

Kummimaterjalid gaasiseadmete tihenditele ja membraanidele

Rubber materials for seals and diaphragms for gas
appliances and gas equipment

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 549:1999 sisaldab Euroopa standardi EN 549:1994 ingliskeelset teksti.	This Estonian standard EVS-EN 549:1999 consists of the English text of the European standard EN 549:1994.
Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

Käsitlusala: Käesolev standard määrab kindlaks nõuded ja kaasnevad katsetusmeetodid vulkaniseeritud kummimaterjalidele, mida kasutatakse gaasiseadmetes ning seadmetes kontaktis 1., 2. ja 3. põlvkonna põlevgaasidega. Standard kehtestab ka temperatuurivahemikul ja kõvadusel põhineva liigituse. Käesolev standard on kohaldatav materjalidele, millest valmistatakse homogeenseid tihendeid ja homogeenseid või sarrusmembraane.	Scope:
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ICS 83.140.50

Võtmesõnad: gaasiseadmed, kummitooted, liigitused, majapidamisseadmed, mehaanilised omadused, membraanid, pimeäärik, reguleerimissüsteemid, tehnilised nõuded, testimine, tihendid

ICS 21.140; 83.060

Descriptors: Gas appliances, rubber products, membranes, seals.

English version

**Rubber materials for seals and diaphragms
for gas appliances and gas equipment**

Matériaux à base de caoutchouc pour
joints et membranes destinés aux appa-
reils à gaz et appareillages pour le gaz

Elastomer-Werkstoffe für Dichtungen und
Membranen in Gasgeräten und Gasan-
lagen

This European Standard was approved by CEN on 1994-11-08.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 108 'Sealing materials and lubricants for gas appliances and gas equipment', the Secretariat of which is held by NNI.

This European Standard is a compilation of EN 278:1991, EN 279:1991 and EN 291:1992.

Annexes A and B are normative.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of the relevant EC Directives.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by December 1995 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherland, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard specifies requirements for materials to be used for the manufacture of seals and diaphragms. It specifies tests to be carried out on standardized test pieces taken from sheets of material, since the small size of most components does not, in general, allow for the necessary standard samples to be prepared from them in order to undertake the complete range of tests.

It may be necessary to carry out supplementary tests on the component as mounted in the gas appliance or equipment such as safety and control devices to confirm the functional suitability of the component. Such tests should be performed under the most severe service conditions envisaged in the appropriate standards for the gas appliances and/or equipment.

1 Scope

This standard specifies requirements and associated test methods for vulcanized rubber materials used in gas appliances and equipment in contact with 1st, 2nd and 3rd family combustible gases. It also establishes a classification based on temperature range and hardness. This standard is applicable to materials from which are manufactured homogeneous seals and homogeneous or reinforced diaphragms.

The normal range of operating temperatures covered by this standard is 0 °C to + 60 °C. Tests are also included for applications using diaphragms within the range - 20 °C to + 80 °C and seals within the range - 20 °C to + 150 °C. For temperatures outside these ranges the user should contact the manufacturer regarding the suitability of the rubber material.

This standard includes two normative annexes for the verification that a component (finished product) was produced from a previously type tested material complying with requirements of this standard as declared by the appliance or equipment manufacturer or supplier of the component.

This standard is not applicable to silicone rubber used either above 200 mbar nominal pressure or at temperatures below 0 °C with 3rd family gases as there is possibility of condensation. This standard is also not applicable to seals and diaphragms for devices in gas transmission systems nor in such equipment used in 1st and 2nd family gas distribution systems.

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 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.

ISO 37	Rubber vulcanized - Determination of tensile stress-strain properties
ISO 48	Vulcanized rubbers - Determination of hardness (Hardness between 30 and 85 IRHD)
ISO 188	Rubber vulcanized - Accelerated ageing or heat-resistance tests
ISO 247	Rubber - Determination of ash
ISO 471	Rubber - Standard temperatures, humidities and times for the conditioning and testing of test pieces
ISO 815	Rubber, vulcanized or thermoplastic - Determination of compression set at ambient elevated or low temperatures
ISO 1400	Vulcanized rubbers of high hardness (85 to 100 IRHD) - Determination of hardness
ISO 1407	Rubber - Determination of solvent extract

ISO 1431-1:1989	Rubber vulcanized or thermoplastic - Resistance to ozone cracking - Part 1: Static strain test
ISO 1817:1985	Rubber, vulcanized - Determination of the effect of liquids
ISO 4648	Rubber, vulcanized or thermoplastic - Determination of dimensions of test pieces and products for test purposes
ISO 4650	Rubber - Identification - Infra-red spectrometric method.

3 Definitions

For the purposes of this standard the following definitions apply:

3.1 **component:** Finished product manufactured from rubber material.

3.2 **seal:** A component used as an interface between parts of a gas appliance or parts of gas equipment to achieve gas tightness.

3.2.1 **static seal:** A component which ensures a seal between two parts of a gas appliance or parts of gas equipment which do not have relative movement ("O" rings, sheet gaskets, etc.).

3.2.2 **dynamic seal:** A component which ensures a seal between two parts of a gas appliance or parts of gas equipment which have relative movement (lip seals, valve pads and some "O" rings).

3.3 **diaphragm:** A membrane of rubber material located in a fixture and serving as a flexible gas tight partition between two chambers.

3.4 **reinforcement:** Woven or unwoven material arranged in or on the rubber type material, thus reinforcing certain properties of such, for example the bursting strength of diaphragms.