SLOVENSKI STANDARD
SIST EN 12377:2023

01-januar-2023

Nadomešča:
SIST EN 12377:2015

Embalaža - Prožne tube - Metoda za preskušanje zračne tesnosti zapork

Packaging - Flexible tubes - Test method for the air tightness of closures

Packmittel - Tuben - Prüfverfahren zur Bestimmung der Luftdichtheit der Verschlüsse

Emballage - Tubes souples - Méthode d'essai de détermination de l'étanchéité à l'air des bouchons

Ta slovenski standard je istoveten z: **EN 12377:2022**

ICS:

55.120	Pločevinke. Tube	Cans. Tins. Tubes

SIST EN 12377:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12377

October 2022

ICS 55.120

Supersedes EN 12377:2014

English Version

Packaging - Flexible tubes - Test method for the air tightness of closures

Emballage - Tubes souples - Méthode d'essai de détermination de l'étanchéité à l'air des bouchons

Packmittel - Tuben - Prüfverfahren zur Bestimmung der Luftdichtheit der Verschlüsse

This European Standard was approved by CEN on 22 August 2022.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword

This document (EN 12377:2022) 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 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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

This document supersedes EN 12377:2014.

In comparison with the previous edition, the following technical modifications have been made:

— the Scope has been extended generically to flexible tubes;

— definitions given in EN 12374 have been considered.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

1 Scope

This document specifies a test method for airtightness of the closures for flexible tubes.

It is applicable to flexible tubes used for packing pharmaceutical, cosmetic, hygiene, food and other domestic and industrial products

It is not applicable to flexible tubes with external applicators added on to the tube by the consumer and pumps.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
closure
any type of closure system which is fixed on the tube as part of the production process

4 Principle

The detection of air bubbles escaping from the closure system, when the shoulder of the tube including closure system is held under water and subjected to an internal air pressure of 0,25 bar.

5 Apparatus

5.1 Air compressor with an initial minimum pressure of 2 bar, equipped with an air regulator allowing a constant and stable pressure of 0,25 ± 0,01 bar.

5.2 Manometer accurate to 0,01 bar.

5.3 Conical connector, adapted to the diameter of the tube, which allows the attachment of the open end of the tube to the compressed air source without leaks.

5.4 Transparent container of a size such as to allow the shoulder of the tube including closure system to be immersed in water.

6 Procedure

The test shall be carried out on the tube including closure system at a temperature of between 10 °C and 25 °C.

Attach the open end of the tube to the compressed air source with the conical connector (see Figure 1).

Set the air regulator so as to maintain an air pressure of (0,25 ± 0,01) bar inside the tube.

Immerse the shoulder of the tube in the water ensuring that the closure system is totally immersed for at least 3 s.

During the test period some bubbles might occur shortly after immersing the tube into the water due to air which is present under the closure before immersing the tube. After a test period of 3 s without bubbles, the tube closure is considered to be tight.

For some products air tightness of 0,25 bar does not guarantee no leakage of the product. The filler shall ensure that the tolerances laid down in this document are appropriate for the product.

7 Test report

The test report shall contain the following information:

a) reference to this document and if necessary a specification for the method of sampling;

b) acceptance of the batch;

c) complete identification of the batch and of the tubes tested;

d) number of tubes tested;

e) number of defects;

f) if applicable, acceptance or refusal of the batch in accordance with specifications (see a));

g) all factors which could have affected the results, or all operating details not specified in this document;

h) date of test;

i) name of the tester.