

Flanges and their joints — Gaskets for Class-designated flanges —

Part 3: Non-metallic PTFE envelope gaskets

The European Standard EN 12560-3:2001 has the status of a
British Standard

ICS 23.040.80

National foreword

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The UK participation in its preparation was entrusted to Technical Committee PSE/2, Jointing material and compounds, which has the responsibility to:

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Brides et leurs assemblages — Joints pour les brides désignées Class — Partie 3: Joints non métalliques à enveloppe PTFE

Flansche und ihre Verbindungen — Dichtungen für Flansche mit Class-Bezeichnung — Teil 3: Nichtmetallische Weichstoffdichtungen mit PTFE-Mantel

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

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of an identical text or by endorsement, at the latest by July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.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

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 and marking of IBC (inside bolt circle) non-metallic PTFE envelope gaskets for use with flanges complying with prEN 1759-1:2000, prEN 1759-3:1994 and prEN 1759-4:1997 for Class 150 and Class 300 for nominal sizes DN 15 and DN 600.

NOTE: Dimensions of other types of gaskets for use with flanges complying with prEN 1759-1:2000, prEN 1759-3:1994 and prEN 1759-4:2000 are given in prEN 12560-1:2000, prEN 12560-2:2000, prEN 12560-4:2000, 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 ½ 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.

prEN 1759-4:1997

Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 4: Aluminium alloy flanges.

EN ISO 6708

Pipework components — Definition and selection of DN (nominal size) (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 both of the following Class designations of flange:

- Class 150;
- Class 300.

4.2 Range of gasket sizes

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

4.3 Gasket design

Gasket design, as defined in clause 5 and illustrated in Figure 1 shall be designated as:

- Design A;
- Design B;
- Design C.

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 12560-3;
- b) gasket design (see 4.3);
- c) the nominal size (see Table 1);
- d) Class designation (see Table 1);
- e) thickness (see NOTE to clause 7);

Additional information that should be supplied by the purchaser:

- f) expected operating conditions for which the gasket will be used.

NOTE: Before ordering a gasket it is recommended that the selection of the gasket design should be made in consultation with the gasket supplier. The selection of gasket design and thickness 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 12560-3, design C, of nominal size DN 100, Class 150, 2 mm thickness, shall be designated as follows:

Gasket EN 12560 — 3 — C — DN 100 — Class 150 — 2 mm.

5 Gasket designs

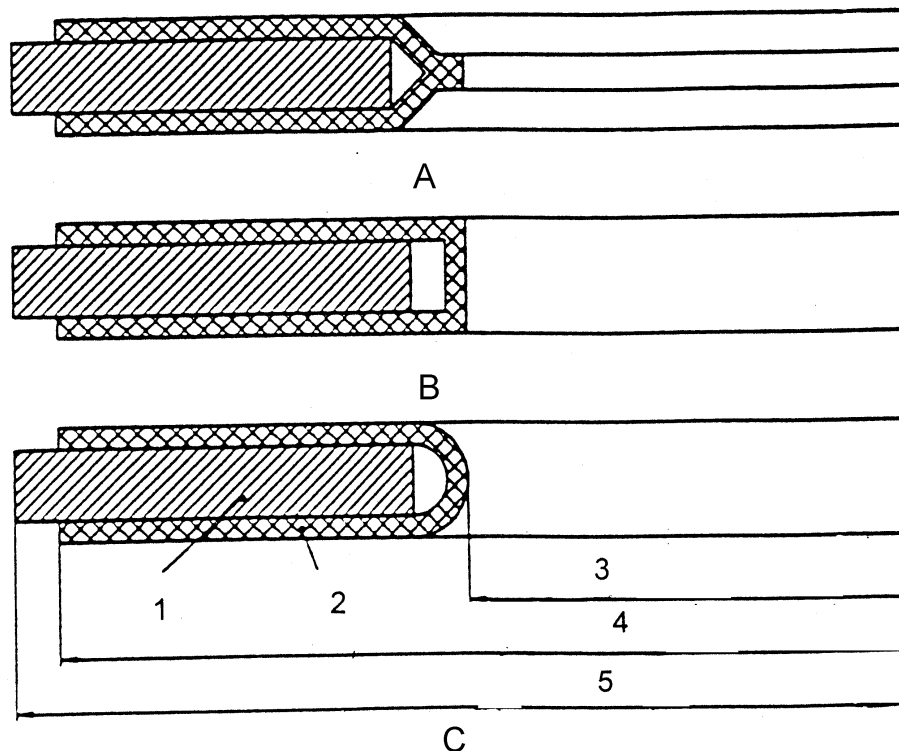
Gaskets for which dimensions are specified shall be one of the designs shown in Figure 1.

NOTE 1: Gasket inserts are usually manufactured from compressed fibre sheet jointings, including asbestos. Other materials are also used to suit particular applications.

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.

NOTE 2: Each design is applicable only to certain nominal sizes and Class designations and is dependent upon manufacturing constraints.

NOTE 3: The selection of the gasket 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



Key

- 1 Insert
- 2 Envelope
- 3 Gasket, inside diameter
- 4 Envelop, outside diameter
- 5 Gasket, outside diameter

Figure 1 — Typical designs of non-metallic PTFE envelope gaskets

6 Gasket type

Gaskets are IBC (inside bolt circle) type and shall be for use with type A (flat face) or type B (raised face) flange facings.

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

7 Dimensions and tolerances

7.1 Dimensions

The dimensions of non-metallic PTFE envelope gaskets shall be as given in Table 1.

NOTE: Gasket thickness is not specified but it should be selected taking into account the properties of the gasket materials and the intended service application. It is recommended that the gasket manufacturer should be consulted when selecting gasket thickness (see 4.4).

Table 1 — Dimensions of non-metallic PTFE envelope gaskets

Nominal size		Gasket inside diameter	Envelope outside diameter	Gasket outside diameter	
				Class 150	Class 300
DN	NPS ^a	mm	mm	mm	mm
15	½	22	40	47,5	54,0
20	¾	27	50	57,0	66,5
25	1	34	60	66,5	73,0
32	1¼	43	70	76,0	82,5
40	1½	49	80	85,5	95,0
50	2	61	92	104,5	111,0
65	2½	73	110	124,0	130,0
80	3	89	126	136,5	149,0
100	4	115	151	174,5	181,0
125	5	141	178	196,5	216,0
150	6	169	206	222,0	251,0
200	8	220	260	279,0	308,0
250	10	273	314	339,5	362,0
300	12	324	365	409,5	422,0
350	14	356	412	450,5	485,5
400	16	407	469	514,0	539,5
450	18	458	528	549,0	597,0
500	20	508	578	606,5	654,0
600	24	610	679	717,5	774,5

^a For information only.

7.2 Tolerances

The following tolerances will apply throughout this standard:

Outside diameter	DN 300 and below	$\begin{matrix} 0 \\ -1,52 \end{matrix}$ mm
	DN 350 and above	$\begin{matrix} 0 \\ -3,05 \end{matrix}$ mm
Inside diameter	DN 300 and below	$\begin{matrix} 0 \\ -1,52 \end{matrix}$ mm
	DN 350 and above	$\begin{matrix} 0 \\ -3,05 \end{matrix}$ mm

8 Marking

Gaskets shall be marked either individually or on the packaging containing the gaskets or, by agreement between supplier and purchaser, on the packaging containing each individual gasket, with the following information:

- the number and part of this European Standard, i.e. EN 12560-3;
- gasket type designation (see 4.3);
- the nominal size (see Table 1);
- the Class designation (see Table 1);
- thickness;
- materials;
- manufacturer's name or trademark.

EXAMPLE

EN 12560-3 — Type C — DN 100 — Class 150 — 2 mm — XXX — AAA/BBB.

Annex A (informative)

A-deviations

This European Standard is mandated under the Council Directive on the approximation of the laws of the Member States concerning pressure equipment.

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC member.

NOTE: (from CEN/CENELEC IR Part: 2, 3.1.9) Where standards fall under EC Directives, it is the view of the Commission of the European Communities (OJ No G 59, 9.3.1982) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

A-deviations in an EFTA country are **valid instead** of the relevant provisions of the European Standard in that country until they have been removed.

With reference to clause 5, "Gasket designs":

Denmark

Bekendtgørelse om asbest

(Nr. 660 af 24. juni 1986)

Bekendtgørelse om ændring af bekendtgørelse om asbest

(Nr. 139 af 23. marts 1987)

(Nr.984 af 11. december 1992)

According to this order, the use of asbestos and material containing asbestos is prohibited in Denmark.

Austria

Order on the use of asbestos (BGBl. Nr 324/1990 Asbestverordnung).

According to this ordinance the use of gasket materials containing asbestos is prohibited in Austria.

Czech Republic

Decree No. 76/1990 Coll. Health Regulations of the Ministry of Health and Social Affairs of CSR — Head of Public Health of CSR dated 27 February 1990 which amends the guidelines of the Ministry of Health of CSR — Head of Public Health of CSR No. 64/1984 Coll. Health Regulations concerning health principles for work with chemical carcinogens.

Commencement of production of materials containing asbestos shall be authorized by Head of Public Health of the Czech Republic. Products and materials containing asbestos may be used only where absolutely necessary and only for such technical and fire prevention purposes where no other suitable materials can be used.

France

Décret n° 96-1132 du 24 décembre 1996 modifiant le décret n° 96-98 du 7 février 1996 relatif à la protection des travailleurs contre les risques liés à l'inhalation de poussières d'amiante.

Décret n° n° 96-1133 du 24 décembre 1996 relatif à l'interdiction de l'amiante, pris en application du code du travail et du code de la consommation.

According to these regulations, within the scope of industrial safety the fabrication, manufacture, sale, import and merchandising of products containing asbestos is forbidden on the French market from 1st January 1997.

Germany

Verordnung zur Novellierung der Gefahrstoffverordnung, zur Aufhebung der Gefährlichkeitsmerkmaleverordnung und zur Änderung der ersten Verordnung zum Sprengstoffgesetz vom 26.10.1993 erschienen im Bundesgesetzblatt, Jahrgang 1993, Teil 1, Nummer 57 Seite 1782 und Verordnung über die Neuordnung und Ergänzung der Verbote und Beschränkungen des Herstellens, Inverkehrbringens und Verwendens gefährlicher Stoffe, Zubereitungen und Erzeugnisse nach Paragraph 17 des Chemikaliengesetzes vom 14. Oktober 1993, Bundesgesetzblatt Jahrgang 1993, Teil 1, Seite 1720.

According to this ordinance the use of gasket material containing asbestos is prohibited in Germany.

Italy

Law 1992-03-27 N.257 concerning "Rules regarding the stop of use of asbestos".

Norway

Forskrifter til arbeidsmiljøloven fastsatt av Kommunaldepartementet 16.August 1991 "Asbest" (best. nr 235).

According to this regulation the use of asbestos and materials containing asbestos is prohibited in Norway.

Switzerland

Verordnung über umweltgefährdende Stoffe (Stoffverordnung, StoV) vom 1986-06-09, Stand 1994-01-01, Änderung 1994-01-26, SR 814.013.

Sweden

Ordinance AFS 1992:2 "Asbest" of the National Board of Occupational Safety and Health.

According to this ordinance the use of asbestos and material containing asbestos is prohibited.

Netherlands

Asbestbesluit Arbeidsomstandighedenwet (Staatsblad 1993, 136).

According to Dutch legislation, the use of asbestos and asbestos containing products is prohibited in the Netherlands.

UK

Asbestos products (Safety) Regulations 1985.

Control of Asbestos at Work Regulations 1987 (as amended).

Asbestos (Prohibitions) (Amendment) Regulations 1999.

According to these regulations provisions covering work activities involving exposure to asbestos and the labelling of products containing asbestos apply in the UK.

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