
Toge plastične posode - Metoda za ugotavljanje odtekanja

Rigid plastics containers - Method for determination of drainability

Formstabile Kunststoffbehälter - Verfahren zur Bestimmung der Entleerbarkeit

Conteneurs en plastique rigide - Méthode de détermination de l'aptitude au vidage

Ta slovenski standard je istoveten z: EN 13973:2002[SIST EN 13973:2003](https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ff62c52ae/sist-en-13973-2003)<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ff62c52ae/sist-en-13973-2003>**ICS:**

55.100	Steklenice. Lonci. Kozarci	Bottles. Pots. Jars
55.140	Sodi. Kovinski sodi. Ročke	Barrels. Drums. Canisters

SIST EN 13973:2003**en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13973:2003

<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ff62c52ae/sist-en-13973-2003>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13973

October 2002

ICS 55.100; 55.140

English version

**Rigid plastics containers - Method for determination of
drainability**

Conteneurs en plastique rigide - Méthode de détermination
de l'aptitude au vidage

Formstabile Kunststoffbehälter - Verfahren zur Bestimmung
der Entleerbarkeit

This European Standard was approved by CEN on 19 August 2002.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ff62c52ae/sist-en-13973-2003>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions.....	5
4 Principle	6
5 Sampling	6
6 Apparatus	6
7 Procedure	6
8 Calculation	7
9 Test report	7

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13973:2003](https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003)

<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003>

Foreword

This document EN 13973:2002 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 April 2003, and conflicting national standards shall be withdrawn at the latest by April 2003.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 13973:2003](https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003)

<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003>

Introduction

The purpose of packaging is the containment, protection, distribution and promotion of products. A major role is prevention of product damage and/or product waste.

This European Standard was developed to test the design of a container and to provide requirements and test procedures to meet recommendations on residual product waste.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13973:2003](https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003)

<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003>

1 Scope

This European Standard specifies a method for determination on the drainability of plastic bottles and jars with a nominal capacity up to 5 l and of plastics canisters/jerricans with a nominal volume up to 20 l.

NOTE Plastics bottles, jars, canisters and jerricans are referred to as “containers” in this standard.

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 13974, *Rigid plastics containers - Specification of tolerance for dimensions, weight and volume*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13974:2002 (some of which are repeated below for convenience) and the following apply.

3.1

plastics bottle

rigid plastics container with shoulders and a small aperture, and generally blow moulded

[EN 13974:2002]

iTech STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/d9f929cf-ef43-4d0c-8a47-231ffe2c52ae/sist-en-13973-2003>

3.2

plastics jar

rigid plastics container of any base shape, with an aperture of area similar to that of the base

[EN 13974:2002]

3.3

plastics canister/jerrican

rigid plastics container with mostly rectangular or circular section

NOTE An aperture on the top or side of the body and a carrying device is usual.

[EN 13974:2002]

3.4

nominal capacity

capacity for which the container is designed

3.5

drainability

quantitative measure of the residual content of a container emptied after its normal use

3.6

absolute drainability

the residual content of the test liquid expressed in g

3.7

relative drainability

the residual content expressed as a percentage of the nominal capacity

4 Principle

Obtaining the mass of the chosen test liquid left as a residue in the container after drainage under gravity.

5 Sampling

The test shall be performed on a predetermined number of containers which shall be representative of the consignment.

6 Apparatus

6.1 Balance

Balance with an accuracy of at least 0,1 % of the weight being measured.

6.2 Thermometer

Thermometer with a scale range graduated in increments of no more than 1 °C, with an accuracy of ± 1 °C.

6.3 Testing liquids

6.3.1 Normal tap water

Normal tap water, not distilled and without any additional additives, with temperature of $23\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$.

6.3.2 Another test liquid

Another test liquid of choice with defined characteristics.

6.4 Holding device for the container

Holding device for the container, which will enable 7.7 to be carried out if required.

7 Procedure

7.1

Place the empty container with its normal closure on the balance (6.1) and record its mass in g.

7.2

Fill the container to at least 50 % of its nominal capacity with the test liquid (6.3) and close the container.

7.3

Remove any liquid from the outside surface of the container.

7.4

Agitate the container to ensure that the entire inner surface is exposed to the liquid.

7.5

Open the container and empty it until the liquid flow stops.

7.6

Slowly incline the container up to the angle which ensures optimal draining. Leave the container in this position for a further 1 min without moving or shaking it.

7.7

Re-weigh the emptied container with its closure and record the mass in g.

8 Calculation

8.1 Absolute drainability

Calculate the absolute drainability, in g, by subtracting the mass of the empty container (7.1) from the mass of the container after emptying (7.7).

8.2 Relative drainability

Calculate the relative drainability, in %, from the ratio of absolute drainability to nominal capacity (the mass of the test liquid, in g) multiplied by 100.

9 Test report

The test report shall include the following information:

- a) a reference to this European Standard;
- b) a description of the container (i.e. design, name, supplier etc.) and type of plastics material;
- c) the date of the test;
- d) the number of replicates tested;
- e) the nominal capacity of the container;
- f) the cavity number, if applicable;
- g) the chosen test liquid, together with its characteristics;
- h) the test temperature;
- i) the absolute drainability of each container;
- j) the relative drainability of each containers tested;
- k) the average absolute drainability of all container tested;
- l) the average relative drainability of all containers tested;