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(JMF)

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

ICS 13.110

Reference number : JIS B 9713-3 : 2004 (E)

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Health, Labour and Welfare and the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from The Japan Machinery Federation (JMF)/the Japanese Standards Association (JSA), with a draft of Industrial Standard based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

This Standard has been made based on ISO 14122-3:2001 *Safety of machinery—Permanent means of access to machinery—Part 3 : Stairs, stepladders and guard-rails* for the purposes of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Ministers and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

JIS B 9713 consists of the following parts, under the general title “*Safety of machinery—Permanent means of access to machinery*”:

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.

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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

Introduction This Japanese Industrial Standard has been prepared based on the first edition of ISO 14122-3:2001 *Safety of machinery—Permanent means of access to machinery—Part 3 : Stairs, stepladders and guard-rails* published in 2001 without modifying the technical contents.

The foreword of the original International Standard has been excluded because it is not part of the provisions.

This part of JIS B 9713 is a group safety standard and Part 3 of the series of standards in JIS B 9713.

The provisions of this document may be supplemented or modified by a product safety standard.

- Notes 1 For machines which are covered by the scope of a product safety standard and which have been designed and built according to the provisions of that standard, the provisions of that product safety standard take precedence over the provisions of this group safety standard.
- 2 This Standard requires the manufacturers to provide “safe access to operating position, servicing points and maintenance area” and to prevent “risk of slipping, tripping or falling”
- 3 See also relevant matters described in 6.2.4 “*Provision for safe access to machinery*” of ISO 12100-2.
- 4 The use of materials other than metals (wood composite materials, so-called advanced materials, etc.) does not alter the application of this part of JIS B 9713.

Information : JIS Z 8051:2004 sets up the “hierarchy” of safety standards as follows:

- *basic safety standard*, comprising fundamental concepts, principles and requirements with regard to general safety aspects applicable to a wide range of products, processes and services;
- *group safety standard*, comprising safety aspects applicable to several or a family of similar products, processes or services dealt with by more than one committee, making reference, as far as possible, to basic safety standards;
- *product safety standard*, comprising safety aspect(s) for a specific, or a family of product(s), process(es) or service(s) within the scope of a single committee, making reference, as far as possible, to basic safety standards and group safety standards;

The purpose of this Standard is to define the general requirements for safe access to machines mentioned in ISO 12100-2. Part 1 of JIS B 9713 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.

Information : The dimensions specified are consistent with established ergonomic data given in EN 574-3 "*Safety of machinery—Human body dimensions—Part 3: Anthropometric data*".

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

This Standard applies to stairs, step ladders and guard-rails which are a part of a machine.

This Standard may also apply to stairs, step ladders and guard-rails 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.

Notes 1 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 take precedence.

This Standard applies also to stairs, step ladders and guard-rails 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).

For the significant hazards covered by this Standard, see clause 4 of JIS B 9713-1.

2 The International Standard corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21.

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

2 Normative reference The following standard contains provisions which, through reference in this Standard, constitute provisions of this Standard. If the indication of the year of publication is given to these referred standard, only the edition of the indicated year constitutes the provision of this Standard but the revision and amendment made thereafter do not apply. The normative reference without the indication of the year of coming into effect apply only to the most recent edition (including amendments).

JIS B 9713-1 *Safety of machinery—Permanent means of access to machinery—Part 1: Choice of fixed means of access between two levels*

Note : **ISO 14122-1:2001** *Safety of machinery—Permanent means of access to machinery—Part 1: Choice of fixed means of access between two levels* is identical with the said standard.

3 Terms and definitions For the purposes of this part of **JIS B 9713**, the terms and definitions stated in **JIS B 9713-3** and the following additional definitions apply:

Information : See **EN 1070** for relevant terms and definitions.

3.1 stairs and step ladders the definitions stated in 3.2 and 3.3 of **JIS B 9713-1** are completed by:

Succession of horizontal levels (steps or landings) allowing passage on foot from one level to another composed of the following elements, shown in figure 1 and explained from 3.1.1 to 3.1.16.

3.1.1 climbing height vertical distance between the reference level and the landing (H in figure 1)

3.1.2 flight uninterrupted sequence of steps between two landings

3.1.3 going horizontal distance between the step nosing of two consecutive steps (g in figure 1)

3.1.4 headroom minimum vertical distance, clear of all obstacles (such as beams, ducts, etc.) above the pitch line (e in figure 1)

3.1.5 landing horizontal resting area situated at the end of a flight (l in figure 1).

3.1.6 walking line theoretical line indicating the average path of the users of the stair or the step ladder

3.1.7 overlap difference between the depth of the step and the going (r in figure 1)

3.1.8 pitch line a notional line connecting the leading edge of the nosing of successive steps taken on the walking line and which extends down to the landing at the bottom of the flight from the nosing on the landing at the top of the flight (p in figure 1)

3.1.9 angle of pitch angle between the pitch line and the reference level (α in figure 1)

3.1.10 rise height between two consecutive steps measured from the tread surface of one to the tread surface of the next (h in figure 1)

3.1.11 step horizontal surface on which one places the foot to go up or down the stair or step ladder

3.1.12 nosing top edge at the front of the step or landing

3.1.13 string flanking framework element supporting the steps