

TRÜKITEHNOLOOGIA

Ohutusnõuded trükipressi süsteemide jaoks (ISO 12648:2003)

Graphic technology

Safety requirements for printing press systems
(ISO 12648:2003)

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

Käesolev Eesti standard EVS-ISO 12648:2007 "Trükitehnoloogia. Ohutusnõuded trükipressi süsteemide jaoks" sisaldab rahvusvahelise standardi ISO 12648:2003 "Graphic technology. Safety requirements for printing press systems" identset ingliskeelset teksti. Standardi avaldamise korraldas Eesti Standardikeskus. Standard EVS-ISO 12648:2007 on kinnitatud Eesti Standardikeskuse 05.06.2007 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teataja 2007. aasta juulikuu numbris. Standard on kättesaadav Eesti Standardikeskusest.	This Estonian Standard EVS-ISO 12648:2007 consists of the identical English text of the International Standard ISO 12648:2003 "Graphic technology. Safety requirements for printing press systems". Estonian standard is published by the Estonian Centre for Standardisation. This standard is ratified with the order of Estonian Centre for Standardisation dated 05.06.2007 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. The standard is available from Estonian Centre for Standardisation.
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Käsitlusala

Käesolev rahvusvaheline standard kehtib trükipressi süsteemide kohta, kaasa arvatud abiseadmed ja järeltöötlusmasinad, milles kõik süsteemis olevate seadmete masinaktivaatoreid (näiteks ajameid) juhitakse sama juhtimissüsteemiga.

See on rakendatav vaid sellistele süsteemidele, milles trükipress on süsteemi osa.

Juhtudel, kui köite-/järeltöötlussüsteem ei ole ühendatud trükipressiga, rakendatakse standardit ISO 12649.

See rahvusvaheline standard määrab ohutusnõuded jaotises 2 nimestikku kantud masinaliikide projekteerimiseks ja valmistamiseks. See kirjeldab tuvastatud ohte, mis on iseloomulikud trükipressi süsteemidele järgmistes valdkondades:

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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 12648 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

This second edition cancels and replaces the first edition (ISO 12648:2003), the following subclauses of which have been technically revised.

- 5.1: A requirement has been added to enable needed observation and adjustment with guards closed.
- 5.2.2.1: The use of risk assessment has been added to requirements, as appropriate.
- 5.5.6.3: A requirement to protect against malfunction of the interlock circuit as a result of short circuits has been added.
- 5.9.2.11: The exception to the requirements for protection of hazard zones on the unwinding unit of automatic reel-loading systems has been removed.
- 5.9.7 – 5.9.9: Requirements relating to guarding of the gripper area have been added.
- 6.5.2.4: For access platforms, a maximum handle diameter has been added.
- 9.2: A requirement for the use of symbology defined in ISO 15847 has been added.
- 9.2.3: A requirement for the colour of manual control devices in accordance with IEC 60204-1 has been added.
- 9.2.4.1.2: The location of emergency control devices has been clarified.
- 13.2.2: The timing of the audible alarm during the warning period has been changed.
- 13.2.6: Requirements for optional personnel warning lights for auxiliary equipment having armed status have been added.
- 15.2: Additional requirements for the contents of the instruction handbook have been defined.

Introduction

During the development of this International Standard, existing relevant standards of other countries were taken into consideration. An effort has been made to harmonize the requirements of all countries, recognizing that national standards or laws may dictate national requirements. In cases where it was known that there is a national requirement that differs from this International Standard, that has been noted.

This International Standard has taken into consideration material contained in ANSI B65.1-1995 [55], EN 1010-1 [11] and EN 1010-2 [12].

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of one or more patents concerning the use of ESPDs in the delivery area. The patents identified are:

- German Patent DE 103 10 236 B3
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Graphic technology — Safety requirements for printing press systems

1 Scope

This International Standard provides safety requirements for the design and construction of machines used in printing press systems, including auxiliary equipment and finishing machines, in which all the machine actuators (e.g. drives) of the equipment in the system are controlled by the same control system.

It is applicable only to systems in which a printing press is part of the system. In cases where a binding/finishing system is not integrated with a printing press, ISO 12649^[32] will apply.

It addresses recognized hazards specific to printing press systems in the following areas:

- mechanical;
- electrical;
- slipping, tripping, falling;
- ergonomics;
- noise;
- radiation;
- fire and explosion;
- thermal;
- emissions.

Equipment covered by this International Standard may be used in a stand-alone configuration, or in combination with other machines affected by an integrated control system. These may include, but are not limited to, the combinations of the machines noted in Clause 4.

This International Standard applies to machines manufactured one year or more after the date of publication of this International Standard.

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 8031, *Rubber and plastics hoses and hose assemblies — Determination of electrical resistance*

ISO 11553:1996, *Safety of machinery — Laser processing machines — Safety requirements*

ISO/TR 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning*

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, *Safety of machinery — Emergency stop — Principles for design*

ISO 13851:2002, *Safety of machinery — Two-hand control devices — Functional aspects and design principles*

ISO 13852:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

ISO 13854, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

ISO 13855, *Safety of machinery — Positioning of protective equipment with respect to the approach speeds of parts of the human body*

ISO 13856-1, *Safety of machinery — Pressure-sensitive protective devices — Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors*

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

ISO 14120, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

ISO 14122-1, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of a fixed means of access between two levels*

ISO 14122-2, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways*

ISO 14122-3, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails*

ISO 15847:—¹⁾, *Graphic technology — Graphical symbols for printing press systems and finishing systems, including related auxiliary equipment*

IEC 60079-1, *Electrical apparatus for explosive gas atmospheres — Part 1: Flameproof enclosures “d”*

IEC 60079-2, *Electrical apparatus for explosive gas atmospheres — Part 2: Pressurized enclosures “p”*

IEC 60079-5, *Electrical apparatus for explosive gas atmospheres — Part 5: Powder filling “q”*

IEC 60079-6, *Electrical apparatus for explosive gas atmospheres — Part 6: Oil-immersion “o”*

IEC 60079-7, *Electrical apparatus for explosive gas atmospheres — Part 7: Increased safety “e”*

1) To be published.

- IEC 60079-11, *Electrical apparatus for explosive gas atmospheres — Part 11: Intrinsic safety “I”*
- IEC 60079-14, *Electrical apparatus for explosive gas atmospheres — Part 14: Electrical installations in hazardous areas (other than mines)*
- IEC 60079-18, *Electrical apparatus for explosive gas atmospheres — Part 18: Construction, test and marking of type of protection encapsulation ‘m’ electrical apparatus*
- IEC 60204-1:2000, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*
- IEC 60825-1, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide*
- IEC 60947-5-1, *Low voltage switchgear and controlgear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices*
- IEC 61010-1, *Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General requirements*
- IEC 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals*
- IEC 61310-2, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking*
- IEC 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*
- IEC 61496-2, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs)*
- EN 378-1, *Refrigerating systems and heat pumps. Safety and environmental requirements — Part 1: Basic requirements, definitions, classification and selection criteria*
- EN 563, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces*
- EN 1127-1, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*
- EN 1539, *Dryers and ovens, in which flammable substances are released — Safety requirements*
- EN 1760-2, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*
- EN 12198-1:2000, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 1: General principles*
- EN 13023, *Noise measurement methods for printing, paper converting, paper making machines and auxiliary equipment — Accuracy grades 2 and 3*
- NFPA 86, *Ovens and furnaces*. Available from Internet <<http://www.nfpa.org/>>