



SLOVENSKI STANDARD

SIST EN 14241-1:2013

01-november-2013

Nadomešča:

SIST EN 14241-1:2006

Dimniki - Elastomerna tesnilna sredstva - Zahteve za material in preskusne metode - 1. del: Tesnila v dimničnih tuljavah

Chimneys - Elastomeric seals and elastomeric sealants - Material requirements and test methods - Part 1: Seals in flue liners

Abgasanlagen - Werkstoffanforderungen und Prüfungen für elastomere Dichtungen und Dichtwerkstoffe - Teil 1: Dichtungen für den Einsatz in Innenrohren

Conduit de fume - Garnitures et matériaux d'étanchéité en elastomère - Exigences de matériaux et méthodes d'essai - Partie 1: Garnitures d'étanchéité dans les conduits interieures

Ta slovenski standard je istoveten z: EN 14241-1:2013

ICS:

91.060.40	Dimniki, jaški, kanali	Chimneys, shafts, ducts
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

SIST EN 14241-1:2013

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 14241-1:2013

<https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-4d409a90a5af/sist-en-14241-1-2013>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14241-1

August 2013

ICS 83.140.50; 91.060.40

Supersedes EN 14241-1:2005

English Version

**Chimneys - Elastomeric seals and elastomeric sealants -
Material requirements and test methods - Part 1: Seals in flue
liners**

Conduit de fumée - Garnitures et matériaux d'étanchéité en
élastomère - Exigences de matériaux et méthodes d'essai -
Partie 1: Garnitures d'étanchéité dans les conduits
intérieurs

Abgasanlagen - Werkstoffanforderungen und Prüfungen für
elastomere Dichtungen und Dichtwerkstoffe - Teil 1:
Dichtungen für den Einsatz in Innenrohren

This European Standard was approved by CEN on 30 June 2013.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
4 Classification and designation	8
4.1 General	8
4.2 Temperature classes.....	8
4.3 Condensate resistance classes.....	9
4.4 Corrosion resistance classes	9
4.5 Construction classes	10
4.6 Location.....	10
4.7 Designation	10
5 Requirements	11
5.1 General	11
5.2 Characterisation.....	11
5.3 Long-term resistance to thermal load.....	11
5.4 Long-term resistance to condensate exposure	12
5.5 Cyclic condensate resistance test	12
5.6 Relaxation behaviour	12
5.7 Compression set.....	12
5.8 Tensile strength	13
5.9 Elongation at break.....	13
5.10 Joints in elastomeric seals	13
5.11 Additional requirements for seals intended to be used for external installation	13
6 Test methods.....	13
6.1 General	13
6.2 Characterisation.....	13
6.3 Long-term resistance to thermal load	14
6.4 Long-term resistance to condensate exposure	14
6.5 Cyclic condensate resistance test	15
6.6 Relaxation behaviour	16
6.7 Compression set.....	16
6.8 Tensile strength	16
6.9 Elongation at break.....	16
6.10 Strength of joints in elastomeric seals.....	16
6.11 Additional requirements for seals intended to be used for external installation	16
7 Marking and labelling.....	17
8 Evaluation of conformity.....	17
8.1 General	17
8.2 Initial type testing.....	17
8.3 Further type testing.....	17
8.4 Factory production control.....	18
Annex A (normative) Process parameters	20

Annex B (normative) Description of test specimen	21
Annex C (informative) Monitoring by a third party	22

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 14241-1:2013](https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-4d409a90a5af/sist-en-14241-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-4d409a90a5af/sist-en-14241-1-2013>

EN 14241-1:2013 (E)**Foreword**

This document (EN 14241-1:2013) has been prepared by Technical Committee CEN/TC 166 "Chimneys", the secretariat of which is held by ASI.

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 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

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.

This document supersedes EN 14241-1:2005.

The main modifications compared to EN 14241-1:2005 are the following:

- a) Normative References were updated;
- b) terms were added;
- c) 4.4 (Corrosion resistance classes) was revised;
- d) Clause 5 (Requirements) was completely revised.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The objective of this European Standard is to evaluate the material behaviour of prefabricated elastomeric seals for application in flue liners.

The testing conditions are representative of normal use, yet severe enough to yield meaningful results in a relatively short period of time.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 14241-1:2013](https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-4d409a90a5af/sist-en-14241-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-4d409a90a5af/sist-en-14241-1-2013>

EN 14241-1:2013 (E)**1 Scope**

This European Standard specifies the material requirements and test methods for prefabricated elastomeric seals for use in flue liners. It also specifies the requirements for evaluation of conformity.

These seals are components in flue liners of different materials such as metal, plastic, clay, concrete.

Performance requirements of elastomeric seals in flue liners are covered by the relevant product standards.

In the product standards, chimney products, including seals, are tested under operational conditions (e.g. temperature, pressure, mechanical load, flue gas, condensate) to relevant properties such as leakage and deformation.

This European Standard covers seals intended for use in both dry and wet conditions. Therefore all seals are tested for functioning under wet conditions.

This European Standard does not contain all the requirements necessary for chimneys with the following classification:

- corrosion resistance class 2 concerning natural wood¹⁾,
- corrosion resistance class 3.

This European Standard is also applicable for sealants, in case nothing else is defined. The specimens are made from the sealants, which have been brought into a practical form, cured under manufacturers' instructions. The cured sealants will fulfil the same requirements as seals.

NOTE Cured sealants are operationally seals in application.

<https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-4d409a90a5af/sist-en-14241-1-2013>

2 Normative references

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

EN 1443, *Chimneys — General requirements*

EN ISO 11358, *Plastics — Thermogravimetry (TG) of polymers — General principles (ISO 11358)*

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

ISO 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 815-1, *Rubber, vulcanized or thermoplastic — Determination of compression set — Part 1: At ambient or elevated temperatures*

1) There is not sufficient knowledge or data for flue gas condensate from appliances fired with natural wood.

ISO 815-2, *Rubber, vulcanized or thermoplastic — Determination of compression set — Part 2: At low temperatures*

ISO 1431-1, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static and dynamic strain testing*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 2781, *Rubber, vulcanized or thermoplastic — Determination of density*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3384 (all parts), *Rubber, vulcanized or thermoplastic — Determination of stress relaxation in compression*

ISO 7619-1, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1443 and the following apply.

3.1

characterisation ²⁾

identification of the material by determining a combination of properties covering the thermal, mechanical and physicochemical behaviour

3.2

material ³⁾

material composition of which an individual component is made, being the result of a manufacturing process in which the raw material(s) is transformed by extrusion, moulding, welding etc. into its intended shape

3.3

material test ⁴⁾

test in which specific properties of a material as defined in 3.2 are tested

3.4

external installation

part of a chimney which is located outside the building

Note 1 to entry: Flue liners installed within an enclosure or cladding are considered as internal installations.

3.5

internal installation

part of a chimney which is located inside a building

2) A fingerprint of the material.

3) Changing the manufacturing process may change the properties of the material.

4) The material test does not include the effects of the performance of the chimney system resulting in stress etc. on the individual components.

EN 14241-1:2013 (E)

3.6 reaction to fire
response of a product in contributing by its own decomposition to a fire to which it is exposed, under specified conditions

3.7 seal
prefabricated element that joins two components in such a way as to prevent leakage

3.8 joint in elastomeric seals
joint in elastomeric seals is the area where two or more original surfaces of the material are brought together and adhered to each other with the intention to manufacture an endless seal

Note 1 to entry: A joint in elastomeric seals may be made by vulcanization, gluing or any other suitable method.

3.9 sealant
material which, applied in an unformed state to a joint, seals it by adhering to appropriate surfaces within the joint

3.10 specimen from production tool
specimen produced in the tool used to manufacture the seals, and that has passed the production process

3.11 specimen
specimens taken from seals or from "specimens from production tool", both having passed the production process

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 14241-1:2013](https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-09a90a5af/sist-en-14241-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/b835ee40-3768-496a-92a9-09a90a5af/sist-en-14241-1-2013>

4 Classification and designation**4.1 General**

The classification system of EN 1443 is followed as far as it is relevant. Elastomeric seals shall be classified in accordance with classes of convenience for the following parameters:

- temperature;
- condensate resistance;
- corrosion resistance;
- construction class;
- location.

4.2 Temperature classes

For temperature classes for chimneys see Table 1.

NOTE Temperature classes up to T 600 does not necessarily mean that all of these classes apply for elastomeric seals.

The seal class temperature should not be lower than the class of the chimney in which it is inserted.

Table 1 — Temperature classes

Temperature class	Nominal working temperature ° C
T 080	≤ 80
T 100	≤ 100
T 120	≤ 120
T 140	≤ 140
T 160	≤ 160
T 200	≤ 200
T 250	≤ 250
T 300	≤ 300
T 400	≤ 400
T 450	≤ 450
T 600	≤ 600

4.3 Condensate resistance classes

Condensate resistance classes:

— W for chimneys operating under wet conditions;

— D for chimneys operating under dry conditions.

4.4 Corrosion resistance classes

Corrosion resistance classes for chimneys which convey products of combustion from various fuels are given in Table 2.