SLOVENSKI STANDARD
SIST EN 12560-2:2002

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Prirobnice in prirobnični spoji - Tesnila za prirobnice z oznako Class - 2. del: Spiralna tesnila za jeklene prirobnice

Flanges and their joints - Gaskets for Class-designated flanges - Part 2: Spiral wound gaskets for use with steel flanges

Flansche und ihre Verbindungen - Dichtungen für Flansche mit Class-Bezeichnung - Teil 2: Spiraldichtungen für Stahlflansche

Brides et leurs assemblages - Joints pour les brides désignées Class - Partie 2: Joints spiralés pour utilisation avec des brides en acier

Ta slovenski standard je istoveten z: **EN 12560-2:2001**

ICS:

23.040.60	Prirobnice, oglavki in spojni elementi	Flanges, couplings and joints
23.040.80	Tesnila za cevne zveze	Seals for pipe and hose assemblies

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EUROPEAN STANDARD

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EN 12560-2

January 2001

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English version

Flanges and their joints - Gaskets for Class-designated flanges - Part 2: Spiral wound gaskets for use with steel flanges

Brides et leurs assemblages - Joints pour les brides désignées Class - Partie 2: Joints spiralés pour utilisation avec des brides en acier

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This European Standard was approved by CEN on 28 December 2000.

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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.

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

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

Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 74 "Flanges and their joints", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.

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

The annex A is informative and contains "A-deviations".

The annex B is informative.

Introduction

EN 12560 consists of seven parts:

Part 1: Non-metallic flat gaskets with or without inserts

Part 2: Spiral wound gaskets for use with steel flanges

Part 3: Non-metallic PTFE envelope gaskets

Part 4: Corrugated, flat or grooved metallic and filled metallic gaskets for use with steel flanges

Part 5: Metallic ring-joint gaskets for use with steel flanges

Part 6: Kammprofile gaskets for use with steel flanges

Part 7: Covered metal jacketed gaskets for use with steel flanges

The terminology and definitions in this standard are in accordance with those given in ISO standards.

WARNING Gaskets made to this standard may contain asbestos. Materials containing asbestos may be subject to legislation that requires precautions to be taken when handling them to ensure that they do not constitute a hazard to health (see annex A). Attention is drawn to relevant EC directives.

1 Scope

This European Standard specifies the dimensions, design, types, designation, materials and marking of spiral wound gaskets for use with type A flat face or type B raised face flange facings complying with prEN 1759-1:2000 for Class designations Class 150 to Class 1500 for nominal sizes DN 15 to DN 600 and for Class designation 2 500 up to and including DN 300.

The centering rings for the spiral wound gaskets according to this standard are sized for use with imperial bolting.

The dimensions of spiral wound gaskets for tongue and groove flange facing types and spigot and recess flange facing types to prEN 1759-1:2000 are not included in this standard.

NOTE 1 Such gaskets may be available, however, for these types of flanges and the purchaser is advised to consult the manufacturer as to their availability. Similarly, for slip-on or screwed flange types the manufacturer should be consulted about availability.

NOTE 2 Dimensions of other types of gaskets for use with flanges complying with prEN 1759-1:2000 are given in prEN 12560-1:2000, prEN 12560-3:2000, prEN 12560-4:2000 and prEN 12560-5:2000, prEN 12560-6:2000 and prEN 12560-7:2000.

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).

prEN 1759-1:2000
Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated - Part 1: Steel flanges, NPS 1/2 to NPS 24

prEN 1759-3:1994
Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 3: Copper alloy flanges

EN ISO 6708
Pipework components - Definition and selection DN (nominal sizes) (ISO 6708 : 1995)

3 Terms and Definitions

For the purposes of this European Standard, the following terms and definitions apply:

3.1
DN
see EN ISO 6708

3.2
NPS
see prEN 1759-3 :1994

3.3
Class
see prEN 1759-3 :1994

4 Designations

4.1 Range of Class designations

Gaskets shall be designated as suitable for use with one or more of the following Class designations of flange:

— Class 150;

— Class 300;

— Class 600;

— Class 900;

— Class 1 500;

— Class 2 500.

4.2 Range of gasket sizes

Gasket nominal sizes shall be designated in accordance with the ranges specified in Table 1.

4.3 Gasket types

Gasket types, as defined in clause 8 and illustrated in Figure 1, shall be designated as:

— Type C/I;

— Type C/O.

4.4 Information to be supplied by the purchaser

The following information shall be supplied by the purchaser when ordering gaskets:

a) the number and Part of this European Standard, i.e. EN 12560-2;

b) gasket type designation (see 4.3);

c) the nominal size (see Table 1);

d) Class designation (see Table 1);

e) whether an inner ring is required in the case of Class 150, Class 300 and Class 600 gaskets (see NOTE 1 of clause 8);

Additional information that should be supplied by the purchaser:

f) Required gasket materials or, where the gasket manufacturer is required to select the materials, the expected operating conditions for the application(s) for which the gasket(s) will be used.

NOTE Before ordering a gasket it is recommended that the selection of the gasket type should be made in consultation with the gasket supplier. The selection of gasket type should take account of the fluid, the operating conditions, the properties of the gasket materials, the type and surface finish of the flange facing and the flange bolt loading.

EXAMPLE
A gasket according to EN 12560-2, type C/I, of nominal size DN 100, Class 150, with inner ring, winding material X4CrNi18-10 (abbreviation 304) and PTFE filler material shall be designated as follows:

Gasket EN 12560-2 — C/I — DN 100 — Class 150 — inner ring — 304 — PTFE

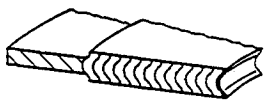
5 Gasket designs and materials

5.1 Gasket designs

Gaskets for which dimensions are specified shall be one of the designs shown in Figure 1.

The centering ring and, where used, the inner ring, shall be suitably grooved to retain the sealing element.

a) Type C/I



b) Type C/O

Figure 1 - Designs of spiral wound gaskets

NOTE 1 Type A and type B flange facings are shown in prEN 1759-1:2000.

NOTE 2 The profile of the metal winding of the sealing element is at the option of the manufacturer.

5.2 Materials

A typical list of metal windings and filler materials is given in Table 3.

NOTE 1 The inner ring should be selected from a material equal or superior in corrosion resistance to the metal selected for the windings.

NOTE 2 The centering ring should be a carbon steel that is coated or otherwise treated to inhibit atmospheric corrosion.

NOTE 3 The materials of the gasket, may, if required, be chosen by the manufacturer to suit the operating conditions. In such instances, the purchaser should define the operating conditions in the enquiry and/or order (see 4.4).

WARNING Gaskets made to this standard may contain asbestos. Materials containing asbestos may be subject to legislation that requires precautions to be taken when handling them to ensure that they do not constitute a hazard to health (see annex A). Attention is drawn to relevant EC directives.

6 Construction

Spiral wound gaskets shall be constructed as alternative plies of preformed metal windings and pliant fillers which are spirally wound. For the finished gasket the filler shall be essentially flush with, but not below, the metal winding on both contact faces of the gasket. The thickness of the metal winding strip in the sealing element shall be between 0,15 mm and 0,23 mm. The filler material thickness is left to the discretion of the manufacturer. The profile of the metal winding of the sealing element is at the option of the manufacturer.

The inner windings shall have a minimum of three plies of preformed metal strip without filler. The inner two plies shall be spotwelded about their circumference with a minimum of three welds, each no further than 75 mm apart.

The outer windings shall have a minimum of three plies of preformed metal without filler. The outer two plies shall be spotwelded about their circumference with a minimum of three terminal welds, with no more than 40 mm distance between the first and terminal welds.

Up to four additional loose preformed metal windings beyond the terminal weld may be used to retain the gasket into the centering ring.

7 Gasket compression

Gaskets for DN 15, DN 20 and DN 25 in Class 150, Class 300 and Class 600 shall be constructed so that an applied uniform bolt stress of 172 MPa, based on the nominal bolt root diameter, will compress the gasket to a thickness of 3,2 mm to 3,4 mm. All other gasket sizes and Classes shall be constructed so that a uniform bolt stress of 207 MPa will compress the gasket to a thickness of 3,2 mm to 3,4 mm.

8 Gasket types

Gaskets shall be one of the following types:

a) Sealing element with centering ring and inner ring (designation: type C/I);

b) Sealing element with centering ring only (designation: type C/O).

All gaskets shall have a centering ring. All Class 900, Class 1 500 and Class 2 500 gaskets shall also have an inner ring. All gaskets containing PTFE filler material shall have an inner ring.

NOTE 1 The use of an inner ring is recommended for all Class designations and the purchaser should specify on the enquiry and/or order if an inner ring is required for Class 150, Class 300 and Class 600 gaskets (see 4.4). The use of an inner ring is also recommended for graphite spiral wound gaskets for Class 600 and above.

NOTE 2 The selection of gasket type should take into account the fluid, the operating conditions, the properties of the gasket materials, the type and surface finish of the flange facing and the flange bolt loading. It is recommended that selection of gaskets for any particular application is made in consultation with the gasket supplier (see 4.4)

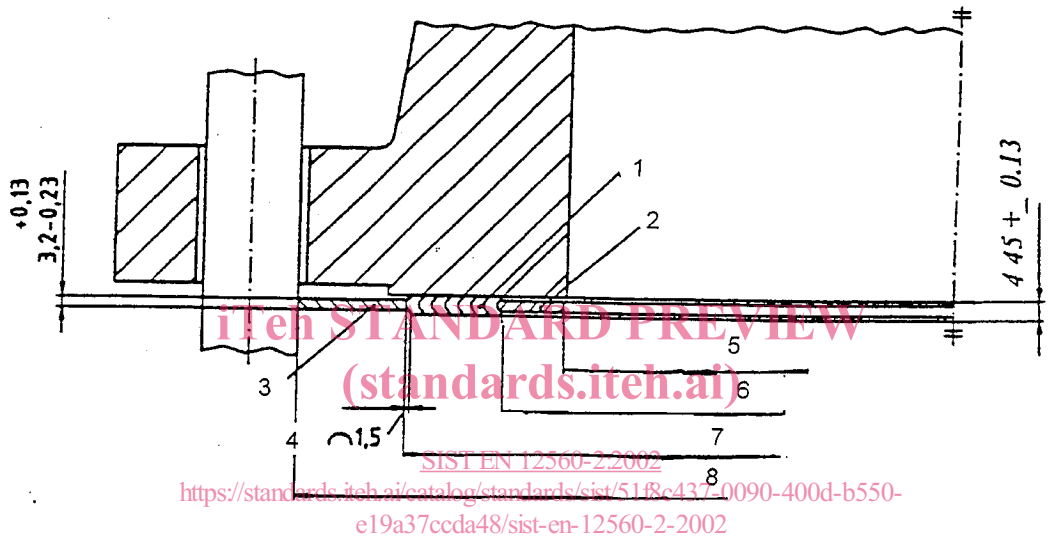
9 Dimensions

The diameters of spiral wound gaskets with centering ring, for use with types A and B flange facings, shall be as given in Table 1. For gaskets with an inner ring, the sealing element outside diameter and centering ring outside diameter shall be as given in Table 1 and the inner ring inside diameter shall be as given in Table 2.

NOTE Type A and B flange facings are shown in prEN 1759-1:2000.

The overall thickness is measured across the metallic portion of the sealing element of the gasket, the part not including the filler, as the latter may protrude slightly beyond the metal, and the centering ring thickness shall be as given in Figure 2.

Dimensions in millimetres



Key
1 Sealing element
2 Inner ring
3 Centring ring
4 Bead
5 Inner ring inner diameter
6 Sealing element inner diameter
7 Sealing element outer diameter
8 Centring ring outer diameter

NOTE This sketch is diagrammatic only.

Figure 2 - Dimensions of spiral wound gasket