

Äärikud ja nende ühendused. Kinnitus. Osa 4: Poltide ja mutrite valik surveseadmete direktiivi 97/23/EÜ käsitusala

Flanges and their joints - Bolting - Part 4: Selection of bolting for equipment subject to the Pressure Equipment Directive 97/23/EC

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1515-4:2010 sisaldab Euroopa standardi EN 1515-4:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 28.02.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 16.12.2009.

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The standard is available from Estonian standardisation organisation.

ICS 21.060.10, 21.060.20, 23.040.60

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ICS 21.060.10; 21.060.20; 23.040.60

English Version

Flanges and their joints - Bolting - Part 4: Selection of bolting for
equipment subject to the Pressure Equipment Directive
97/23/EC

Brides et leurs assemblages - Boulonnerie - Partie 4:
Sélection de la boulonnerie pour équipements relevant de
la Directive Equipements sous pression 97/23/CE

Flansche und ihre Verbindungen - Schrauben und Muttern -
Teil 4: Auswahl von Schrauben und Muttern zur
Anwendung im Gültigkeitsbereich der Druckgeräterichtlinie
97/23/EG

This European Standard was approved by CEN on 14 November 2009.

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Foreword

This document (EN 1515-4:2009) 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of an identical text or by endorsement, at the latest by June 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

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

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, *Flanges and their joints — Bolting*, consists of the following parts:

- *Part 1: Selection of bolting*
- *Part 2: Classification of bolt materials for steel flanges, PN designated*
- *Part 3: Classification of bolt materials for steel flanges, class designated*
- *Part 4: Selection of bolting for equipment subject to the Pressure Equipment Directive 97/23/EC*

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

1 Scope

This European Standard is applicable to the selection of bolting for equipment subject to the Pressure Equipment Directive 97/23/EC.

It specifies standards and additional requirements for dimensions, materials and technical conditions of delivery for bolting.

The bolting selection covered by this European Standard is regarded to be used for combination with flanges according to the series EN 1092 (PN designated flanges) and the series EN 1759 (Class designated flanges).

The selection is based on commonly used materials, bolts and nuts. It covers temperature ranges of the general service of standard flanges (based on PN or Class).

NOTE 1 The bolting selection given may be used in combination with non-standard flanges too provided that the range of application of the equipment for which the bolting is intended to be used is covered. It is the purchaser's option to decide on this.

When selecting bolting according to this European Standard it is essential to take into account other parameters such as type of fluids, corrosion hazards and relaxation at elevated temperatures.

The purpose of this European Standard is to provide a selection of most commonly used bolting types and bolting material combinations as well a tool for easy selection of suitable bolting for equipment.

It is not the intention to specify all possible applications but to give guidance on the most commonly applications. According to this, e.g. application limits for material in the creep range are not explicitly covered in this European Standard but some bolting materials listed (see Table 3, footnote h) are suitable to be used in this temperature range. Wherever the starting material standard provides mechanical properties for this temperature range respective reference is made in Table 3.

NOTE 2 Special services and ambient conditions may require the application of coatings. It is the purchaser's option to decide on this. Depending on the coating used, a verification of the temperature ranges given in Table 3 may be required.

2 Normative references

The following referenced documents are indispensable for the application 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 764-5:2002, *Pressure Equipment — Part 5: Compliance and Inspection Documentation of Materials*

EN 1092-1:2007, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 1759-1:2004, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, NPS 1/2 to 24*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 10269:1999, *Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties*

EN 13445-3:2009, *Unfired pressure vessels — Part 3: Design*

EN 13480-3:2002, *Metallic industrial piping — Part 3: Design and calculation*

EN 20898-2:1993 *Mechanical properties of fasteners — Part 2: Nuts with specified proof load values — Coarse thread (ISO 898-2:1992)*

EN ISO 898-1:2009, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread (ISO 898-1:2009)*

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

EN ISO 3506-2:1997, *Mechanical properties of corrosion-resistant stainless-steel fasteners — Part 2: Nuts (ISO 3506-2:1997)*

EN ISO 4014:2000, *Hexagon head bolts — Product grades A and B (ISO 4014:1999)*

EN ISO 4017:2000, *Hexagon head screws — Product grades A and B (ISO 4017:1999)*

EN ISO 4032:2000, *Hexagon nuts, style 1 — Product grades A and B (ISO 4032:1999)*

EN ISO 4033:2000, *Hexagon nuts, style 2 — Product grades A and B (ISO 4033:1999)*

EN ISO 16426:2002, *Fasteners — Quality assurance system (ISO 16426:2002)*

ISO 261, *ISO general purpose metric screw threads — General plan*

ISO 965-2:1998, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality*

3 Terms and definitions, symbols and units

3.1 Terms and definitions

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

3.1.1

bolting

type of fastener such as a bolt, screw, stud, tie-rod, reduced shank bolt (also named as necked-down bolt) and nut

NOTE Also defined as fasteners (see EN ISO 16426).

3.1.2

purchaser

person or organization that orders products in accordance with this European Standard

NOTE The purchaser is not necessarily, but may be, a manufacturer of equipment in accordance with the EU Directive listed in Annex ZA. Where a purchaser has responsibilities under this EU Directive, this European Standard will provide a presumption of conformity with the essential requirements of the Directive so identified in Annex ZA.

3.1.3

bolting manufacturer

person or organization that is responsible for the compliance of the bolting with the requirements of this European Standard and the referenced standards given for bolting and materials agreed with the purchaser