



SLOVENSKI STANDARD

SIST EN 1677-2:2001

01-maj-2001

Sestavni deli obes - Varnost - 2. del: Kovani dvigalni kavliji z varovalom, kakovostni razred 8

Components for slings - Safety - Part 2: Forged steel lifting hooks with latch, Grade 8

Einzelteile für Anschlagmittel - Sicherheit - Teil 2: Geschmiedete Haken mit Sicherungsklappe, Güteklasse 8

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Accessoires pour élingues - Sécurité - Partie 2: Crochets de levage en acier forgé a linguet, Classe 8

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Ta slovenski standard je istoveten z: EN 1677-2:2000

ICS:

53.020.30	Pribor za dvigalno opremo	Accessories for lifting equipment
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ICS 53.020.30

English version

Components for slings - Safety - Part 2: Forged steel lifting hooks with latch, Grade 8

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Einzelteile für Anschlagmittel - Sicherheit - Teil 2: Geschmiedete Haken mit Sicherungsklappe, Güteklasse 8

This European Standard was approved by CEN on 21 May 2000.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard 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 February 2001, and conflicting national standards shall be withdrawn at the latest by February 2001.

This European Standard 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(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

The other Parts of EN 1677 for components for slings are:

- Part 1: Forged steel components - Grade 8
- Part 3: Forged steel self-locking hooks - Grade 8
- Part 4: Links - Grade 8
- Part 5: Forged steel lifting hooks with latch - Grade 4
- Part 6: Links - Grade 4

Annexes A and B of this European standard are informative.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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0 Introduction

This European Standard has been prepared to be a harmonized standard providing one means of complying with the essential safety requirements of the Machinery Directive and associated EFTA regulations.

The hooks covered by this Part of EN 1677 are normally supplied to be part of a sling, but they may also be used for other applications. In such instances it is important that the hook design is checked to ensure its fitness for the intended use.

The extent to which hazards are covered is indicated in the scope. In addition, lifting equipment shall conform as appropriate to EN 292 for hazards that are not covered by this standard.

1 Scope

This Part of EN 1677 specifies requirements for forged steel lifting hooks with latch of grade 8 having eye or clevis and pin up to 63 t WLL, mainly for use in:

- chain slings according to EN 818-4
- steel wire rope slings according to prEN 13414-1:1999
- textile slings according to prEN 1492-1:2000, prEN 1492-2:2000

intended for lifting objects, materials or goods.

This Part of EN 1677 does not apply to hand forged hooks.

The hazards covered by this Part of EN 1677 are identified in clause 4.

Annex A is informative, and gives the bases for calculation of hook dimensions.

Annex B is informative, and gives an example of a designation system for hooks of grade 8.

Annex ZA gives the relationship with EU-Directives

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2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at 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.

EN 292-1	Safety of machinery - Basic concepts - General principles for design Part 1: Basic terminology, methodology
EN 292-2: 1991/ A1: 1995	Safety of machinery - Basic concepts - General principles for design Part 2: Technical principles and specifications (Amendment 1: 1995)
EN 818-4	Short-link chain for lifting purposes - Safety Part 4: Chain slings Grade 8
EN 818-6:2000	Short link chain for lifting purposes - Safety Part 6: Chain slings - Specification for information for use and maintenance to be provided by the manufacturer
EN 1050: 1996	Safety of machinery - Principles of risk assessment
EN 1677-1:2000	Components for slings - Safety Part 1: Forged steel components - Grade 8
EN 1492-1:2000	Textile slings - Safety Part 1: Flat woven webbing slings made of man-made fibres
EN 1492-2:2000	Textile slings - Safety Part 2: Round slings made of man-made fibres
prEN 13414-1:1999	Steel wire rope slings – Safety Part 1: Wire rope slings

3 Terms and Definitions

For the purpose of this Part of EN 1677, the definitions given in EN 1677-1:2000 apply.

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4 Hazards

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

In order to provide the necessary strength and durability of hooks, this Part of EN 1677 gives requirements for the design, manufacture and testing to ensure the specified levels of performance are met.

Since failure can be caused by the incorrect choice of grade and specification of hook, this Part of EN 1677 also gives requirements for marking and the manufacturer's certificate.

Errors in fitting can also lead to failure and this Part of EN 1677 contains dimensional requirements to allow correct fit.

Risk of injury due to sharp edges, sharp angles or rough surfaces when handling is also covered by this standard.

Those aspects of safe use associated with good practice are given in EN 818-6:2000.

Table 1 contains those hazards which require action to reduce risk identified by risk assessment as being specific and significant for forged steel lifting hooks with latch, Grade 8.

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/ A1: 1995	Relevant clause/subclause of this Part of EN 1677
1	Mechanical Hazard due to Inadequacy of Strength	1.3.2	5
		4.1.2.3	5
		4.1.2.5	5
		4.2.4	5
		1.7.3	7
		1.7.4	9
1.3	Cutting hazard	1.3.4	5.4
1.8	Friction or abrasion hazard	1.3.4	5.4
15	Errors of fitting Hazard	1.5.4	5.2 9
17	Falling objects	1.3.3	5.6

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5 Safety requirements

5.1 Design

The articulation and relative movement shall be in accordance with 5.1 of EN1677-1:2000.

NOTE : The form of the hook is not specified in detail. For example, a minimum value of dimension F (see figure 1) as measured in any direction is specified so that the eye of the hook can accommodate a pin, but the eye of the hook need not be circular.

The form of the upper end shall be either of the eye type or the clevis type as designated in table 2 and figure 1.

Each hook shall have a spring loaded latch conforming to 5.6 to ensure that the load cannot become accidentally unhooked.

Table 2: Forms of hooks

Form	Description	Principal use
E	Eye type	Chain slings, wire rope slings and textile slings
C	Clevis type	Mechanically assembled chain slings

5.2 Dimensions

The principal dimensions of the hooks shall conform to table 3, in which the hook dimensions are related to the working load limit.

NOTE 1: With an eye type hook, connecting devices may be required between the hook and the rest of the sling.

NOTE 2: For direct use in wire ropeslings and textile slings, dimension F should be larger than the minimum value given in table 3.

In addition, the following requirements shall be met:

- a) the actual point height B shall be equal to or greater than the full throat opening O (see figure 1);
- b) the full throat opening O shall not exceed 95 % of the actual seat diameter D;
- c) the hook latch shall be capable of closing over the maximum diameter of bar A, as indicated in figure 1, that can be admitted through the actual throat opening O_1 .

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