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Ohutus. Osa 5: Vedrukammitsaga  
terastrosshaaratsid**

Terminations for steel wire ropes - Safety - Part 5: U-bolt wire rope grips

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13411-5:2003 sisaldab Euroopa standardi EN 13411-5:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 14.08.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13411-5:2003 consists of the English text of the European standard EN 13411-5:2003.</p> <p>This document is endorsed on 14.08.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This European Standard specifies the minimum requirements for the safe behaviour of terminations associated with U-bolt wire rope grips manufactured from ferrous materials for use as intended by the manufacturer of the U bolt grip</p>	<p><b>Scope:</b></p> <p>This European Standard specifies the minimum requirements for the safe behaviour of terminations associated with U-bolt wire rope grips manufactured from ferrous materials for use as intended by the manufacturer of the U bolt grip</p>
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ICS 21.060.70, 53.020.30

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ICS 21.060.70; 53.020.30

English version

## Terminations for steel wire ropes - Safety - Part 5: U-bolt wire rope grips

Terminaisons pour câbles en acier - Sécurité - Partie 5:  
Serre-câbles pour terminaisons à œil de câbles en acier

Endverbindungen für Drahtseile aus Stahldraht - Sicherheit  
- Teil 5: Drahtseilklemmen mit U-förmigem klemmbügel

This European Standard was approved by CEN on 25 March 2003.

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## Foreword

This document (EN 13411-5:2003) has been prepared by Technical Committee CEN /TC 168 "Chains, ropes, webbings, 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 November 2003, and conflicting national standards shall be withdrawn at the latest by November 2003.

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 EC Directive(s).

For relationship with EC Directive(s), see informative annex ZA, which is an integral part of this document.

Annexes A and B are informative.

This European Standard also contains a Bibliography.

The other Parts of this European Standard are:

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 6: Asymmetric wedge socket

Part 7: Symmetric wedge socket

This is the first edition of this Part of this European Standard.

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

## Introduction

This European Standard has been prepared to provide a means of conforming with the essential safety requirements of the Machinery Directive and associated EFTA Regulations.

Purchasers ordering to this standard are advised to specify in their purchasing contract that the supplier operates a quality assurance system applicable to the relevant part of this standard (e.g. EN ISO 9001) to ensure themselves that products claimed to comply consistently achieve the required level of quality.

## 1 Scope

This European Standard specifies the minimum requirements for U-bolt wire rope grips manufactured from ferrous materials and the safe behaviour of eye terminations secured by U-bolt wire rope grips for use as intended by the manufacturer.

Suitable uses include suspending static loads and single use lifting operations which have been assessed by a competent person taking into account appropriate safety factors.

U-bolt wire rope grips are not suitable for use with spiral ropes.

This standard does not cover U-bolt wire rope grips as the primary securing devices on mine hoists, crane hoists or eye terminations for slings for general lifting service.

Examples of grips together with fitting instructions are given in informative annexes A and B.

The hazards covered by this standard are identified in clause 4.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-2:1991, *Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles and specifications*

EN 1050:1996, *Safety of machinery – Principles for risk assessment*.

EN 1562, *Founding – Malleable cast irons*

EN 12385-1:2002, *Steel wire ropes – Safety – Part 1: General requirements*.

EN 12385-2:2003, *Steel wire ropes – Safety – Part 2: Definitions, designation and classification*.

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

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs (ISO 898-1:1999)*

EN ISO 4759-1, *Tolerances for fasteners Part 1: Bolts, screws, studs and nuts - Product grades A, B and C (ISO 4759-1:2000)*.

EN ISO 7500-1, *Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines (ISO 7500-1:1999)*

### 3 Terms and definitions

For the purposes of this European Standard the terms and definitions given in EN 12385-2:2003 and the following apply:

#### 3.1

##### **U-bolt wire rope grip**

U-bolt wire rope grip: assembly consisting of a U-bolt, bridge and nuts that allow for two parts of rope to be pressed together when the nuts are tightened'

#### 3.2

##### **grip-secured eye termination**

grip-secured eye termination: eye termination secured by wire rope grips fitted in accordance with the manufacturer's instructions'

### 4 List of hazards

Accidental release of a load, or release of a load due to failure of a wire rope grip puts at risk either directly or indirectly the safety or health of those persons within the danger zone.

Temperature hazard is not covered as in use temperature is limited by the wire rope.

Table 1 contains those hazards that require action to reduce risk identified by risk assessment as being specific and significant for wire rope grips.

**Table 1 — Hazards and associated requirements**

Hazards identified in annex A of EN 1050:1996		Relevant clause of annex A of EN 292-2:1991	Relevant clause/subclause of this standard
1	Mechanical hazard due to inadequacy of strength	1.3.2 4.1.2.3 4.1.2.5 4.2.4 1.7.3 4.3.1 4.2.4	5 5 6 6
1.7	Puncture hazard	1.3	5
10.4	Errors of fitting hazard	1.5.4	7