BRITISH STANDARD

BS EN ISO
13850:2008

Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)

ICS 13.110

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN ISO 13850:2008. It is identical to ISO 13850:2006. It supersedes BS EN ISO 13850:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/3, Safeguarding of machinery.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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EUROPEAN STANDARD

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English Version

Safety of machinery - Emergency stop - Principles for design (ISO 13850:2006)

Sécurité des machines - Arrêt d'urgence - Principes de conception (ISO 13850:2006)

Sicherheit von Maschinen - Not-Halt - Gestaltungsleitsätze (ISO 13850:2006)

This European Standard was approved by CEN on 25 May 2008.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

The text of ISO 13850:2006 has been prepared by Technical Committee ISO/TC 199 “Safety of machinery” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 13850:2008 by Technical Committee CEN/TC 114 “Safety of machinery” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by December 2008, and conflicting national standards shall be withdrawn at the latest by December 2008.

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 supersedes EN ISO 13850:2006.

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 Annexes ZA and ZB, which are integral part of this document.

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 the United Kingdom.

Endorsement notice

The text of ISO 13850:2006 has been approved by CEN as a EN ISO 13850:2008 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 98/37/EC, Machinery, amended by Directive 98/79/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirement(s) 1.2.4 of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

Annex ZB
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive Machinery 2006/42/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements 1.2.4 of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13850 was prepared by Technical Committee ISO/TC 199, *Safety of machinery*, and Technical Committee IEC/TC 44, *Safety of machinery — Electrotechnical aspects*.

This second edition cancels and replaces the first edition (ISO 13850:1996), which has been technically revised. Notably, it incorporates the following significant changes:

a) resetting of the emergency stop command is required to be manual (see 4.1.6);

b) emergency stop devices are required to use mechanical latching (see 4.4.3).

Introduction

The structure of safety standards in the field of machinery is as follows.

a) Type-A standards (basis standards) give basic concepts, principles for design, and general aspects that can be applied to machinery.

b) Type-B standards (generic safety standards) deal with one or more safety aspect(s) or one or more type(s) of safeguard that can be used across a wide range of machinery:

   — type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

   — type-B2 standards on safeguards (e.g. two-hands controls, interlocking devices, pressure sensitive devices, guards).

c) Type-C standards (machinery safety standards) deal with detailed safety requirements for a particular machine or group of machines.

This International Standard is a type-B2 standard as stated in ISO 12100-1.

When provisions of a type-C standard are different from those which are stated in type-A or type-B standards, the provisions of the 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 the type-C standard.

INTERNATIONAL STANDARD **ISO 13850:2006(E)**

Safety of machinery — Emergency stop — Principles for design

1 Scope

This International Standard specifies functional requirements and design principles for the emergency stop function on machinery, independent of the type of energy used to control the function.

It is applicable to all machinery except for:

— machines in which the provision of emergency stop would not lessen the risk;

— hand-held portable machines and hand-guided machines.

It does not deal with functions such as reversal or limitation of motion, deflection, shielding, braking or disconnecting, which can be part of the emergency stop function.

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.

IEC 60204-1:2005 *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60947-5-5:2005, *Low-voltage switchgear and controlgear — Part 5-5: Control circuit devices and switching elements — Electrical emergency stop device with mechanical latching function*

IEC 60417-DB:2002, *Graphical symbols for use on equipment* (on-line database)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
emergency stop
emergency stop function
function that is intended to

— avert arising, or reduce existing, hazards to persons, damage to machinery or to work in progress,

— be initiated by a single human action

NOTE 1 Hazards, for the purposes of this International Standard, are those which can arise from

— functional irregularities (e.g. machinery malfunction, unacceptable properties of the material processed, human error),

— normal operation.

NOTE 2 Adapted from ISO 12100-1:2003, definition 3.37.