

**Äärikud ja nende ühendused.
Kinnitamine poltidega. Osa 2:
Terasäärikute poltide materjalide
klassifikatsioon, PN klassifikatsiooniga**

Flanges and their joints - Bolting - Part 2:
Classification of bolt materials for steel flanges, PN
designated

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 1515-2:2002 sisaldab Euroopa standardi EN 1515-2:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 19.06.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 1515-2:2002 consists of the English text of the European standard EN 1515-2:2001.</p> <p>This document is endorsed on 19.06.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p>Käsitlusala: This European Standard covers the classification of bolt materials combination with the flange material groups of steel flanges prEN 1092-1 (PN-designated).</p> | <p>Scope: This European Standard covers the classification of bolt materials combination with the flange material groups of steel flanges prEN 1092-1 (PN-designated).</p> |
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ICS 21.060.01, 23.040.60

Võtmesõnad: combined, definition, definitions, fasteners, flange connections, flanged fittings, flanges, material groups, materials, nuts, pipe couplings, screws, screws (bolts), steel flanges, steels

ICS 21.060.01; 23.040.60

English version

Flanges and their joints - Bolting - Part 2: Classification of bolt materials for steel flanges, PN designated

Brides et leurs assemblages - Boulonnerie - Partie 2:
Classification de matériaux de boulonnerie pour brides en
acier, désignées PN

Flansche und ihre Verbindungen - Schrauben und Muttern -
Teil 2: Klassifizierung von Schraubenwerkstoffen für
Stahlflansche, nach PN bezeichnet

This European Standard was approved by CEN on 20 October 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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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 June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

EN 1515 consists of two Parts:

Part 1: Selection of bolting;

Part 2: Classification of bolt materials for steel flanges, PN designated.

The annexes A and ZA are informative.

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.

1 Scope

This European Standard covers the classification of bolt materials combination with the flange material groups of steel flanges prEN 1092-1 (PN-designated).

Bolt materials are listed in EN 1515-1, flange material groups are listed in prEN 1092-1.

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

EN 1515-1, *Flanges and their joints - Bolting - Part 1: Selection of bolting.*

EN 10269, *Steels and nickel alloys for fasteners for use at elevated and/or low temperature properties.*

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs (ISO 898-1:1999).*

EN ISO 3506-1, *Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1: Bolts, screws and studs (ISO 3506-1:1997).*

3 Combination of materials

Bolt materials can be combined with flange material groups as given in Table 1. This table is valid for all flanges for which pressure temperature (p/T) ratings are given in prEN 1092-1. For flanges which have no p/T ratings (e.g. DN 700 and above), the tables may be used as a guide.

All bolt materials can be used in the range of the p/T ratings given for the flanges. Restrictions due to the classification shall be observed (see clause 4).

WARNING Bold materials 4.6 and 6.8 are not intended for the use in the scope of the Pressure Equipment Directive.

4 Classification of bolt materials

The classification of bolt materials as given in Table 1 is based on the comparison of the strengths of the flange material and the bolt material. The strength ratio r of the flange/bolt combination chosen is compared with the strength ratio of the flange bolt combination used for the standard flange calculation (see annex A).

For each flange material group the classification is done in three strength levels:

- **Low strength:** The strength ratio of the chosen flange/bolt combination is less than that used in the standard flange calculation.
These bolts may be used for less severe service, e.g. for water service or in case of oversized flanged joints. For definition of these service conditions, special experience is necessary otherwise a recalculation of the flanged joint shall be done.
- **Normal strength:** The strength ratio of the chosen flange/bolt combination is similar (within defined limits) to that used in the standard flange calculation.
These bolts may be used for all service in the range of the P/T-ratings unless there are other restrictions to the contrary.
- **High strength:** The strength ratio of the chosen flange/bolt combination is much more higher than that used in the standard flange calculation.
These bolts may be used in the same range like normal strength level bolting. During assembly however, care should be taken not to overstress the flanges (e. g. by means of torque control).