
**Safety of machinery — Permanent
means of access to machinery —**

**Part 1:
Choice of fixed means and general
requirements of access**

iTeh STANDARD PREVIEW
*Sécurité des machines — Moyens d'accès permanents aux machines —
(standards.iteh.ai)
Partie 1: Choix d'un moyen d'accès et des exigences générales d'accès*

ISO 14122-1:2016

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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 14122-1:2001), which has been technically revised. It also incorporates the Amendment ISO 14122-1:2001/Amendment 1:2010. See [Annex B](#).

ISO 14122 consists of the following parts, under the general title *Safety of machinery — Permanent means of access to machines*:

- *Part 1: Choice of fixed means and general requirements of access*
- *Part 2: Working platforms and walkways*
- *Part 3: Stairs, stepladders and guard-rails*
- *Part 4: Fixed ladders*

An additional part, dealing with mobile machinery, is under preparation.

Introduction

This International Standard is a type-B standard as stated in ISO 12100.

This International Standard 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 this International Standard 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 International Standard.

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

The requirements of this International Standard 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.

The purpose of this International Standard is to define the general requirements for safe access to machines. This part of ISO 14122 gives guidance about the correct choice of access means when the necessary access to the machine is not possible directly from the ground level or from a floor or platform.

[Annex A](#) is informative and contains “Examples of the possible changes in the machine or system to make a better access possible”.

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Safety of machinery — Permanent means of access to machinery —

Part 1: Choice of fixed means and general requirements of access

1 Scope

This part of ISO 14122 gives general requirements for access to stationary machines and guidance about the correct choice of means of access when necessary access to the stationary machine is not possible directly from the ground level or from a floor.

It is applicable to permanent means of access which are a part of a stationary machine, and also to non-powered adjustable parts (e.g. foldable, slidable) and movable parts of fixed means of access.

NOTE 1 “Fixed” means of access are those mounted in such a manner (for example, by screws, nuts, welding) that they can only be removed by the use of tools.

This part of ISO 14122 specifies minimum requirements that also apply when the same means of access is required as the part of the building or civil construction (e.g. working platforms, walkways, ladders) where the machine is installed, on condition that the main function of that part of the construction is to provide a means of access to the machine.

NOTE 2 Where no local regulation or standards exist, this part of ISO 14122 can be used for means of access which are outside the scope of the standard.

It is intended that this part of ISO 14122 be used with a relevant access-specific part of ISO 14122.

The ISO 14122 series as a whole is applicable to both stationary and mobile machinery where fixed means of access are necessary. It is not applicable to powered means of access such as lifts, escalators, or other devices specially designed to lift persons between two levels.

This part of ISO 14122 is not applicable to machinery manufactured before the date of its publication.

For the significant hazards covered by this part of ISO 14122, see [Clause 4](#).

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, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 14122-3:2016, *Safety of machinery — Permanent means of access to machines — Part 3: Stairs, stepladders and guard-rails*

ISO 14122-4:2016, *Safety of machinery — Permanent means of access to machine — Part 4: Fixed ladders*

3 Terms and definitions

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

**3.1
fixed ladder**
fixed means of access with an angle of pitch from more than 75° up to 90°, whose horizontal elements are rungs

Note 1 to entry: See [Figure 1](#).

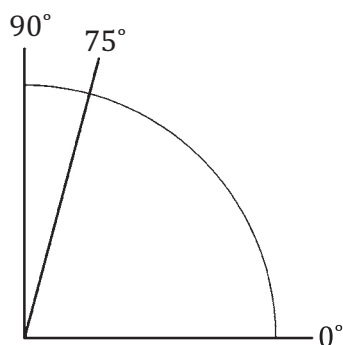


Figure 1 — $75^\circ < \text{angle of pitch} \leq 90^\circ$ for a fixed ladder

**3.2
stepladder**
fixed means of access with an angle of pitch from more than 45° up to 75°, whose horizontal elements are steps

Note 1 to entry: See [Figure 2](#).

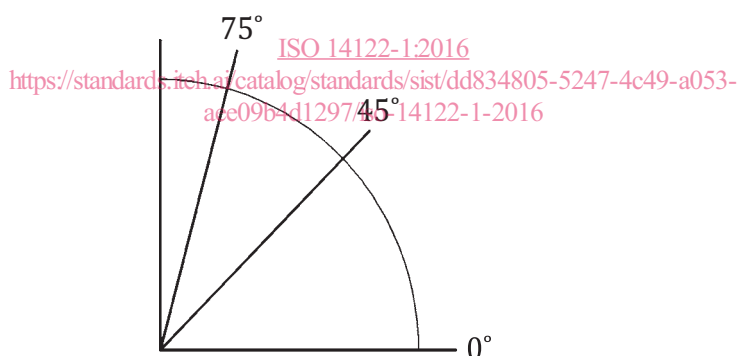


Figure 2 — $45^\circ < \text{angle of pitch} \leq 75^\circ$ for a stepladder

**3.3
stair**
fixed means of access with an angle of pitch from more than 20° up to 45°, whose horizontal elements are steps

Note 1 to entry: See [Figure 3](#).

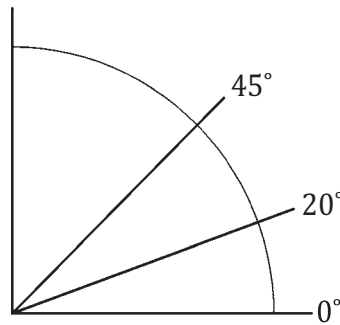


Figure 3 — $20^\circ < \text{angle of pitch} \leq 45^\circ$ for a stair

3.4 ramp

fixed means of access, comprising a continuous inclined plane having an angle of pitch from more than 0° up to 20°

Note 1 to entry: See [Figure 4](#).

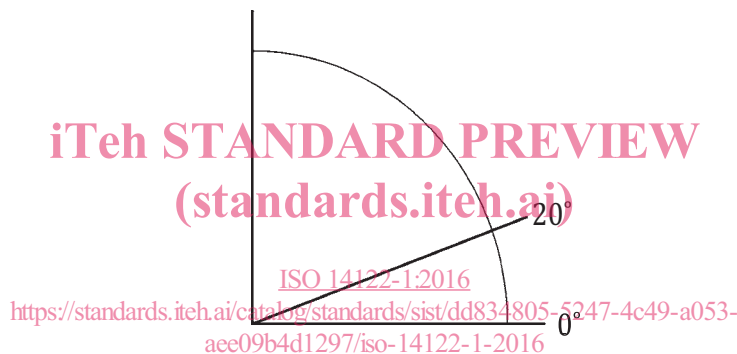


Figure 4 — $0^\circ < \text{angle of pitch} \leq 20^\circ$ for a ramp

4 Significant hazards

The most significant hazards to be considered when determining the type and location of the means of access are the following:

- a) falling;
- b) falling from height;
- c) slipping;
- d) tripping;
- e) excessive physical effort, e.g. from climbing a series of fixed ladders;
- f) falling of materials or objects when they may cause a risk to persons.

NOTE 1 Other hazards generated by machinery to which a person could be exposed during access using means of access according to this standard, e.g. caused by the functioning of machinery [moving parts of the machine, movement of the machine itself (mobile machines), radiation, extreme temperatures, noise, steam, hot liquids] or caused by its environment (harmful airborne substances), are not covered by this part of ISO 14122, but the designer/manufacturer of the machine needs to consider them, e.g. by preventing unauthorized access.

NOTE 2 ISO 12100 gives principles for risk assessment to identify and control all hazards. This part of ISO 14122 is aimed at the prevention of persons falling and of excessive physical effort.