BS EN 1514-1:2024

BSI Standards Publication

Flanges and their joints — Dimensions of gaskets for PN-designated flanges

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

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National foreword

This British Standard is the UK implementation of EN 1514-1:2024. It supersedes BS EN 1514-1:1997, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PSE/15, Flanges.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2024

ISBN 978 0 539 21301 0

ICS 23.040.80

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2024.

Amendments/corrigenda issued since publication

Date	Text affected

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1514-1

August 2024

ICS 23.040.80

Supersedes 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 European Standard was approved by CEN on 3 June 2024.

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Ref. No. EN 1514-1:2024 E

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European foreword

This document (EN 1514-1:2024) 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of an identical text or by endorsement, at the latest by February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes 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 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 6: Covered serrated metal gaskets for use with steel flanges*

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

— *Part 8: Polymeric O-Ring gaskets for grooved flanges*

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

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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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, and is comprised of 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 is not used for calculation purposes except where specified in the relevant standard.

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[SOURCE: EN ISO 6708:1995, 2.1, modified – definition made into one statement, recommendation removed from note 1 to entry]

3.2
PN
alphanumeric designation used for reference purposes related to a combination of mechanical and dimensional characteristics for a component of a pipework system, and is comprised of 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 is not 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 modified – definition made into one statement, recommendation removed from Note 1 to entry]

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	-

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