

INTERNATIONAL STANDARD

ISO 11553-2

First edition
2007-03-01

Corrected version
2008-03-01

Safety of machinery — Laser processing machines —

Part 2: Safety requirements for hand-held laser processing devices

Sécurité des machines — Machines à laser —

*Partie 2: Exigences de sécurité pour dispositifs de traitement laser
portatifs*

Reference number
ISO 11553-2:2007(E)



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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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 11553-2 was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 9, *Electro-optical systems*.

This first edition, together with ISO 11553-1, cancels and replaces ISO 11553:1996, which has been technically revised.

ISO 11553 consists of the following parts, under the general title *Safety of machinery — Laser processing machines*:

- *Part 1: General safety requirements*
- *Part 2: Safety requirements for hand-held laser processing devices*

This corrected version of ISO 11553-2:2007 now carries the logo of the International Electrotechnical Commission (IEC) as well as that of ISO.

Introduction

This document is a type C standard as stated in ISO 12100-1:2003.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document. When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this 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 this type C standard.

It is applicable to machines using laser radiation to process materials. The purpose of this part of ISO 11553 is to prevent injuries to persons:

- by listing potential hazards generated by machines containing lasers;
- by specifying safety measures and verifications necessary for reducing the risk caused by specific hazardous conditions;
- by providing references to pertinent standards;
- by specifying the information which is to be supplied to the users so that they can establish proper procedures and precautions.

Safety of machinery — Laser processing machines —

Part 2: Safety requirements for hand-held laser processing devices

1 Scope

This part of ISO 11553 specifies the requirements for laser processing devices, as defined in ISO 11553-1, which are hand-held or hand-operated.

The purpose of this part of ISO 11553 is to draw attention to the particular hazards related to the use of hand-held laser and hand-operated laser processing devices and to prevent personal injury. This includes both the areas of hazard analysis and risk assessment as well as protective measures.

Requirements concerning noise as a hazard are not included in this part of ISO 11553. These requirements are to be included in a subsequent amendment.

This part of ISO 11553 does not apply to laser products or equipment manufactured solely or expressly for applications which are excluded from the scope of ISO 11553-1.

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.

ISO 3864-1:2002, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*

ISO 3864-2:2004, *Graphical symbols — Safety colours and safety signs — Part 2: Design principles for product safety labels*

ISO 3864-3:2006, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols used in safety signs*

ISO 11145:2006, *Optics and photonics — Lasers and laser-related equipment — Vocabulary and symbols*

ISO 11252:2004, *Lasers and laser related equipment — Laser device — Minimum requirements for documentation*

ISO 11553-1:2005, *Safety of machinery — Laser processing machines — Part 1: General safety requirements*

ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*

ISO 13849-1:1999, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13850:1996, *Safety of machinery — Emergency stop — Principles for design*

ISO 14118:2000, *Safety of machinery — Prevention of unexpected start-up*

ISO 14119:1998, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

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

IEC 60825-1 ed. 1.2:2001, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide*

IEC/TR 60825-14:2004; *Safety of laser products — Part 14: A user's guide*

IEC 60825-4-am1:2002, *Safety of laser products — Part 4: Laser guards*