EESTI STANDARD EVS-EN 682:2002

Elastsed tihendid. Materjalinõuded gaasi ja süsivesinikvedelikke edasikantavates torudes kasutatavatele tihenditele

Elastomeric seals - Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 682:2002 sisaldab Euroopa standardi EN 682:2002 ingliskeelset teksti. Käesolev dokument on jõustatud 12.07.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 682:2002 consists of the English text of the European standard EN 682:2002. This document is endorsed on 12.07.2002 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies requirements for elastomeric materials used in seals for supply pipes and fittings, ancillaries and valves at operating temperatures in general from -5°C up to 50°C and in special cases from - 15°C up to 50°C.	**Scope:** This European Standard specifies requirements for elastomeric materials used in seals for supply pipes and fittings, ancillaries and valves at operating temperatures in general from -5°C up to 50°C andin special cases from - 15°C up to 50°C.

ICS 83.140.50

Võtmesõnad: elastomers, gas circuits, hydrocarbons, materials, pipelines, rubber, sealing rings, seals, specification (approval), specifications, stoppers, testing, utilities

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 682

February 2002

ICS 83.140.50

English version

Elastomeric Seals - Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids

Garnitures d'étanchéité en caoutchouc - Spécification des matériaux pour garnitures d'étanchéité pour joints de canalisations et des raccords véhiculant du gaz et des fluides hydrocarbures

Elastomer-Dichtungen - Werkstoff-Anforderungen für Dichtungen in Versorgungsleitungen und Bauteilen für Gas und flüssige Kohlenwasserstoffe

This European Standard was approved by CEN on 16 November 2001.

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.

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

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

Ref. No. EN 682:2002 E

Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 208 “Elastomeric seals for joints in pipework and pipelines”, the secretariat of which is held by BSI.

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 2002, and conflicting national standards shall be withdrawn at the latest by November 2003.

No existing European Standard is superseded.

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 EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this standard.

This European Standard is based on ISO 6447 and ISO 6448, bringing together the requirements for seals used in gas and hydrocarbon fluid applications. The major changes from ISO 6447 and ISO 6448 have been to introduce additional test requirements e.g. an ozone test and to modify some requirements. Finished joint seals have been classified according to their final application and operating temperatures.

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.

1 Scope

This European Standard specifies requirements for elastomeric materials used in seals for supply pipes and fittings, ancillaries and valves at operating temperatures in general from - 5 °C up to 50 °C and in special cases from - 15 °C up to 50 °C, for the following:

General applications (see Table 4, type G)

a) gaseous fuel (manufactured, natural and liquefied petroleum gas [LPG] in gaseous phase);

b) hydrocarbon fluids with aromatic content up to 30 % (*V/V*), including LPG in liquid phase.

Special applications (see Table 4, type H)

Materials suitable for carrying gaseous fuels containing gas condensates and hydrocarbon fluids of unrestricted aromatic content.

General requirements for finished joint seals are also given; any additional requirements called for by the particular application are specified in the relevant product standards taking into account that the performance of pipe joints is a function of the seal material properties, seal geometry and pipe joint design. This European Standard should be used where appropriate with product standards which specify performance requirements for joints.

This European Standard is applicable to joint seals for all pipeline materials including iron, steel, copper and plastics.

In the case of composite seals requirements in 4.2.8 and 4.2.9 apply only when the materials used for any elastomeric parts come into contact with gaseous fuel or hydrocarbon fluid.

Elongation at break, tensile strength**,** compression set and stress relaxation requirements for materials of hardness categories 80 and 90 apply only when they constitute that part of the seal which participates directly in the sealing function or in long term stability.

This standard is not applicable to the following:

a) seals made from cellular materials;

b) seals with enclosed voids as part of their design;

c) seals with requirements of resistance to flame or to thermal stress;

d) seals which contain splices joining pre-vulcanized profile ends.

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).

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 188:1998, *Rubber, vulcanized or thermoplastic – Accelerated ageing and heat resistance tests.*

ISO 471, *Rubber – Temperatures, humidities and times for conditioning and testing.*

ISO 815, *Rubber, vulcanized or thermoplastic – Determination of compression set at ambient, elevated or low temperatures.*

ISO 1431–1, *Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Part 1: static strain test.*

ISO 1817, *Rubber, vulcanized – Determination of the effect of liquids.*

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 3302–1, *Rubber – Tolerances for products – Part 1: Dimensional tolerances.*

ISO 3384:1999, *Rubber, vulcanized or thermoplastic – Determination of stress relaxation in compression at ambient and at elevated temperatures.*

ISO 3951, *Sampling procedures and charts for inspection by variables for percent nonconforming.*

ISO 4661–1, *Rubber, vulcanized or thermoplastic – Preparation of samples and test pieces – Part 1: Physical tests.*

ISO 9691:1992, *Rubber – Recommendations for the workmanship of pipe joint rings – Description and classification of imperfections.*