



SLOVENSKI STANDARD
oSIST prEN 1514-1:2023

01-januar-2023

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

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

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

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

Ta slovenski standard je istoveten z: prEN 1514-1

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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Will supersede EN 1514-1:1997

English Version

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

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

Flansche und ihre Verbindungen - Maße für
Dichtungen für Flansche mit PN-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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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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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European foreword

This document (prEN 1514-1:2023) 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 1514-1:1997.

In comparison with the previous edition EN 1514-1:1997, 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 on how to mark gaskets;
- j) the document has been editorially revised.

EN 1514 will consist of the following four 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*

The Annex A is informative and contains “Gasket materials”.

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Introduction

Dimensions for the internal diameter of gaskets are a compromise between all requirements of EN 1092-1, EN 1092-2, EN 1092-3, and EN 1092-4 so that a single value is given for each gasket size.

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1 Scope

This document specifies non-metallic flat gaskets, with or without inserts, for use with flanges in accordance with EN 1092-1, EN 1092-2, EN 1092-3 and EN 1092-4, and pipes and fittings in accordance with EN 545, EN 598, and EN 969, for pressure application up to and including PN 63 values and dimensions up to and including DN 4000. 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 545, *Ductile iron pipes, fittings, accessories and their joints for water pipelines — Requirements and test methods*

EN 598, *Ductile iron pipes, fittings, accessories and their joints for sewerage application — Requirements and test methods*

EN 969, *Ductile iron pipes, fittings, accessories and their joints for gas pipelines — Requirements and test methods*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 1092-2, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges*

EN 1092-3, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 3: Copper alloy flanges*

EN 1092-4, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN 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]

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

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

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

Note 3 to entry: The maximum allowable pressure of a pipework component depends on the PN number, the material and design of the component, its maximum allowable temperature, etc. The relevant European Component standards include tables of specified pressure/temperature ratings of, in minimum, include rules how to determine pressure/temperature ratings.

Note 4 to entry: It is intended that all components with the same PN and DN designations have the same mating dimensions for compatible flange types.

[SOURCE: EN 1333:2006, 2.1]

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.

d	Gasket inside diameter	[mm]
D	Gasket outside diameter	[mm]
DN	Diameter Nominal, see 3.1	-
FF	Full face	-
IBC	Inside bolt circle	-
K	Gasket bolt circle diameter	[mm]
L	Gasket bolthole diameter	[mm]
PN	Pressure Nominal, see 3.2	-
SR	Spigot and recess	-
t	Thickness of gasket	[mm]
TG	Tongue and groove	-

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

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

PN 2,5	PN 25
PN 6	PN 40

PN 10 PN 63

PN 16

5.2 Range of DN 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:

- a) the number and part of this document, i.e. EN 1514-1;
- b) gasket type designation (see 5.3);
- c) DN designation (see Table 2 to Table 6, as applicable);
- d) PN designation (see Table 2 to Table 6, as applicable);
- e) thickness (see 8.1);
- f) material(s) (see 5.5 and Annex A);

5.4.2 Optional information

Several options are specified in this part of EN 1514 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):

- a) whether the gasket is for use with pipes and fittings in accordance with EN 545, EN 598 or EN 969 (see Clause 8);
- b) expected operating conditions for which the gasket will be used;
- c) 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:

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- a) single flat sheet; or
- b) laminated ply; or
- 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).

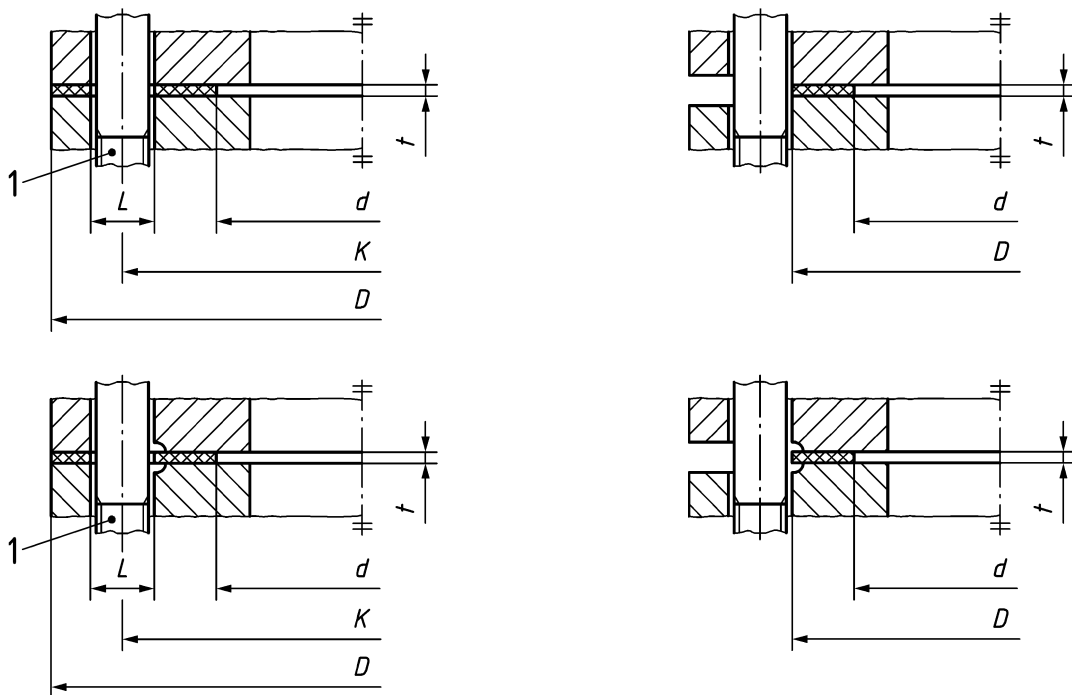
6 Gasket types

Gaskets shall be one of the following types. Only Type FF and Type IBC gaskets are suitable for use with flanges on pipes and fittings in accordance with EN 545, EN 598 and EN 969.

- a) 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)];
- b) 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)];
- c) Type TG gasket, for use with type C/D (tongue/groove) flange facings [see Figure 1 c) and Figure 2 b)];
- d) Type SR gasket, for use with type E/F (spigot/recess) flange facings [see Figure 1 d) and Figure 2 b)];

NOTE 1 The types of flange facings are specified in EN 1092-1, EN 1092-2, EN 1092-3 and EN 1092-4 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 is 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