

<b>STN</b>	<b>Príruby a prírubové spoje</b> <b>Parametre tesnení a skúšobné postupy primerané</b> <b>zásadám konštrukcie na tesnenie spojov</b> <b>kruhových prírub</b>	<b>STN</b> <b>EN 13555</b>  13 1562
------------	---	--

Flanges and their joints - Gasket parameters and test procedures relevant to the design rules for gasketed circular flange connections

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/21

Obsahuje: EN 13555:2021

Oznámením tejto normy sa ruší  
STN EN 13555 (13 1562) z októbra 2014

**132589**



EUROPEAN STANDARD

**EN 13555**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2021

ICS 23.040.60; 23.040.80

Supersedes EN 13555:2014

English Version

## Flanges and their joints - Gasket parameters and test procedures relevant to the design rules for gasketed circular flange connections

Brides et leurs assemblages - Paramètres de joints et procédures d'essai relatives aux règles de calcul des assemblages à brides circulaires avec joint

Flansche und ihre Verbindungen - Dichtungskennwerte und Prüfverfahren für die Anwendung der Regeln für die Auslegung von Flanschverbindungen mit runden Flanschen und Dichtungen

This European Standard was approved by CEN on 27 December 2020.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## EN 13555:2021 (E)

<b>Contents</b>	<b>Page</b>
European foreword .....	4
Introduction .....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	7
4 Symbols .....	8
5 List of gasket parameters.....	9
6 Test equipment.....	10
6.1 Design.....	10
6.2 Test platens.....	10
6.3 Metal Foils .....	10
6.4 Surface finish.....	10
6.5 Measurement of gasket thickness.....	10
6.6 Loading .....	11
6.7 Temperature.....	11
6.8 Leakage measurement.....	11
7 Test gaskets.....	11
7.1 Number of gaskets .....	11
7.2 Procurement and identification of gaskets .....	11
7.3 Pre-conditioning of the gaskets.....	11
7.4 Dimensions of test gaskets .....	12
7.5 Measurement of test gaskets as received.....	12
7.6 Influence of gasket dimensions .....	12
8 Test procedures.....	13
8.1 General.....	13
8.2 Testing Strategy.....	13
8.3 Reference gasket thickness.....	13
8.4 Compression curve.....	14
8.5 Determination of $Q_{Smax}$ .....	14
8.6 Determination of the values of $E_G$ .....	18
8.7 Determination of $P_{QR}$ and $\Delta e_{Gc}$ .....	20
8.8 Determination of $Q_{min(L)}$ and $Q_{Smin(L)}$ .....	21
8.8.1 General.....	21
8.8.2 Leakage diagram .....	24
8.9 Determination of $Q_{Smin(L)}$ at elevated temperatures .....	24
8.10 Determination of axial coefficient of thermal expansion.....	24
8.11 Determination of the coefficient of static friction.....	25
9 Report details.....	25
Annex A (informative) Generalized test rig schematic .....	26
Annex B (informative) Test rig schematic for compression and compression creep tests.....	27

<b>Annex C (informative) Test rig schematic for ambient temperature leakage measurement .....</b>	<b>28</b>
<b>Annex D (informative) Schematic of leakage rig allowing use of interchangeable face plate .....</b>	<b>29</b>
<b>Annex E (informative) Transferability of measured leakage rates to service conditions .....</b>	<b>30</b>
<b>Annex F (informative) The measurement of the sealing parameter <math>Q_{Smin(L)}</math> after long term service simulating exposure to elevated temperature .....</b>	<b>31</b>
<b>Annex G (informative) Determination of the sealing characteristics of strip sealing materials available in coil form.....</b>	<b>33</b>
<b>Annex H (informative) Proposed method for the determination of the coefficient of static friction, <math>\mu_G</math>, of gaskets.....</b>	<b>34</b>
<b>Annex I (informative) Guideline for interpretation of test results and acceptable modification of measured characteristics.....</b>	<b>36</b>
<b>Bibliography .....</b>	<b>40</b>

**EN 13555:2021 (E)****European foreword**

This document (EN 13555:2021) 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 August 2021, and conflicting national standards shall be withdrawn at the latest by August 2021.

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 13555:2014.

In comparison with the previous edition, the following technical modifications have been made:

- a) in Clause 2 the list of normative references has been revised;
- b) in Clause 3 the list of definitions has been revised;
- c) in Clause 5 the list of gasket parameters has been revised;
- d) in 8.5 on the determination of  $Q_{Smax}$  has been revised;
- e) a new informative Annex I on the guideline for interpretation of test results and acceptable modification of measured characteristics has been added.

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, Turkey and the United Kingdom.

## **Introduction**

This document provides the test procedures to allow the generation of the gasket parameters to enable the design formulas established in EN 1591-1 to be employed. The same test procedures may be used for “Type Testing” of gaskets and gasket materials. These procedures are not for routine quality control purposes.

**EN 13555:2021 (E)****1 Scope**

This document specifies the gasket parameters required by EN 1591-1 and provides the test procedures for establishing the values of these parameters.

Gaskets which are wholly based upon elastomers, or based upon elastomers with only the inclusion of particulate fillers or particulate reinforcement, as opposed to gaskets combining elastomers, fillers and fibrous reinforcement, are beyond the scope of this document.

NOTE The testing procedures given might be applicable to gaskets of other shapes and dimensions.

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

EN 1514-1, *Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 1: Non-metallic flat gaskets with or without inserts*

EN 1514-2, *Flanges and their joints - Gaskets for PN-designated flanges - Part 2: Spiral wound gaskets for use with steel flanges*

EN 1514-3, *Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 3: Non-metallic PTFE envelope gaskets*

EN 1514-4, *Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 4: Corrugated, flat or grooved metallic and filled metallic gaskets for use with steel flanges*

EN 1514-6, *Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 6: Covered serrated metal gaskets for use with steel flanges*

EN 1514-7, *Flanges and their joints - Gaskets for PN-designated flanges - Part 7: Covered metal jacketed gaskets for use with steel flanges*

EN 1591-1:2013, *Flanges and their joints - Design rules for gasketed circular flange connections - Part 1: Calculation*

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

EN 1779, *Non-destructive testing - Leak testing - Criteria for method and technique selection*

EN 12560-1, *Flanges and their joints - Gaskets for Class-designated flanges - Part 1: Non-metallic flat gaskets with or without inserts*

EN 12560-2, *Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 2: Spiral wound gaskets for use with steel flanges*

EN 12560-3, *Flanges and their joints - Gaskets for Class-designated flanges - Part 3: Non-metallic PTFE envelope gaskets*



EN 12560-4, *Flanges and their joints - Gaskets for Class-designated flanges - Part 4: Corrugated, flat or grooved metallic and filled metallic gaskets for use with steel flanges*

EN 12560-5, *Flanges and their joints - Gaskets for Class-designated flanges - Part 5: Metallic ring joint gaskets for use with steel flanges*

EN 12560-6, *Flanges and their joints - Gaskets for Class-designated flanges - Part 6: Covered serrated metal gaskets for use with steel flanges*

EN 12560-7, *Flanges and their joints - Gaskets for Class-designated flanges - Part 7: Covered metal jacketed gaskets for use with steel flanges*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**