

MASINATE OHUTUS. HÄDASEISKAMISFUNKTSIOON.  
KAVANDAMISE PÕHIMÕTTED

Safety of machinery - Emergency stop function -  
Principles for design (ISO 13850:2015)

## EESTI STANDARDI EESSÕNA

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EUROPEAN STANDARD

**EN ISO 13850**

NORME EUROPÉENNE

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## Safety of machinery - Emergency stop function - Principles for design (ISO 13850:2015)

Sécurité des machines - Fonction d'arrêt d'urgence -  
Principes de conception (ISO 13850:2015)

Sicherheit von Maschinen - Not-Halt -  
Gestaltungsleitsätze (ISO 13850:2015)

This European Standard was approved by CEN on 5 September 2015.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## European foreword

This document (EN ISO 13850:2015) has been prepared by Technical Committee ISO/TC 199 "Safety of machinery" in collaboration with 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of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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 13850:2008.

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, see informative Annex ZA, which is an integral part of this document.

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### Endorsement notice

The text of ISO 13850:2015 has been approved by CEN as EN ISO 13850:2015 without any modification.

# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Safety requirements</b> .....	<b>3</b>
4.1 General requirements.....	3
4.1.1 Emergency stop function.....	3
4.1.2 Span of control of emergency stop device(s).....	4
4.1.3 Stop categories.....	5
4.1.4 Disengagement (e.g. unlatching) of the emergency stop device.....	6
4.1.5 Emergency stop equipment.....	6
4.2 Operating conditions, environmental influences.....	6
4.3 Emergency stop device.....	6
4.4 Use of wires or ropes as actuators.....	8
4.5 Prevention of unintended actuation of an emergency stop device.....	9
4.6 Portable operator control stations.....	9
4.6.1 Emergency stop functions on portable operator control stations.....	9
4.6.2 Emergency stop reset for cableless operator control stations.....	10
<b>Bibliography</b> .....	<b>11</b>

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 199, *Safety of machinery*.

This third edition cancels and replaces the second edition (ISO 13850:2006), which has been technically revised.

## Introduction

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

- a) Type-A standards (basic safety 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.

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.

# Safety of machinery — Emergency stop function — 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.

It does not deal with functions such as reversal or limitation of motion, deflection of emissions (e.g. radiation, fluids), shielding, braking or disconnecting, which can be part of the emergency stop function.

The requirements for this International Standard apply to all machines, with exception to:

- machines where an emergency stop would not reduce the risk;
- hand-held or hand-operated machines.

NOTE The requirements for the realization of the emergency stop function based on electrical/electronic technology are described in IEC 60204-1.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4413, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

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 62061, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010 and the following apply.

### 3.1

**emergency stop (E-stop)**

**emergency stop function**

function which is intended to

- avert arising or reduce existing hazards to persons, damage to machinery or to work in progress, and
- be initiated by a single human action