

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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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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Contents

Page

European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	6
4 List of hazards	7
5 Safety requirements and/or measures	8
5.1 Ferrule-secured system	8
5.1.1 General.....	8
5.1.2 Type testing.....	9
5.1.3 Instructions to be provided by the ferrule-secured system designer.....	10
5.2 Ferrules.....	10
5.2.1 Material.....	10
5.2.2 Dimensions.....	10
5.2.3 Manufacture and quality control of ferrule.....	11
5.2.4 Certificate.....	11
5.2.5 Marking.....	11
5.3 Ferrule-securing.....	11
5.3.1 General.....	11
5.3.2 Matching of ferrule to wire rope.....	11
5.3.3 Forming the eye	12
5.3.4 Pressing the ferrule.....	14
5.3.5 Quality control after pressing of the ferrule	14
6 Verification of the safety requirements and/or measures	14
6.1 Qualification of personnel	14
6.2 Tensile type test (FSET system designer).....	14
6.3 Fatigue type test (FSET system designer)	15
6.4 Fatigue type test of Flemish eye ferrule-secured termination of crane hoist rope (FSET system designer).....	15
6.5 Ferrule dimensions before pressing (Ferrule manufacturer).....	15
6.6 Manufacture and quality control of ferrule (Ferrule manufacturer).....	15
6.7 Ferrules (FSET or ferrule-secured endless loop manufacturer)	15
6.8 Matching of ferrule to wire rope (FSET or ferrule-secured endless loop manufacturer)	15
6.9 Forming the eye (FSET or ferrule-secured endless loop manufacturer).....	15
6.10 Pressing the ferrule (FSET or ferrule-secured endless loop manufacturer).....	15
6.11 Quality control after pressing the ferrule(s) (FSET or ferrule-secured endless loop manufacturer)	15
7 Information for use	16
7.1 Marking.....	16
7.2 Certificate.....	16

Annex A (informative) Specification for one design of turn-back eye ferrule-secured termination	17
A.1 General	17
A.2 Types of terminations	17
A.3 Ropes for this design of ferrule	18
A.3.1 General	18
A.3.2 Rope types	18
A.3.3 Metallic cross-sectional area factor	19
A.3.4 Rope grade	19
A.3.5 Types of rope lay	19
A.4 Tubing	19
A.4.1 General	19
A.4.2 Material	19
A.4.3 Straightness	19
A.4.4 Wall thickness	20
A.5 Identification and dimensions of ferrules (unpressed)	21
A.6 Matching wire rope to ferrule	23
A.7 Making the eye termination	26
A.7.1 Positioning of ferrule (Types A and B)	26
A.7.2 Pressing the ferrule	27
A.7.3 Ferrules after pressing	27
A.8 Information for use	29
A.8.1 Identification marking	29
A.8.2 Temperature limits	29
Bibliography	30

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.

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.

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 ferrule 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