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Safety of machinery - Interlocking devices associated
with guards - Principles for design and selection
CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1088:1999+A2:2008 sisaldab Euroopa standardi EN 1088:1995+A2:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 18.08.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 09.07.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1088:1999+A2:2008 consists of the English text of the European standard EN 1088:1995+A2:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 18.08.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 09.07.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English Version

**Safety of machinery - Interlocking devices associated with
guards - Principles for design and selection**

Sécurité des machines - Dispositifs de verrouillage
associés à des protecteurs - Principes de conception et de
choix

Sicherheit von Maschinen - Verriegelungseinrichtungen in
Verbindung mit trennenden Schutzeinrichtungen - Leitsätze
für Gestaltung und Auswahl

This European Standard was approved by CEN on 13 November 1995 and includes Amendment 1 approved by CEN on 8 March 2007 and Amendment 2 approved by CEN on 6 June 2008.

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Foreword

This document (EN 1088:1995+A2:2008) has been prepared by Technical Committee CEN/TC 114 "Safety of machinery", the secretariat of which is held by DIN.

The drafting was carried out by a working group (WG 10) of CEN/TC 114.

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of an identical text or by endorsement, at the latest by January 2009, and conflicting national standards shall be withdrawn at the latest by January 2009.

This document includes Amendment 1, approved by CEN on 2007-03-08 and Amendment 2, approved by CEN on 2008-06-06.

This document supersedes EN 1088:1995.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1** and **A2** **A2**.

A1 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(s).

For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A1**

This standard is a type B2 standard in accordance with EN 414.

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, 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.

Introduction

This standard has been prepared to be a harmonised standard to provide one means of conforming with the essential safety requirements of the Machinery Directive and associated EFTA Regulations.

Its primary purpose is to give guidance to machinery designers and writers of type C standards on how to design or to select interlocking devices associated with guards with a view to complying with the relevant essential safety requirements of the EC Machinery Directive (see Foreword). It may also be used as guidance in controlling the risk where there is no type C standard for a particular machine.

Relevant sections of this standard, used alone or in conjunction with provisions from other standards, can be used as a basis for verification procedures for the suitability of a device for interlocking duties.

A statement by a manufacturer that an interlocking device complies with EN 1088, without reference to specific clauses, has no meaning.

The annexes A, B..., P are informative. Annexes A to N contain only examples complying with the principles set out in this standard, and the application of which has been validated by experience. Other solutions may be adopted, provided that they comply with the same principles. Annex P is entitled "Bibliography".

1 Scope

This standard specifies principles for the design and selection - independent of the nature of the energy source – of interlocking devices associated with guards (as defined in 3.23.1 "interlocking device [interlock]", 3.22.4 "interlocking guard" and 3.22.5 "interlocking guard with guard locking" of EN 292-1:1991).

It also provides requirements specifically intended for electrical interlocking devices (see clause 6).

This standard covers the parts of guards which actuate interlocking devices. Requirements for guards are given in prEN 953. The processing of the signal from the interlocking device to stop and immobilize the machine is dealt with in prEN 954-1.

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.

EN 292-1:1991, *Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology, methodology*

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

EN 294:1992, *Safety of machinery – Safety distances to prevent danger zones being reached by the upper limbs*

prEN 953, *Safety of machinery – General requirements for the design and construction of guards (fixed, movable)*

prEN 954-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*

prEN 999, *Safety of machinery – The positioning of protective equipment in respect of approach speed of parts of the human body*

prEN 1037, *Safety of machinery – Prevention of unexpected start-up*

prEN 1050, *Safety of machinery – Principles for risk assessment*

EN 60204-1:1992, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

EN 60947-5-1:1991, *Low-voltage switchgear and controlgear - Part 5: Control circuit devices and switching elements – Section 1: Electromechanical control circuit devices (IEC 947-5-1:1990)*

3 Definitions

For the purposes of this standard the following definitions apply:

3.1
interlocking device [interlock]
mechanical, electrical or other type of device, the purpose of which is to prevent the operation of machine elements under specified conditions (generally as long as a guard is not closed).

[3.23.1 of EN 292-1:1991]

3.2
Interlocking guard
guard associated with an interlocking device, so that:

- the hazardous machine functions "covered" by the guard cannot operate until the guard is closed;
- if the guard is opened while the hazardous machine functions are operating, a stop instruction is given;
- when the guard is closed, the hazardous machine functions "covered" by the guard can operate, but the closure of the guard does not by itself initiate their operation.

[3.22.4 of EN 292-1:1991]

NOTE In English "stop signal" and "stop command" are synonyms for "stop instruction". In German "Stop-Signal" and "Stop-Befehl" are synonyms for "Halt-Befehl". In French "ordre d'arrêt" is an all-encompassing term

3.3
interlocking guard with guard locking
guard associated with an interlocking device and a guard locking device so that:

- the hazardous machine functions "covered" by the guard cannot operate until the guard is closed and locked;
- the guard remains closed and locked until the risk of injury from the hazardous machine functions has passed;
- when the guard is closed and locked, the hazardous machine functions "covered" by the guard can operate, but the closure and locking of the guard do not by themselves initiate their operation.

[3.22.5 of EN 292-1:1991]