



SWEDISH
STANDARDS
INSTITUTE

SVENSK STANDARD SS-EN ISO 14122-4:2005

Fastställd 2005-01-21

Utgåva 1

Maskinsäkerhet – Fasta konstruktioner för tillträde till maskiner – Del 4: Fasta stegar (ISO 14122-4:2004)

Safety of machinery – Permanent means of access to machinery – Part 4: Fixed ladders (ISO 14122-4:2004)

Denna standard är såld av SEK Svensk Elstandard
som även lämnar allmänna upplysningar
om svensk och utländsk standard.
Postadress: SEK, Box 1284, 164 29 Kista
Telefon: 08-444 14 00.
E-post: sek@elstandard.se. Internet: www.elstandard.se

ICS 13.110

Språk: engelska

Publicerad: mars 2005

Europastandarden EN ISO 14122-4:2004 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 14122-4:2004.

The European Standard EN ISO 14122-4:2004 has the status of a Swedish Standard. This document contains the official English version of EN ISO 14122-4:2004.

Upplysningar om **sakinnehållet** i standarden lämnas av SIS, Swedish Standards Institute, telefon 08 - 555 520 00.

Standarder kan beställas hos SIS Förlag AB som även lämnar **allmänna upplysningar** om svensk och utländsk standard.

Postadress: SIS Förlag AB, 118 80 STOCKHOLM
Telefon: 08 - 555 523 10. *Telefax:* 08 - 555 523 11
E-post: sis.sales@sis.se. *Internet:* www.sis.se

English version

**Safety of machinery - Permanent means of access to machinery
- Part 4: Fixed ladders (ISO 14122-4:2004)**

Sécurité des machines - Moyens d'accès permanents aux
machines - Partie 4: Echelles fixes (ISO 14122-4:2004)

Sicherheit von Maschinen - Ortsfeste Zugänge zu
maschinellen Anlagen - Teil 4: Ortsfeste Steigleitern (ISO
14122-4:2004)

This European Standard was approved by CEN on 18 March 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	Page
Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Safety requirements	10
4.1 General requirements.....	10
4.2 Strength of fixed ladders	10
4.2.1 General requirements.....	10
4.2.2 Fixing elements.....	11
4.2.3 Platforms	12
4.3 Conditions for installation of a fall protection device	15
4.3.1 Conditions requiring the installation of a fall protection device	15
4.3.2 Choice of the type of fall protection device	16
4.4 Ladder.....	16
4.4.1 Position of the rungs	16
4.4.2 Rungs	17
4.4.3 Devices against slipping-off.....	19
4.4.4 Spacing between the ladder and any permanent obstruction	19
4.5 Safety cage	19
4.6 Guided type fall arrester on a rigid anchorage line.....	19
4.7 Departure and arrival areas - Platforms	19
4.7.1 Departure areas.....	20
4.7.2 Arrival areas	21
4.7.3 Access openings	22
4.7.4 Climbing off and getting on to a fixed ladder safely	22
4.7.5 Platforms	24
5 Verification of safety requirements.....	25
5.1 General.....	25
5.2 Tests of fixed ladders with two stiles	26
5.3 Testing of the safety cage.....	26
5.4 Tests of fixed ladders with one stile	28
5.4.1 Strength and bending of a ladder element; Torsion of the rungs	28
5.4.2 Strength of the rungs	29
5.4.3 Strength of the stile	30
5.5 Test of the anchor points	30
5.5.1 Fixed ladders with two stiles without fall arrester	30
5.5.2 Fixed ladders with one stile.....	31
5.5.3 Fixed ladders with fall arrester.....	31
6 Assembly and operating instructions	32
6.1 Assembly instructions	32
6.2 Operating instructions for ladders with fall arrester.....	32
6.3 Marking at points of entry and exit	32
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive Machinery 98/37/EC	33
Bibliography	34

Foreword

This document (EN ISO 14122-4:2004) 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 June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

This document 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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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

Introduction

This is the fourth part of the standard "Safety of machinery — Permanent means of access to machinery". The parts of the standard are:

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 European standard is a type B standard as stated in EN ISO 12100.

This standard 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 5.5.6 "Measures for safe access to machinery" of EN ISO 12100-2:2003 which supersedes EN 292-2.

The provisions of this document can 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 will take precedence over the provisions of this type B standard.

NOTE 2 The use of materials other than metals (composite materials, so-called "advanced" materials, etc.) does not alter the application of the present standard.

1 Scope

This standard applies to all machinery (stationary and mobile) where fixed means of access are necessary.

The purpose of this standard is to define the general requirements for safe access to machines mentioned in EN ISO 12100-2. EN ISO 14122-1 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 standard applies to fixed ladders, which are a part of a machine.

This standard may also be applied to fixed ladders to that part of the building 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 standard may be used also for means of access which are outside the scope of this standard. In those cases the possible relevant national or other regulations should be taken into account.

This standard applies also to ladders which are not permanently fixed to the machine and which may be removed, moved to the side or pivoted (swivel-mounted) for some operations of the machine (e. g. changing tools in a large press).

For the significant hazards covered by this standard, see Clause 4 of EN ISO 14122-1.

This standard is not applicable to machinery which are manufactured before the date of publication of this standard by CEN.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 131-2:1993, *Ladders — Requirements, tests, markings*.

EN 353-1, *Personal protective equipment against falls from a height — Part 1: Guided type fall arresters including a rigid anchorage line*.

EN 363, *Personal protective equipment against falls from a height — Fall arrest systems*.

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*.

EN ISO 14122-1, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of a fixed means of access between two levels (ISO 14122-1:2001)*.

EN ISO 14122-2, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2001)*.

EN ISO 14122-3, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2001)*.