SLOVENSKI STANDARD
SIST EN 13411-8:2012

01-januar-2012

Zaključki jeklenih žičnih vrvi - Varnost - 8. del: Jekleni vrvni priključki (fitingi) in prešanje na vrv

Terminations for steel wire ropes - Safety - Part 8: Swage terminals and swaging

Endverbindungen für Drahtseile aus Stahldraht - Sicherheit - Teil 8: Stahlfittinge und Verpressungen

Terminaisons pour câbles en acier - Sécurité - Partie 8: Bornes à estamper et estampage

Ta slovenski standard je istoveten z: **EN 13411-8:2011**

ICS:

53.020.30	Pribor za dvigalno opremo	Accessories for lifting equipment
77.140.99	Drugi železni in jekleni izdelki	Other iron and steel products

SIST EN 13411-8:2012 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13411-8

September 2011

ICS 53.020.30; 77.140.99

English Version

Terminations for steel wire ropes - Safety - Part 8: Swage terminals and swaging

Terminaisons pour câbles en acier - Sécurité - Partie 8: Terminaisons à sertir et sertissage

Endverbindungen für Drahtseile aus Stahldraht - Sicherheit - Teil 8: Stahlfittinge und Verpressungen

This European Standard was approved by CEN on 13 August 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 13411-8:2011: E

Contents

Page

Foreword

This document (EN 13411-8:2011) 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 March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

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*.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard is a type C standard as stated in EN ISO 12100.

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

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 machines that have been designed and built according to the provisions of this type C standard.

1 Scope

This European Standard specifies the minimum requirements for swage terminals and the securing of such terminals by a swaging process to carbon steel rope conforming to EN 12385-4 and EN 12385-5, spiral strand rope conforming to EN 12385-10 and stainless steel stranded rope.

This European Standard is not applicable to spiral rope incorporating full lock wires – see EN 12385-10 –, nor ropes with coverings and /or fillings (see 3.6.3 of EN 12385-2:2002+A1:2008).

This European Standard is applicable to swaged terminations that have a terminal efficiency factor, K_T, of at least 0,9 and are used as part of a wire rope accessory such as a sling, or wire rope assembly that performs a raising, lowering, hauling or supporting function on lifting machinery.

This European Standard is applicable to terminals of the following types that are made of carbon or stainless steel:

— open swage socket;

— closed swage socket;

— swage terminal with thread;

— swage terminal end stop.

This European Standard deals with all significant hazards, hazardous situations and events relevant to swaged terminations, when used as intended and under conditions of misuse which are reasonably foreseeable (see Clause 4).

This European Standard applies to swaged terminations which are manufactured after the date of its publication.

This European Standard is not applicable to swaged terminations used for anchoring ropes to winch drums.

2 Normative references

The following referenced documents are indispensable for the application 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 12385-1, *Steel wire ropes — Safety — Part 1: General requirements*

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

EN ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 14121-1, *Safety of machinery — Risk assessment — Part 1: Principles (ISO 14121-1:2007)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12385-2:2002+A1:2008 and EN ISO 12100-1:2003 and the following apply.

3.1
swage terminal

3.1.1
open swage socket
swage terminal comprising swage shank (1) into which wire rope is inserted and then permanently attached by swaging and a fork coupling section (2) that enables the swaged termination to be connected to the load

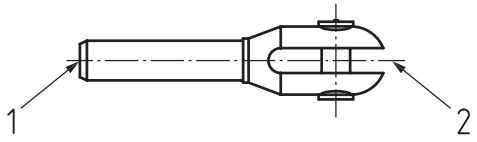

Figure 1

NOTE The open swage socket is normally supplied complete with pin.

3.1.2
closed swage socket

swage terminal comprising swage shank (1) into which wire rope is inserted and then permanently attached by swaging and a eye coupling section (3) that enables the swaged termination to be connected to the load

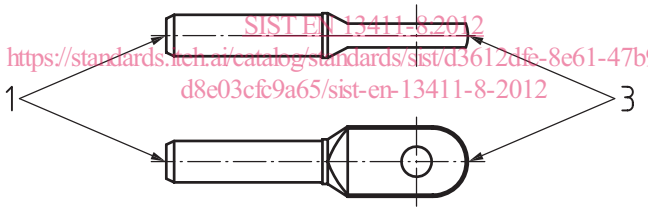

Figure 2

3.1.3
swage terminal with thread
swage terminal comprising swage shank (1) into which wire rope is inserted and then permanently attached by swaging and a male thread coupling section (4) that enables the swaged termination to be connected to the load

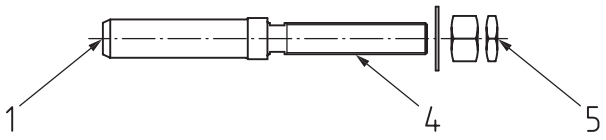

Figure 3

NOTE May be supplied with nut and locknut (5).

3.1.4
swage terminal end stop
swage terminal where the swage shank also directly supports the tension applied to the swaged termination

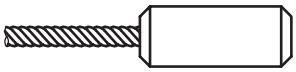

Figure 4

3.2
swaging
cold process by which the shank of a swage terminal is radially reduced with a die by pressing, rolling or hammering

NOTE Swaging by hammering is also referred to as 'rotary swaging'.

3.3
swaged termination
completed assembly of swage terminal and rope by swaging

3.4
swaging system
design parameters for the swage terminal, specifically including the before and after swage dimensions, and the process of attaching the terminal to the rope

3.5
swaging system designer
person or organization that designs the swage terminal and the swaging system and assumes responsibility for type testing

3.6
swage terminal manufacturer
person or organization that manufactures the swage terminals in accordance with the swaging system designer's specification

3.7
swaged termination manufacturer
person or organization that manufactures swaged terminations in accordance with the swaging system designer's instructions

3.8
slippage
relative linear displacement of the rope out of the swage shank

3.9
termination efficiency factor
K_T
factor which allows for the efficiency of the termination

NOTE In the case of swage terminations, K_T = 0,9.

3.10
characteristic breaking force
F_{uk}
product of the minimum breaking force of the rope (F_{min}) and the termination efficiency factor, i.e.:

$F_{uk} = F_{min}.K_T$