ICS 13.110 SLOVENSKÁ TECHNICKÁ NORMA November 2018

STN	**Bezpečnosť strojových zariadení Aplikácia ochranných zariadení na detekciu prítomnosti osôb**	**STN EN IEC 62046** 33 2206

Safety of machinery - Application of protective equipment to detect the presence of persons

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/18

Obsahuje: EN IEC 62046:2018, IEC 62046:2018

Oznámením tejto normy sa od 02.05.2021 ruší
STN P CLC/TS 62046 (33 2206) z februára 2009

127380

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62046

July 2018

ICS 13.110

Supersedes CLC/TS 62046:2008

English Version

Safety of machinery - Application of protective equipment to detect the presence of persons (IEC 62046:2018)

Sécurité des machines - Application des équipements de protection à la détection de la présence de personnes (IEC 62046:2018)

Sicherheit von Maschinen - Anwendung von Schutzausrüstungen zur Anwesenheitserkennung von Personen (IEC 62046:2018)

This European Standard was approved by CENELEC on 2018-05-02. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 62046:2018

European foreword

The text of document 44/803/FDIS, future edition 1 of IEC 62046, prepared by IEC/TC 44 "Safety of machinery - Electrotechnical aspects" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62046:2018.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2019-02-02
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-05-02

This document supersedes CLC/TS 62046:2008.

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

Endorsement notice

The text of the International Standard IEC 62046:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60947-4-1	NOTE	Harmonized as EN 60947-4-1.
IEC 61496-1	NOTE	Harmonized as EN 61496-1.
IEC 61496-2	NOTE	Harmonized as EN 61496-2.
IEC 61496-3	NOTE	Harmonized as EN 61496-3.
ISO 13854	NOTE	Harmonized as EN ISO 13854.
ISO 13856 Series	NOTE	Harmonized as EN ISO 13856 Series.
ISO 13856-1:2013	NOTE	Harmonized as EN ISO 13856-1:2013 (not modified).
ISO 13856-2:2013	NOTE	Harmonized as EN ISO 13856-2:2013 (not modified).
ISO 13856-3:2013	NOTE	Harmonized as EN ISO 13856-3:2013 (not modified).
ISO 13857	NOTE	Harmonized as EN ISO 13857.
ISO 14118:2017	NOTE	Harmonized as EN ISO 14118:2018 (not modified).
ISO 14119:2013	NOTE	Harmonized as EN SO 14119:2013 (not modified).
ISO 14120:2015	NOTE	Harmonized as EN ISO 14120:2015 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62061	-	Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems	EN 62061	-
ISO 12100	2010	Safety of machinery - General principles for design - Risk assessment and risk reduction	EN ISO 12100	2010 [1]
ISO 13849	Series	Safety of machinery - Safety-related parts of control systems	EN ISO 13849	Series
ISO 13855	2010	Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body	EN ISO 13855	2010

[1] EN ISO 12100:2010 constitutes a consolidation without technical changes of EN ISO 12100-1:2003, EN ISO 12100-2:2003 and related amendments and EN ISO 14121-1:2007. Documentation (e.g. risk assessment, type-C standards) based on these replaced documents need not be updated or revised.

IEC 62046

Edition 1.0 2018-03

INTERNATIONAL STANDARD

colour inside

Safety of machinery – Application of protective equipment to detect the presence of persons

IEC 62046:2018-03(en)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

IEC 62046

Edition 1.0 2018-03

INTERNATIONAL STANDARD

Safety of machinery – Application of protective equipment to detect the presence of persons

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 13.110 ISBN 978-2-8322-5519-3

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

SAFETY OF MACHINERY – APPLICATION OF PROTECTIVE EQUIPMENT TO DETECT THE PRESENCE OF PERSONS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62046 has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects.

This first edition cancels and replaces IEC TS 62046, published in 2008. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC TS 62046:2008:

a) additional annexes relating to muting and vision systems,
b) muting requirements have been updated,
c) blanking requirements have been updated,
d) addition of IEC 61496 series Types and capping the Safety Integrity level according to IEC 62061 and performance levels according to ISO 13849-1,
e) alignment to changes in IEC 61496 series.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
44/803/FDIS	44/812/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This International Standard provides requirements and information on the application of protective equipment, which employs (a) sensing device(s) to detect person(s), in order to reduce or minimize a risk from hazardous parts of machinery, without providing a physical barrier.

The objective of this document is to assist standards writing committees responsible for developing machine standards ("C" Standards), machine designers, manufacturers and refurbishers, machine safety certification organizations, workplace authorities and others on the proper application of protective equipment to machinery.

Figure 1 and Figure 2 show the general context and the intended use of this standard.

Clauses 1 to 5, 7 and 8 of this document apply to all protective equipment included in the scope, Clause 6 contains guidance for the application of specific kinds of protective equipment.

The principles of this document can be useful in the application of devices using other detection technologies but this document does not give specific requirements for devices other than those listed above.

This document considers devices standardised in the IEC 61496 series and the ISO 13856 series. Unless a product-specific safety-related standard for devices using other sensing technologies is published, their suitability as the sole means of protection from machine hazards is unknown. Great care should be taken in the selection and use of devices for which there is no product-specific safety-related standard because their behaviour, particularly under fault conditions, is not known to be sufficiently predictable.

An SILCL (SIL claim limit, see IEC 62061) or PL (Performance Level, see ISO 13849-1) or SIL (Safety Integrity Level, see IEC 61508) is not sufficient as an indication of a device's suitability for use as a safeguard. Suitability depends on appropriate sensing means, environmental conditions especially those that can affect the detection capability, behaviour under fault conditions, etc

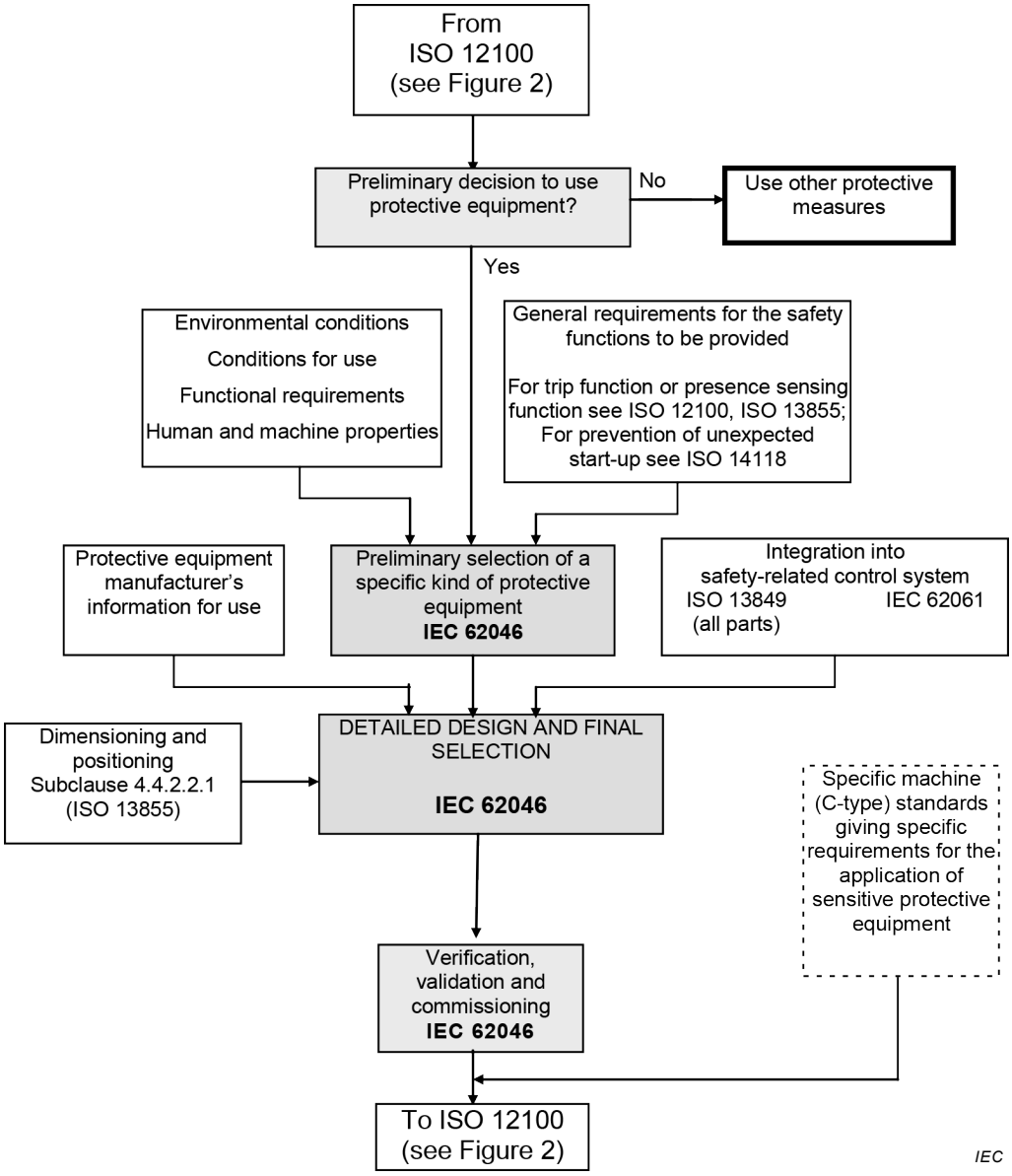

Figure 1 – Relationship of this International Standard to other standards

(see also Figure 2)

SAFETY OF MACHINERY – APPLICATION OF PROTECTIVE EQUIPMENT TO DETECT THE PRESENCE OF PERSONS

1 Scope

This International Standard specifies requirements for the selection, positioning, configuration and commissioning of protective equipment to detect the momentary or continued presence of persons in order to protect those persons from dangerous part(s) of machinery in industrial applications. This standard covers the application of electro-sensitive protective equipment (ESPE) specified in IEC 61496 (all parts) and pressure sensitive mats and floors specified in ISO 13856-1.

It takes into account the characteristics of the machinery, the protective equipment, the environment and human interaction by persons of 14 years and older.

This document includes informative annexes to provide guidance on the application of protective equipment to detect the presence of persons. These annexes contain examples to illustrate the principles of this standard. These examples are not intended to be the only solutions to a given application and are not intended to restrict innovation or advancement of technology. The examples are provided only as representative solutions to illustrate some of the concepts of integration of protective equipment, and have been simplified for clarity, so they may be incomplete.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62061, *Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems*

ISO 12100:2010[1], *Safety of machinery – General principles for design – Risk assessment and risk reduction*

ISO 13849 (all parts), *Safety of machinery – Safety-related parts of control systems*

ISO 13855:2010, *Safety of machinery – Positioning of safeguards with respect to the approach speeds of parts of the human body*