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BSI Standards Publication

Terminations for steel wire ropes — Safety

Part 3: Ferrules and ferrule-securing

bsi.

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National foreword

This British Standard is the UK implementation of EN 13411-3:2022. It supersedes BS EN 13411-3:2004+A1:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MHE/2, Wire ropes.

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

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Amendments/corrigenda issued since publication

Date	Text affected

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EUROPEAN STANDARD **EN 13411-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2022

ICS 21.060.70; 53.020.30 Supersedes EN 13411-3:2004+A1:2008

English Version

Terminations for steel wire ropes - Safety - Part 3: Ferrules and ferrule-securing

Terminaisons pour câbles en acier - Sécurité - Partie 3 : Manchons et boucles manchonnées

Endverbindungen für Drahtseile aus Stahldraht - Sicherheit - Teil 3: Pressklemmen und Verpressen

This European Standard was approved by CEN on 4 December 2022.

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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 foreword

This document (EN 13411-3:2022) has been prepared by Technical Committee CEN/TC 168 “Chains, ropes, webbing, slings and accessories - Safety”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

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 13411-3:2004+A1:2008.

This document has been modified by the removal of Annexes ZA and ZB in accordance with the standard being de-harmonized.

Annex A is informative.

EN 13411, *Terminations for steel wire ropes — Safety* consists of the following parts:

— *Part 1: Thimbles for steel wire rope slings*;

— *Part 2: Splicing of eyes for wire rope slings*;

— *Part 4: Metal and resin socketing*;

— *Part 5: U-bolt wire rope grips*;

— *Part 6: Asymmetric wedge socket*;

— *Part 7: Symmetric wedge socket*;

— *Part 8: Swage terminals and swaging*;

— *Part 9: Solid Thimbles*.

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

This document is a Type C standard as stated in EN ISO 12100:2010.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

It is understood that type testing of a ferrule-secured eye termination system is the responsibility of the ferrule-secured eye termination system designer.

It is also understood that the ferrule supplier is responsible for ensuring that the material, design, and quality of the ferrule is in accordance with the ferrule-secured eye system designer’s specification.

Ferrule-secured eyes manufactured by the ferrule-secured eye termination producer in accordance with this document are permitted for use as rope terminations in the production of steel wire rope slings. They are also used as terminations for steel wire rope assemblies for raising, lowering, and supporting loads.

The steel wire rope terminations concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this Type C standard are different from those which are stated in Type A or B standards, the provisions of this Type C standard take precedence over the provisions of the other standards, for steel wire rope terminations that have been designed and produced according to the provisions of this Type C standard.

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1 Scope

This document deals with the requirements for the ferrule-securing of eyes and endless loops.

It also deals with the requirements for ferrules for the ferrule-securing of eyes and endless loops.

This document applies to the ferrule-securing of eye terminations formed either by a Flemish eye or turn-back eye and covers ferrules made of non-alloy carbon steel and aluminium.

This document applies to slings and assemblies using steel wire ropes for general lifting applications up to and including 60 mm diameter conforming to EN 12385-4, lift ropes conforming to EN 12385-5 and spiral strand ropes conforming to EN 12385-10.

Type testing of ferrule-secured systems and manufacturing quality control requirements are also specified.

This document deals with all significant hazards, hazardous situations, and events relevant to this particular steel wire rope termination when used as intended and under conditions of use which are foreseeable by the manufacturer.

This document applies to terminations of steel wire ropes with ferrules and ferrule-securing which are manufactured after the date of this publication.

NOTE One design of ferrule-secured turn-back eye termination using an oval aluminium ferule which satisfies the requirements of this document when securing ropes having rope grades up to and including 1960 is given for information in Annex A.

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 12385-2, *Steel wire ropes — Safety — Part 2: Definitions, designation and classification*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12385-2 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
ferrule-secured eye termination
FSET
eye formed at a rope end secured by means of a ferrule pressed on the rope

3.2
Flemish eye ferrule-secured termination
eye formed at a rope end secured by means of a ferrule pressed on the main body of the rope and the tail ends of the strands from the Flemish eye