MASINATE OHUTUS. LASERTÖÖTLUSSEADMED. OSA 1: LASERI OHUTUSNÕUDED

Safety of machinery - Laser processing machines - Part 1: Laser safety requirements (ISO 11553-1:2020)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 11553-1:2020 sisaldab Euroopa standardi EN ISO 11553-1:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11553-1:2020 consists of the English text of the European standard EN ISO 11553-1:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 15.04.2020.	Date of Availability of the European standard is 15.04.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.110, 31.260

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11553-1

April 2020

ICS 13.110; 31.260

Supersedes EN ISO 11553-1:2008

English Version

Safety of machinery - Laser processing machines - Part 1: Laser safety requirements (ISO 11553-1:2020)

Sécurité des machines - Machines à laser - Partie 1: Exigences de sécurité laser (ISO 11553-1:2020)

Sicherheit von Maschinen - Laserbearbeitungsmaschinen - Teil 1: Anforderungen an die Sicherheit von Lasern (ISO 11553-1:2020)

This European Standard was approved by CEN on 13 January 2020.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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

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

Ref. No. EN ISO 11553-1:2020 E

European foreword

This document (EN ISO 11553-1:2020) has been prepared by Technical Committee ISO/TC 172 "Optics and photonics" in collaboration with Technical Committee CEN/TC 123 “Lasers and photonics” 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 October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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

This document supersedes EN ISO 11553-1:2008.

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 the relationship with EU Directive(s) see informative Annex ZA, which is an 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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 11553-1:2020 has been approved by CEN as EN ISO 11553-1:2020 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/396 (Machinery) "Mandate to CEN and CENELEC for standardisation in the field of machinery" to provide one voluntary means of conforming to essential requirement 1.5.12 of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Directive 2006/42/EC

Essential Requirements of Directive 2006/42/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.5.12	Clause 5, 6, 7 and 8.	
1.7.4.2, m,		Related to the aspect of radiation and emission.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Contents

Page

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 9, *Laser and electro-optical systems*, in collaboration with IEC/TC 76, *Optical radiation safety and laser equipment*.

This second edition cancels and replaces the first edition (ISO 11553-1:2005), which has been technically revised with the following main changes:

— the terms "beam delivery systems", "beam path components", "beam shaping components", "beam switching components" and "fibre optic cable" and "fibre connector" were added;

— the document was restructured;

— the Title was adapted;

— other hazards than laser radiation hazards are not considered in this document but are described in Annex A;

— operating modes (automatic mode, setting mode, manual intervention mode, service mode) and the operating mode selector switch were added;

— Clause 5 is separated in requirements regarding different locations and the different modes of operation;

— in Clause 6 the verification procedures were described in more detail;

— Annex B was deleted.

A list of all the parts of ISO 11553 can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The Machinery Safety Directive issued by the European Parliament and the Council of the EC outlines essential and mandatory requirements that must be met in order to ensure that machinery is safe. In response, CEN/CENELEC initiated a programme to produce safety standards for machines and their applications. This document is one in that series.

It has been prepared as a harmonized standard to provide a means of conforming to the essential safety requirements of the Machinery Directive and associated EFTA Regulations.

This document is a type B standard as stated in ISO 12100. The provisions of this document may be supplemented or modified by a type C standard.

For machines which are covered by the scope of a type C standard and which have been designed and built according to the provision of that standard, the provisions of that type C standard take precedence over the provisions of this type B standard.

The purpose of this document is to prevent injuries to persons by

— listing potential laser radiation hazards generated by machines containing lasers,

— specifying safety measures and verifications necessary for reducing the risk caused by specific hazardous conditions,

— providing references to pertinent standards, and

— specifying the information which is to be supplied to the users so that they can establish proper procedures and precautions.