Third edition
2023-11

Graphic technology — Safety requirements for graphic technology equipment and systems —

Part 1: General requirements

Technologie graphique — Exigences de sécurité pour les systèmes et l'équipement de technologie graphique —

Partie 1: Exigences générales

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Foreword

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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 document 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).

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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 130, *Graphic technology,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 198, *Printing and paper machinery — Safety,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 12643-1:2009), which has been technically revised.

The main changes compared to the previous edition are as follows:

— in 5.3.2, the requirements for guards (fixed guards with hinges, inclusion of examples of fastening devices, e.g. rotary clamping closures, adaptation to ISO 13857:2019) have been revised;

— former 6.5.5 (interlocking with guard locking) has been deleted (related machine-specific requirements are provided in the subsequent parts of ISO 12643 series);

— in 5.3.6, the requirements for hold-to-run controls have been revised;

— in 5.3.8, the requirements for reel unwinding devices, rewinding devices and reel transport systems have been revised (monitoring of the chucking cones, adaptation of the requirements to smaller machinery, monitoring of the circumferential speed with regard to overwinding, area protection, protective devices at rewinding devices with manual or automatic reel change);

— in 5.3.10, the requirements for pile carrier movements at feeders and deliveries have been revised;

— in 5.4.2, the requirements for explosion and fire protection have been revised;

— in 5.4.8.2, the requirements for UV radiation to the cited EN 12198-1:2000 have been adapted: no distinction between UVA and UVB/UVC anymore, reference to effective UV radiation;

- a new subclause (5.4.10) about doctor blades has been added;
- in 5.7.2, information that touch sensitive control devices shall not be used for initiating safety functions has been clarified;
- in 5.7.2.3, colours for controls have been adapted;
- in 5.7.2.5.1.2, the comprehensive requirements for emergency stop devices have been replaced by reference to IEC 60204-1:2016/AMD 1:2021 and ISO 13850:2015 (references to safety functions of IEC 61800-5-2, e.g. STO);
- in 5.7.6, the requirements of ESPDs to IEC 61496-1:2020 and IEC 61496-2:2020 has been adapted; likewise, the heights of the light beams for a 3-beam solution have been adapted;
- in 5.8, the requirements to fixed and portable control station have been adapted;
- in 5.10, the requirements for control systems has been revised:
  - the term "irreversible injuries" has been introduced;
  - an overview table of the performance levels defined in the document has been inserted;
- in Clause 6, detailed listings of the validation methods for all safeguarding measures has been added;
- in 8.3.1, the requirements for instruction handbook with regard to noise emission values and hearing protection have been amended;
- Annex A has been revised and has been converted to a normative annex;
- the list of significant hazards has been moved to Annex B;
- the noise comparison values in Annex D has been added;
- a normative Annex F on occurrence of a hazardous explosive atmosphere has been added;
- an informative Annex G on the relationship between protection zones against explosion and equipment to be used has been added.

A list of all parts in the ISO 12643 series 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

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

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organisations, market surveillance, etc.)

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e. g. for maintenance (small, medium and large enterprises);

— consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope and in Clause 5 of this document.

When requirements of this type-C standard are different from those which are stated in type-A or B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

This document was developed to harmonize the requirements of the following U.S. and European safety standards:

— EN 1010-1:2004+A1:2010;

— EN 1010-2:2006+A1:2010;

— EN 1010-3:2002+A1:2009;

— EN 1010-4:2004+A1:2009;

— EN 1010-5:2005;

— ANSI B65-1:2011;

— ANSI B65-2:2011;

— ANSI B65-3:2011;

— ANSI B65-5:2011.

Requirements specific to prepress and press equipment and systems, binding and finishing equipment and systems, converting equipment and systems, corrugated board manufacturing equipment and systems and stand-alone platen presses that are not included in this document, are given in subsequent parts of ISO 12643 that contain additional requirements specific to that type of equipment.