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**Prirobnice in prirobnični spoji - Mere tesnil za prirobnice z oznako Class - 1. del:  
Nekovinska ravna tesnila z vložkom ali brez njega**

Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 1:  
Non-metallic flat gaskets with or without inserts

Flansche und ihre Verbindungen - Maße für Dichtungen für Flansche mit Class-  
Bezeichnung - Teil 1: Flachdichtungen aus nichtmetallischem Werkstoff mit oder ohne  
Einlagen

Brides et leurs assemblages - Dimensions des joints pour les brides désignées Class -  
Partie 1 : Joints plats non-métalliques avec ou sans insert

**Ta slovenski standard je istoveten z: prEN 12560-1**

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**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  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 12560-1**

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ICS 23.040.80

Will supersede EN 12560-1:2001

English Version

## Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 1: Non-metallic flat gaskets with or without inserts

Brides et leurs assemblages - Dimensions des joints  
pour les brides désignées Class - Partie 1 : Joints plats  
non-métalliques avec ou sans insert

Flansche und ihre Verbindungen - Maße für  
Dichtungen für Flansche mit Class-Bezeichnung - Teil  
1: Flachdichtungen aus nichtmetallischem Werkstoff  
mit oder ohne Einlagen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 74.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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**prEN 12560-1:2023 (E)****European foreword**

This document (prEN 12560-1:2023) has been prepared by Technical Committee CEN/TC 74 “Flanges and their joints”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12560-1:2001.

In comparison with the previous edition EN 12560-1:2001, the following technical modifications have been made:

- a) normative references have been updated;
- b) terms and definitions have been updated;
- c) Clause 4 “Symbols and abbreviations” has been inserted;
- d) in Clause 5 information to be supplied by the purchaser has been revised and more details have been added;
- e) in Clause 8 table with gasket dimensions have been arranged according gasket types and tolerances for gaskets have been introduced in 8.3;
- f) in Clause 9 former content has been incorporated in Clause 8 and markings have been revised;
- g) former Annex A “A-deviation” has been incorporated in 5.5;
- h) new Annex A “gasket materials” to give guidance how to mark gaskets;
- i) the document has been editorially revised.

EN 12560 will consist of the following 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: Covered serrated metal gaskets for use with steel flanges*
- *Part 7: Covered metal jacketed gaskets for use with steel flanges*

## Introduction

Dimensions for the internal diameter of gaskets are a compromise between all requirements of EN 1759-1, prEN 1759-3 and prEN 1759-4 so that a single value is given for each gasket size.

### 1 Scope

This document specifies the dimensions, types, designation and marking of non-metallic flat gaskets, with or without inserts, for flanges in accordance with EN 1759-1, EN 1759-3 and EN 1759-4, for Class 150, Class 300, Class 600 and Class 900 for nominal sizes DN 15 to DN 600. In addition, this document also gives guidance on typical materials used and how they should be marked.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1759-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, nominal pipe sizes NPS 1/2 to NPS 24*

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

EN 1759-4, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 4: Aluminium alloy flanges*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

#### 3.1

##### DN

alphanumeric designation of size for components of a pipework system, which is used for reference purposes. It comprises the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimeters, of the bore or outside diameter of the end connections

Note 1 to entry: The number following the letters DN does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

[SOURCE: EN ISO 6708:1995, 2.1]

#### 3.2

##### NPS

alphanumeric designation of size for components of a pipework system, which is used for reference purposes. It comprises, for the purpose of Class designated flanges according to this document, the letters NPS followed by a dimensionless number which is indirectly related to the physical size of the bore or outside diameter of the end connections

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Note 1 to entry: The number following the letters NPS does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard. See EN ISO 6708.

[SOURCE: EN 1759-3]

**3.3****Class**

alphanumeric designation used for reference purposes related to a combination of mechanical and dimensional characteristics of a component of a pipework system. It comprises the word Class followed by a dimensionless whole number

Note 1 to entry: The number following the word Class does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

Note 2 to entry: The designation Class is not meaningful unless it is related to the relevant component standard number.

Note 3 to entry: It is intended that all components with the same Class and NPS (see below) designations have the same mating dimensions for compatible flange types.

[SOURCE: EN 1759-3]

**4 Symbols and abbreviations**

For the purposes of this document, the following notations apply.

Where units are applicable, they are shown in brackets. Where units are not applicable, no indication is given.

<i>d</i>	Gasket inside diameter	[mm]
<i>D</i>	Gasket outside diameter	[mm]
DN	Diameter Nominal, see 3.1	.
FF	Full face	-
IBC	Inside bolt circle	-
<i>K</i>	Gasket bolt circle diameter	[mm]
<i>L</i>	Gasket bolthole diameter	[mm]
CLASS	Pressure Nominal, see EN 1759	-
NPS	Diameter Nominal, see EN 1759	-
SR	Spigot and recess	-
<i>t</i>	Thickness of gasket	[mm]
TG	Tongue and groove	-

**5 Classification, designation and coding****5.1 Range of Class designation**

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

Class 150

Class 300



Class 600

Class 900

## 5.2 Range of NPS designation

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

## 5.3 Gasket types

Gasket types, as defined in Clause 6 and as illustrated in Figure 1 and Figure 2, shall be designated as:

Type FF	Full face
Type IBC	Inside bolt circle
Type TG	Tongue and groove
Type SR	Spigot and recess

## 5.4 Information to be supplied by the purchaser

### 5.4.1 Mandatory information

The following information shall be supplied by the purchaser at the time of enquiry and order:

- the number and part of this document, i.e. EN 12560-1;
- gasket type designation (see 5.3);
- NPS designation (see Tables 2 to 4, as applicable);
- Class designation (see Tables 2 to 4, as applicable);
- thickness (see 8.1);
- material(s) (see 5.5 and Annex A);

### 5.4.2 Optional information

Several options are specified in this document and these are listed below. In the event that the purchaser does not indicate a wish to implement any of these options at the time of enquiry and order, the gaskets shall be supplied in accordance with the mandatory information (see 5.4.1):

- expected operating conditions for which the gasket will be used;
- the purchaser should indicate if gaskets are to be used in applications with specific regulations (e.g. water intended for human consumption). It shall be noted that the National regulations of both the country of origin and the country of use may be considered relevant.

## 5.5 Gasket designs and materials

For gaskets in accordance with this document, materials containing asbestos shall not be used. The gasket supplier shall ensure this.

Gaskets shall be manufactured in a single material or combination of materials and shall be:

- single flat sheet; or
- laminated ply; or

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c) moulded.

Examples of commonly used – materials are provided in Annex A.

Before ordering a gasket, it is recommended that the selection of the gasket type, material and thickness should be made in consultation with the gasket supplier (see Annex A).

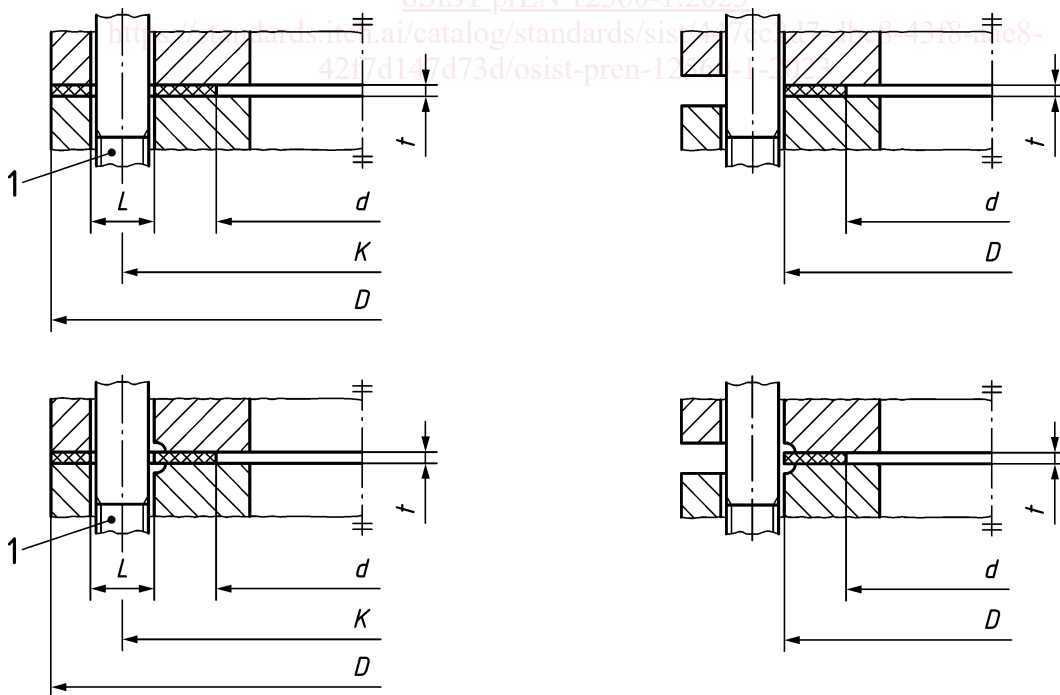
## 6 Gasket types

Gaskets shall be one of the following types:

- Type FF gasket, for use with type A (flat face) or type B (raised face) flange facings [see Figure 1 a) and Figure 2 a)];
- Type IBC gasket, for use with type A (flat face) or type B (raised face) flange facings [see Figure 1 b) and Figure 2 b)];
- Type TG gasket, for use with type C/D (tongue/groove) flange facings [see Figure 1 c)] and Figure 2 b)];
- Type SR gasket, for use with type E/F (spigot/recess) flange facings [see Figures 1 d) and Figure 2 b)];

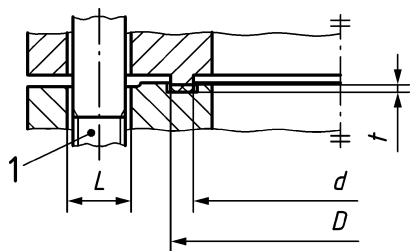
NOTE 1 The types of flange facings are specified in EN 1759-1, EN 1759-3, EN 1759-4 and, for information, the facings are shown in Figure 3.

NOTE 2 Gaskets of types described in Clause 6 a), b), c) and d) and having an outside diameter greater than 1 500 mm are available only in segmental form. The purchaser can consult the gasket manufacturer or supplier as to the forms available for the larger sizes of gaskets.

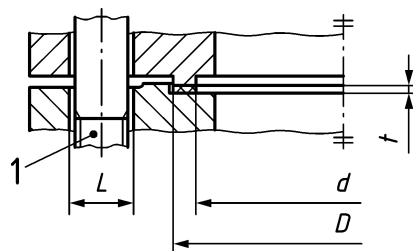


a) Type A flange facings with Type FF gasket

b) Type B flange facings with Type IBC gasket



c) Type C/D flange facings with Type TG gasket

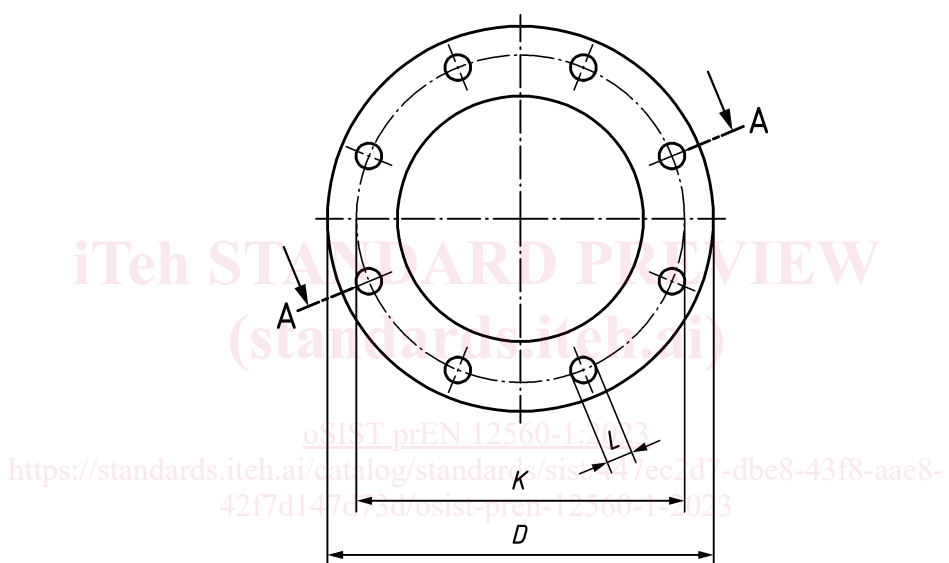


d) Type E/F flange facings with Type SR gasket

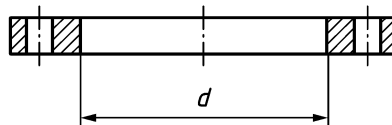
Key

1 bolt

Figure 1— Types of flange facings and gaskets



A-A  $\curvearrowright$  22,5°



a) Type FF gasket (for types A and B flange facings)