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BSI Standards Publication

Terminations for steel wire ropes — Safety

Part 9: Solid thimbles

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National foreword

This British Standard is the UK implementation of EN 13411-9:2021.

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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EUROPEAN STANDARD **EN 13411-9**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2021

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English Version

Terminations for steel wire ropes - Safety - Part 9: Solid thimbles

Terminaisons pour câbles en acier - Sécurité - Partie 9: Cosses pleines

Endverbindungen für Drahtseile aus Stahldraht - Sicherheit - Teil 9: Vollkauschen

This European Standard was approved by CEN on 20 December 2020.

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European foreword

This document (EN 13411-9:2021) has been prepared by Technical Committee CEN/TC 168 “Chains, ropes, webbing, slings and accessories”, 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of an identical text or by endorsement, at the latest by October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

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.

EN 13411, under the general title *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 3: Ferrules and ferrule-securing*

— *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*

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1 Scope

This document specifies the minimum requirements for solid thimbles made of steel or cast iron for terminations of stranded steel wire ropes.

This document is applicable to ferrule-secured terminations with solid thimbles in combination with ferrules (see EN 13411-3), that have an efficiency factor K_T of at least 0,9, and to spliced terminations with solid thimbles (see EN 13411-2), that have an efficiency factor K_T of at least 0,8, which are used as accessories for steel wire ropes, such as slings or wire rope assemblies, having a lifting, lowering or load-bearing effect in hoisting equipment.

Examples of designs of solid thimbles which meet the requirements of this standard are given in informative Annexes B and C.

Round thimbles (thimble with rotational symmetry around the bore) are not subject to this document.

This document is applicable to ferrule-secured terminations that are manufactured after the date of publication of this document.

Hazards that are dealt with in this document are listed in Clause 4.

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 1562:2019, *Founding - Malleable cast irons*

EN 1563:2018, *Founding - Spheroidal graphite cast irons*

EN 10025 (all parts), *Hot rolled products of structural steels*

EN 10293:2015, *Steel castings - Steel castings for general engineering uses*

EN 10340:2007, *Steel castings for structural uses*

EN 12385-2:2002+A1:2008, *Steel wire ropes - Safety - Part 2: Definitions, designation and classification*

EN 13411-3:2004+A.1:2008, *Terminations for steel wire ropes - Safety - Part 3: Ferrules and ferrule-securing*

EN ISO 1461:2009, *Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:2009)*

EN ISO 7500-1:2018, *Metallic materials - Calibration and verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Calibration and verification of the force-measuring system (ISO 7500-1:2018)*

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