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BS EN 14399-1:2015



BSI Standards Publication

High-strength structural bolting assemblies for preloading

Part 1: General requirements

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This British Standard is the UK implementation of EN 14399-1:2015. It supersedes BS EN 14399-1:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FME/9/-/2, Fasteners for structural bolting.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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High-strength structural bolting assemblies for preloading - Part 1: General requirements

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apte à la précontrainte - Partie 1: Exigences générales

Hochfeste vorspannbare Garnituren für
Schraubverbindungen im Metallbau - Teil 1: Allgemeine
Anforderungen

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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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 14399-1:2015) has been prepared by Technical Committee CEN/TC 185 "Fasteners", 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of an identical text or by endorsement, at the latest by August 2015 and conflicting national standards shall be withdrawn at the latest by November 2016.

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 supersedes EN 14399-1:2005.

In comparison with EN 14399-1:2005, the following modifications have been made:

- the standard was revised to meet the new format for harmonized standards and in relation to the Regulation (EU) No. 305/2011 (CPR);
- the requirements of this standard only relate to the product characteristics of bolting assemblies which are necessary for CE marking;
- all clauses dealing with further technical or other requirements have been transferred to EN 14399-2;
- the table containing the overview of the composition of bolting assemblies and component marking has been transferred to EN 14399-2.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports basic work requirements of Regulation (EU) No. 305/2011.

For relationship with Regulation (EU) No. 305/2011, see informative Annex ZA, which is an integral part of this document.

EN 14399 consists of the following parts, under the general title *High-strength structural bolting assemblies for preloading*:

- *Part 1: General requirements* (the present document);
- *Part 2: Suitability for preloading*;
- *Part 3: System HR — Hexagon bolt and nut assemblies*;
- *Part 4: System HV — Hexagon bolt and nut assemblies*;
- *Part 5: Plain washers*;
- *Part 6: Plain chamfered washers*;
- *Part 7: System HR — Countersunk head bolt and nut assemblies*;
- *Part 8: System HV — Hexagon fit bolt and nut assemblies*;
- *Part 9: System HR or HV — Direct tension indicators for bolt and nut assemblies*;
- *Part 10: System HRC — Bolt and nut assemblies with calibrated preload*.

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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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This document on structural bolting assemblies reflects the situation in Europe where two technical solutions exist to achieve the necessary ductility of bolting assemblies. These solutions utilize different bolting assemblies (system HR, HV and HRC). Both systems are well proven and it is the responsibility of the experts for structural connections whether they use the one or the other system.

It is however important for the performance of the bolting assembly to avoid mixing up the components of both systems. Therefore, the bolts and nuts for both systems are standardized in one single part of this European Standard each and the marking of the components of the same system is consistent.

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1 Scope

This European Standard specifies the general requirements for bolt/nut/washer(s) assemblies for high-strength structural bolting, which are suitable for preloading.

The intended use of bolting assemblies in accordance with this European Standard is structural metallic works.

NOTE 1 High-strength structural bolting assemblies in accordance with EN 14399-2 to EN 14399-10 are designed to fulfil the requirements of this European Standard.

NOTE 2 High-strength structural bolting assemblies are suitable for preloading in accordance with EN 1090-2 in steel structures.

High-strength structural bolting assemblies smaller than M12 are not designed to be preloaded.

High-strength structural bolting assemblies are not designed to be welded.

Railway rail fasteners are not covered by this standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1090-2:2008+A1:2011, *Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures*

EN 14399-2:2015, *High-strength structural bolting assemblies for preloading - Part 2: Suitability for preloading*

EN 14399-3:2015, *High-strength structural bolting assemblies for preloading - Part 3: System HR - Hexagon bolt and nut assemblies*

EN 14399-4:2015, *High-strength structural bolting assemblies for preloading - Part 4: System HV - Hexagon bolt and nut assemblies*

EN 14399-5, *High-strength structural bolting assemblies for preloading - Part 5: Plain washers*

EN 14399-6, *High-strength structural bolting assemblies for preloading - Part 6: Plain chamfered washers*

EN 14399-7:2007, *High-strength structural bolting assemblies for preloading - Part 7: System HR - Countersunk head bolt and nut assemblies*

EN 14399-8:2007, *High-strength structural bolting assemblies for preloading - Part 8: System HV - Hexagon fit bolt and nut assemblies*

EN 14399-9:2009, *High-strength structural bolting assemblies for preloading - Part 9: System HR or HV - Direct tension indicators for bolt and nut assemblies*

EN 14399-10:2009, *High-strength structural bolting assemblies for preloading - Part 10: System HRC - Bolt and nut assemblies with calibrated preload*

EN ISO 225, *Fasteners - Bolts, screws, studs and nuts - Symbols and descriptions of dimensions (ISO 225)*