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

Part 1:

**Choice of fixed means of access between  
two levels**

iTeh STANDARD PREVIEW

*Sécurité des machines — Moyens d'accès permanents aux machines —*

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*Partie 1: Choix d'un moyen d'accès fixe entre deux niveaux*

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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 3.

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 member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 14122 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14122-1 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 199, *Safety of machinery*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

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

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- ISO 14122-1:2001  
<https://standards.iteh.ai/catalog/standards/sist/05aeef428-79bd-4d4d-94a8-06f8902833e5/iso-14122-1-2001>
- Part 1: Choice of fixed means of access between two levels
  - Part 2: Working platforms and walkways
  - Part 3: Stairs, stepladders and guard-rails
  - Part 4: Fixed ladders

Annex A of this part of ISO 14122 is for information only.

For the purposes of this part of ISO 14122, the CEN annex regarding fulfilment of European Council Directives has been removed.

# Contents

Page

Foreword.....	v
Introduction .....	vi
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions.....	1
4 Significant hazards .....	3
5 Requirements for the selection of the fixed means of access.....	3
5.1 General.....	3
5.2 Preferred means of access .....	4
5.3 Selection of the means of access .....	4
5.3.1 Basic solutions .....	4
5.3.2 Conditions for the selection of stepladder or ladder .....	4
5.4 Choice among lift, ramp or stair.....	5
5.5 Selection between stepladder and ladder .....	6
6 Assembly instructions .....	7
Annex A (informative) Examples of the changes in the machine or system to make better access possible.....	8
Bibliography .....	9

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## Foreword

The text of EN ISO 14122-1:2001 has been prepared by Technical Committee CEN/TC 114 "Safety of machinery", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 199 "Safety of machinery".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## Introduction

EN ISO 14122 consists of the following parts, under the general title "Safety of machinery - Permanent means of access to machinery" :

Part 1 : Choice of a fixed means of access between two levels

Part 2 : Working platforms and walkways

Part 3 : Stairs, stepladders and guard-rails

Part 4 : Fixed ladders.

This part of EN ISO 14122 is a type B standard as stated in EN 1070.

This document is to be read in conjunction with clause 1.6.2 "Access to operating position and servicing points" and 1.5.15 "Risk of slipping, tripping or falling" of the essential safety requirements expressed in annex A of EN 292-2:1991/A1:1995. See also 6.2.4 "Provision for safe access to machinery" of EN 292-2:1991.

For the significant hazards covered by this part of EN ISO 14122, see clause 4.

The provisions of this document may be supplemented or modified by a type C standard.

NOTE 1 For machines which are covered by the scope of a type C standard and which have been designed and built according to the provisions of that standard, the provisions of that type C standard take precedence over the provisions of this type B standard. "

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NOTE 2 The use of materials other than metals (wood composite materials, so-called "advanced" materials, etc.) does not alter the application of this part of EN ISO 14122.

Annex A is for information only.

This part of EN ISO 14122 contains a Bibliography.

## 1 Scope

This part of EN ISO 14122 defines the general requirements for safe access to machines mentioned in EN 292-2. It gives advice 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.

This part of EN ISO 14122 applies to all machinery (stationary and mobile) where fixed means of access are necessary.

This part of EN ISO 14122 applies to means of access which are a part of a machine.

This part of EN ISO 14122 may also apply to means of access to that part of the building (e.g. working platforms, walkways, ladders) where the machine is installed, providing the main function of that part of the building is to provide a means of access to the machine.

NOTE This part of EN ISO 14122 may be used also for means of access which are outside the scope of this part of EN ISO 14122. In those cases the possible relevant national or other regulations should be taken into account.

This part of EN ISO 14122 applies also to access means specific to the machine which are not permanently fixed to the machine and which may be removed or moved to the side for some operations of the machine (e.g. changing tools in a large press).

This part of EN ISO 14122 does not apply to lifts, to moveable elevating platforms or other devices specially designed to lift persons between two levels

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## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292—1:1991 (ISO/TR 12100-1), *Safety of machinery — Basic concepts, general principles for design — Part 1 : Basic terminology, methodology*

EN 292-2/A1 (ISO/TR 12100-2), *Safety of machinery — Basic concepts, general principles for design — Part 2 : Technical principles and specifications*

EN 1050 (ISO 14121), *Safety of machinery — Principles for risk assessment*

EN 1070, *Safety of machinery — Terminology*

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

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

prEN ISO 14122-4:1996, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders*

## 3 Terms and definitions

For the purposes of this part of EN ISO 14122, the terms and definitions stated in EN 1070 "Safety of machinery - Terminology" and the following terms and definitions apply (see also Figure 5).

**3.1  
ladder**

fixed means of access with an angle of pitch from more than 75 ° to 90 °, whose horizontal elements are rungs (see Figure 1)

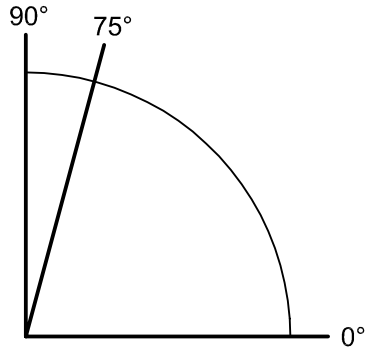


Figure 1 — 75° < angle of pitch ≤ 90°

**3.2  
stepladder**

fixed means of access with an angle of pitch from more than 45 ° up to 75 °, whose horizontal elements are steps (see Figure 2)

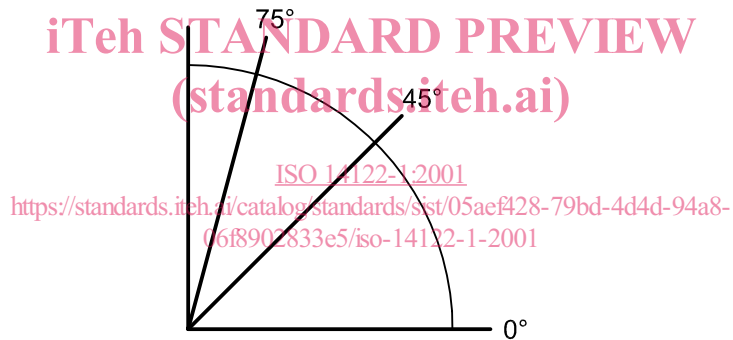


Figure 2 — 45° < slope angle ≤ 75°

**3.3  
stair**

fixed means of access with an angle of pitch from more than 20 ° up to 45 °, whose horizontal elements are steps (see Figure 3)

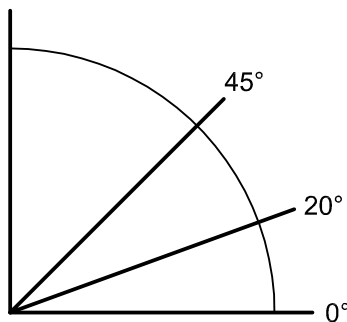


Figure 3 — 20° < angle of pitch ≤ 45°



**3.4****ramp**

fixed means of access, comprising a continuous inclined plane having an angle of pitch from more than 0° up to 20° (see Figure 4)

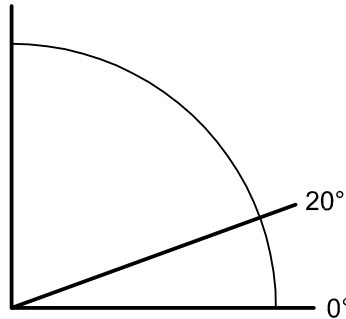


Figure 4 — 0° < angle of pitch ≤ 20°

**4 Significant hazards**

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

- a) Falling.
- b) Slipping.
- c) Tripping.
- d) caused by excessive physical effort, e.g. from climbing a series of ladders.
- e) from falling of materials or objects when they may cause a risk to persons.

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Other hazards **generated by the machinery**, e.g. **caused by the functioning of the machinery** (moving parts of the machine, movement of the machine itself (mobile machines), radiation, hot surface, noise, steam, hot liquids) or caused by its environment (harmful airborne substances) are not covered by this part of EN ISO 14122 but the designer of the machine should consider them, e.g. by preventing the access.

NOTE EN 1050 gives principles for risk assessment.

This part of EN ISO 14122 is primarily aimed at the prevention of persons falling and of excessive physical efforts.

**5 Requirements for the selection of the fixed means of access****5.1 General**

There shall be a safe and convenient means of access to all the zones and points of the machine where the need for access can be foreseen during the phases of the "life" of the machinery (see 3.11 of EN 292-1:1991).