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**Safety of machinery — Fire prevention  
and fire protection**

*Sécurité des machines — Prévention et protection contre l'incendie*



Reference number  
ISO 19353:2019(E)

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# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Fire hazards</b> .....	<b>3</b>
4.1 General.....	3
4.2 Combustible materials.....	4
4.3 Oxidizers.....	4
4.4 Ignition sources.....	4
<b>5 Strategy for fire risk assessment and risk reduction</b> .....	<b>5</b>
5.1 General.....	5
5.2 Determination of the limits of the machinery.....	7
5.3 Identification of fire hazards.....	7
5.4 Risk estimation.....	8
5.5 Risk evaluation.....	9
5.6 Risk reduction.....	10
5.6.1 General.....	10
5.6.2 Inherently safe design measures.....	10
5.6.3 Safeguarding.....	11
5.6.4 Complementary protective measures.....	11
<b>6 Procedure for the selection of complementary protective measures</b> .....	<b>12</b>
6.1 General.....	12
6.1.1 Use of the procedure.....	12
6.1.2 Determination of the residual risk level.....	13
6.1.3 Specification of requirements for the choice of fire detection and fire suppression system.....	13
6.1.4 Specification of safety and performance requirements.....	13
6.1.5 Selection of system parts and suitable fire-extinguishing agent.....	13
6.1.6 Decision on the need for further complementary protective measures.....	13
6.1.7 Validation.....	13
6.2 Selection of the fire prevention and protection system in relation to the expected risk level.....	13
6.2.1 General.....	13
6.2.2 Injury to persons.....	14
6.2.3 Safety considerations.....	14
6.2.4 Selection of system parts.....	14
6.2.5 Selection of fire-extinguishing agent.....	14
6.2.6 Validation.....	15
<b>7 Information for use</b> .....	<b>15</b>
<b>Annex A (informative) Examples of machines and their typical fire-related hazards</b> .....	<b>17</b>
<b>Annex B (informative) Example of a methodology for selecting and qualifying a fire     detection and fire suppression system</b> .....	<b>18</b>
<b>Annex C (informative) Example for the design of a fire suppression system integrated in     machinery</b> .....	<b>35</b>
<b>Annex D (informative) Examples of ignition sources</b> .....	<b>36</b>
<b>Annex E (informative) Example for the risk assessment and risk reduction of a machining     centre for the machining of metallic materials</b> .....	<b>38</b>
<b>Bibliography</b> .....	<b>49</b>

## 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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 199, *Safety of machinery*.

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](http://www.iso.org/members.html).

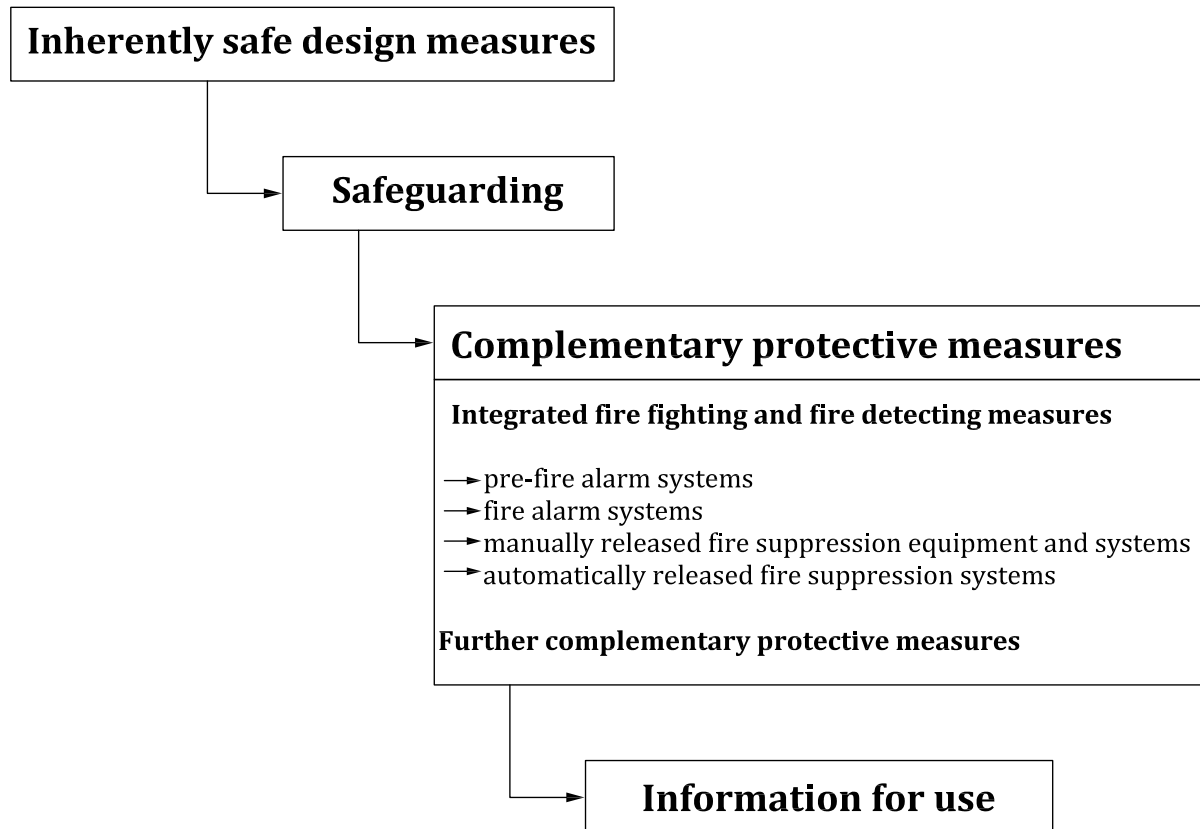
This third edition cancels and replaces the second edition (ISO 19353:2015), which has been technically revised. It also incorporates the Amendment ISO 19353:2015/DAM 1:2017. The main changes compared to the previous edition are as follows:

- old Annexes A and B have become [Annexes D](#) and [A](#), respectively;
- an example of methodology for selecting and qualifying a fire detection and fire suppression system has been added as new [Annex B](#);
- old Annex D has been improved editorially and it has become [Annex E](#);
- old Annex E on fire risk reduction measures has been deleted as well as references to it.

## Introduction

The safety of machinery against fire involves fire prevention and fire protection and fire-fighting. In general, these include technical, structural, organizational and fire suppression measures. Effective fire safety of machinery can require the implementation of a single measure or a combination of measures.

This document deals with the measures shown in [Figure 1](#).



**Figure 1 — Protective measures dealt with in ISO 19353**

This document is a type-B 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 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.

In addition, this document is intended for standardization bodies elaborating type-C standards.

The requirements of this document can 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 requirements of that standard, the requirements of that type-C standard take precedence.

# Safety of machinery — Fire prevention and fire protection

## 1 Scope

This document specifies methods for identifying fire hazards resulting from machinery and for performing a risk assessment.

It gives the basic concepts and methodology of protective measures for fire prevention and protection to be taken during the design and construction of machinery. The measures consider the intended use and reasonably foreseeable misuse of the machine.

It provides guidelines for consideration in reducing the risk of machinery fires to acceptable levels through machine design, risk assessment and operator instructions.

This document is not applicable to:

- mobile machinery;
- machinery designed to contain controlled combustion processes (e.g. internal combustion engines, furnaces), unless these processes can constitute the ignition source of a fire in other parts of the machinery or outside of this;
- machinery used in potentially explosive atmospheres and explosion prevention and protection; and
- fire detection and suppression systems that are integrated in building fire safety systems.

It is also not applicable to machinery or machinery components manufactured before the date of its publication.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

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

ISO 13943, *Fire safety — Vocabulary*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100, ISO 13943 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>