

SLOVENSKI STANDARD

kSIST FprEN ISO 14123-1:2015

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Varnost strojev - Zmanjšanje zdravstvenega tveganja zaradi nevarnih snovi, ki jih oddajajo stroji - 1. del: Načela in specifikacije za proizvajalce strojev (ISO/FDIS 14123-1:2015)

Safety of machinery - Reduction of risks to health resulting from hazardous substances emitted by machinery - Part 1: Principles and specifications for machinery manufacturers (ISO/FDIS 14123-1:2015)

Sicherheit von Maschinen - Minderung von Gesundheitsrisiken, die auf Gefahrstoffemissionen von Maschinen zurückzuführen sind - Teil 1: Grundsätze und Festlegungen für Maschinenhersteller (ISO/FDIS 14123-1:2015)

Sécurité des machines - Réduction des risques pour la santé résultant de substances dangereuses émises par des machines - Partie 1: Principes et spécifications à l'intention des constructeurs de machines (ISO/FDIS 14123-1:2015)

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Varnost strojev

Safety of machinery

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Safety of machinery — Reduction of risks to health resulting from hazardous substances emitted by machinery —

Part 1: Principles and specifications for machinery manufacturers

*Sécurité des machines — Réduction des risques pour la santé
résultant de substances dangereuses émises par des machines —*

*Partie 1: Principes et spécifications à l'intention des constructeurs de
machines*

SI 14123-1:2016

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Please see the administrative notes on page iii



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ISO/CEN PARALLEL PROCESSING

This final draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement. The final draft was established on the basis of comments received during a parallel enquiry on the draft.

This final draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel two-month approval vote in ISO and formal vote in CEN.

Positive votes shall not be accompanied by comments.

Negative votes shall be accompanied by the relevant technical reasons.

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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.

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 199, *Safety of machinery*.

This second edition cancels and replaces the first edition (ISO 14123-1:1998), of which, by taking ISO 12100 into account, it constitutes a minor revision.

ISO 14123 consists of the following parts, under the general title *Safety of machinery — Reduction of risks to health resulting from hazardous substances emitted by machinery*:

- *Part 1: Principles and specifications for machinery manufacturers*
- *Part 2: Methodology leading to verification procedures*

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Introduction

The structure of safety standards in the field of machinery is as follows:

- a) **type-A standards** (basic safety standards) giving basic concepts, principles for design, and general aspects that can be applied to machinery;
- b) **type-B standards** (generic safety standards) dealing with one safety aspect or one type of safeguard that can be used across a wide range of machinery:
 - type-B1 standards on particular safety aspects (for example, safety distances, surface temperature, noise);
 - type-B2 standards on safeguards (for example, two-hand controls, interlocking devices, pressure-sensitive devices, guards);
- c) **type-C standards** (machine safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

This document is a type-B1 standard as stated in ISO 12100. Its primary purpose is to give guidance to the writers of type-C standards when machines are identified as emitting hazardous substances as a significant risk. This part of ISO 14123 can also be used as guidance in controlling the risk where there is no type-C standard for a particular machine.

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 organizations, 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 requirements of this document can be supplemented or modified by a type-C standard.

For machines that are covered by the scope of a type-C standard and that have been designed and built according to the requirements of that standard, the requirements of that type-C standard take precedence.

Safety of machinery — Reduction of risks to health resulting from hazardous substances emitted by machinery —

Part 1: Principles and specifications for machinery manufacturers

1 Scope

This part of ISO 14123 establishes principles for the control of risks to health resulting from hazardous substances emitted by machinery.

This part of ISO 14123 is not applicable to substances that are a hazard to health solely because of their explosive, flammable or radioactive properties or their behaviour at extremes of temperature or pressure.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100 and the following apply.

3.1

intended use

use of a machine in accordance with the information for use provided in the instructions

[SOURCE: ISO 12100:2010, 3.23]

3.2

hazardous substance

any chemical or biological agent that is hazardous to health

EXAMPLE Substances or preparations classified as very toxic, toxic, harmful, corrosive, irritant, sensitizing, carcinogenic, mutagenic, teratogenic, pathogenic or asphyxiant. For EU countries, see also Regulation (EC) No 1272/2008[3].

Note 1 to entry: For the definitions of “chemical agent” and “biological agent” see EN 1540.

4 Risk assessment

4.1 An identification of hazards and assessment of the foreseeable risks resulting from substances hazardous to health shall be made by the machinery manufacturer. This process shall cover, as far as possible, any potential hazard that can arise from exposure of persons to the machine at any phase of its life cycle.

NOTE Details of the methodology of risk assessment are given in ISO 12100.

4.2 The level of risk depends on the properties of the hazardous substances, the likelihood that personal exposure will occur and the degree of exposure. The health effects of hazardous substances can be

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- short-term or long-term, and
- reversible or irreversible.

4.3 Hazardous substances can occur in any physical state (gaseous, liquid, solid) and can affect the body by

- inhalation,
- ingestion,
- contact with the skin, eyes and mucous membranes, or
- penetration through the skin.

4.4 The hazardous substances can be generated from

- any part of a machine,
- substances present in the machine, or
- material arising directly or indirectly from articles and/or substances processed by the machine or used on the machine.

4.5 The phases of the machine life cycle can include the following (see also ISO 12100:2010, 5.4):

- transport, assembly and installation;
- commissioning;
- use;
- all modes of operation, including start-up and shut-down/stopping;
- failure
- setting or process/tool changeover;
- cleaning and housekeeping;
- adjustment;
- maintenance and repair;
- dismantling, disabling and, as far as safety is concerned, scrapping.

5 Types of emissions

5.1 Airborne emissions

5.1.1 Airborne emissions can represent significant sources of exposure to hazardous substances. Inhalation is usually the most significant of all the routes of entry (see 4.3). In addition, airborne emissions can enter the body by other routes, particularly when substances are deposited on a body surface or when they are ingested.

5.1.2 Airborne emissions can arise from various sources, including the following:

- machining, e.g. sawing, grinding, sanding, milling;
- evaporation and thermal convection, e.g. open tanks, crucibles, solvent baths;