages - Emballages d'expédition complets et pleins - Méthodes d'essai pour la détermination du centre de gravité d'un emballage

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**Ta slovenski standard je istoveten z: EN 13054:2001**

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**ICS:**

55.180.40	Celovita, napolnjena transportna embalaža	Complete, filled transport packages
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**SIST EN 13054:2002**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13054**

February 2001

ICS 55.180.99

English version

## Packaging - Complete, filled transport packages - Test methods for the determination of the centre of gravity of a package

Emballages - Emballages d'expédition complets et pleins -  
Méthodes d'essai pour la détermination du centre de  
gravité d'un emballage

Verpackung - Versandfertige Packstücke - Prüfung zur  
Bestimmung des Schwerpunktes eines Packstückes

This European Standard was approved by CEN on 1 December 2000.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This European Standard 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 August 2001, and conflicting national standards shall be withdrawn at the latest by August 2001.

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

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## Introduction

Two methods are described in this document. Other methods may be used.

It is the responsibility of the user of this Standard to establish appropriate safety and health practice in accordance with relevant legislation.

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## 1 Scope

This standard specifies two methods of determining the location of the centre of gravity of flat sided rigid packages.

In the following text, a package is called "a test item".

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:1999)*.

## 3 Principle

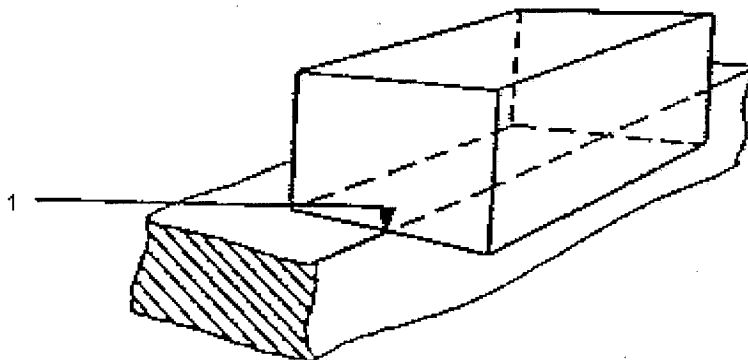
Determination of the centre of gravity of a test item by finding the position of balance.

## 4 Apparatus

Two types of apparatus are used according to the selected test method.

### 4.1 Apparatus for Procedure A : Using the edge of a rigid flat horizontal table

Determination of the balance position using the edge of a rigid flat horizontal table as shown in Figure 1. The table shall have a straight square edge and sufficient strength to support the test item.



#### Key

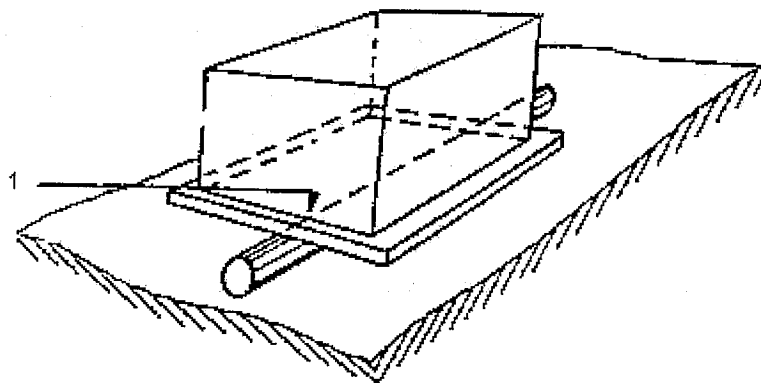
1 Balance position

Figure 1 — Procedure A : Using the edge of a rigid flat horizontal table to determine the balance position

## 4.2 Apparatus for Procedure B : Using a roller

### 4.2.1 Roller

Determination of the balance position by balancing the test item using a roller as shown in Figure 2. The rigid roller shall have sufficient diameter and length to allow free rolling movement under the test item as shown in Figure 2.



#### Key

1 Balance position

Figure 2 — Procedure B : Using a roller to determine the balance position

### 4.2.2 Rigid flat horizontal surface

### 4.3 Additional equipment

If needed, a flat board large enough to support entirely any face of the test item without the board deforming significantly. The mass of the board shall not exceed 5 % of the mass of the test item.

## 5 Test item preparation

The test item shall be filled with its intended contents. Ensure that the test item is closed normally as if ready for distribution.

## 6 Procedures

### 6.1 General

Procedure A is to be used for light items, which can be easily handled by one person. Heavier packages should be tested using procedure B.

Select and identify 3 faces which meet at a corner as reference faces, numbered according to EN 22206.

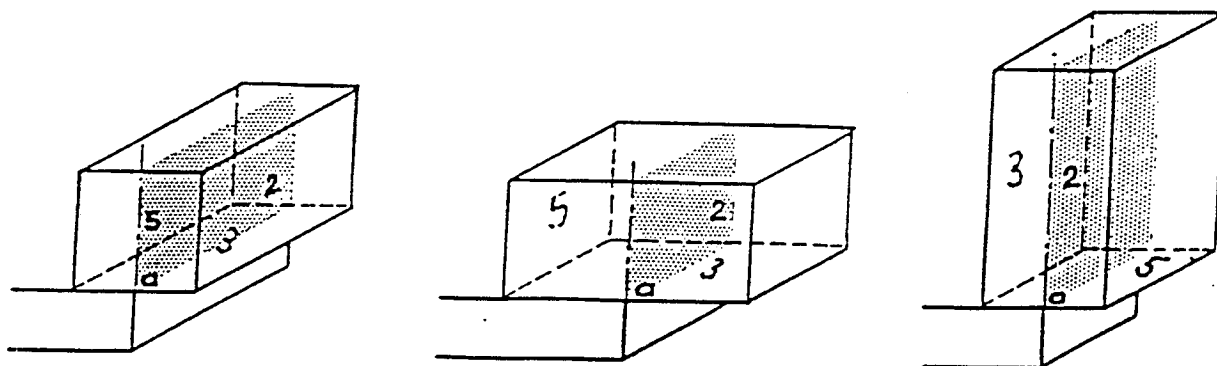
When an item travels on its base, it is convenient to use this base as a reference face.

NOTE Figures 3 and 4 show both methods using 2 faces, but orthogonal faces may be used.

### 6.2 Procedure A : Using the edge of a rigid flat horizontal table

Determine the balance position by using the edge of a rigid flat horizontal table as shown in Figure 3.





NOTE The numbering of the reference faces are given as an example.

**Figure 3 — Procedure A : Using a rigid table**

**6.2.1** Place the test item on the table on the first reference face with the end face of this test item level with the edge of the table.

**6.2.2** Pull the test item slowly and squarely off the table until the position of balance or tip is reached.

**6.2.3** If deformation of the test item occurs due to pressure from the edge, a flat rigid board should be placed centrally to support the test item.

**6.2.4** Ensure that the test item is loosely supported so that it does not fall off the table.

**6.2.5** The centre of gravity is within the cross section of the test item vertically in line with the edge of the table at the position of the balance.

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**6.2.6** Repeat the test for the two other reference faces to determine the centre of gravity.

**6.2.7** The centre of gravity is to be determined by the intersection of the three cross sections.

### 6.3 Procedure B : Using a roller

Determine the balance position by balancing the test item on a roller as shown in Figure 4.