SLOVENSKI STANDARD
SIST EN 414:2002

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Nadomeġļa:
SIST EN 414:1995

Varnost strojev - Pravila za naļrtovanje in predstavljanje varnostnih standardov

Safety of machinery - Rules for the drafting and presentation of safety standards

Sicherheit von Maschinen - Regeln für die Abfassung und Gestaltung von Sicherheitsnormen

Sécurité des machines - Regles pour l'elaboration et la présentation des normes de sécurité

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ICS:

01.120	Standardizacija. Splošna pravila	Standardization. General rules
13.110	Varnost strojev	Safety of machinery

SIST EN 414:2002 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 414

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English version

Safety of machinery - Rules for the drafting and presentation of safety standards

Sécurité des machines - Règles pour l'élaboration et la présentation des normes de sécurité

Sicherheit von Maschinen - Regeln für die Abfassung und Gestaltung von Sicherheitsnormen

This European Standard was approved by CEN on 16 July 1999.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 114 "Safety of machinery", the secretariat of which is held by DIN.

This European Standard replaces EN 414:1992.

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 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

This document is intended for use by Technical Committees writing type B and type C standards (as defined in 3.2 and 3.3).

It is the rule for the presentation of standards requested by CEN/BT in the programme mandated from the European Commission in support of the "Machinery Directive" (98/37/EC).

The revision of EN 414 takes into account relevant resolutions and guidance of CEN/BT, CEN/BTS 2 and the result of the CEN-Seminar on safety of machinery held on 8 and 9 December 1994. It is also the result of feed back from TCs and WGs using the first edition of EN 414 when preparing B and C type standards.

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.

0 Introduction

CEN/CENELEC have embarked on a programme of work to produce a series of related machinery safety standards as part of the European process for harmonisation. It has been necessary to propose rules for the preparation, drafting and presentation of these safety standards to supplement the CEN/CENELEC Internal Regulations – Part 3 which set out general principles and requirements for all European standards. This document both makes use of and refers to the principles and concepts established in EN 292. In addition, the draft revision of ISO/IEC Guide 51 has been taken into account as far as possible at the time of drafting.

1 Scope

This document specifies requirements for the drafting and presentation of European machinery safety standards and standards for safety components, primarily to achieve consistency and acceptable quality, throughout the programme, of the various standards to be prepared (also to meet the requirements of the Mandate from the European Commission).

It also gives requirements on the criteria for the selection of new work items and for procedures to prepare and produce standards in an efficient and effective way.

This document gives requirements which are supplementary to the CEN/CENELEC Internal Regulations – Part 3 when this is necessary because of the special requirements of machinery safety standards and standards for safety components.

This document applies primarily to the drafting of type C standards. It may also apply to type B standards but the foreseeable variation in the format of these standards prevents general application. When requirements specifically apply to type B standards, this is indicated.

This document applies to type B and type C safety standards to be prepared, or in the course of preparation. It does not apply to those standards which have complied with the 1992 edition of this document and have reached stage 41 before issue of this document.

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.

EN 292-1:1991, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

EN 292-2:1991, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications*

EN 292-2:1991/A1:1995, *Safety of machinery – Basic concepts, general principles for design –Part 2: Technical principles and specifications*

EN 1050:1996, *Safety of machinery — Principles for risk assessment*

EN 1070, *Safety of machinery — Terminology*

CEN/CENELEC Internal Regulations – Part 3:1999, *Rules for the drafting and presentation of European Standards (PNE-Rules) (ISO/IEC Directives – Part 3:1997, modified)*

3 Terms and definitions

For the purposes of this document, definitions given in EN 1070 apply.

Additional definitions specifically needed for this document are added below:

3.1
type A standard
(Basic safety standard)
Standard giving basic concepts, principles for design, and general aspects that can be applied to all machinery.

3.2
type B standard
(Generic safety standard)
Standard dealing with one safety aspect or one type of safeguard that can be used across a wide range of machinery :

— type B1 standard on particular safety aspects (e.g. safety distances, surface temperature, noise) ;

— type B2 standard on safeguards (e.g. two-hand control devices, interlocking devices, pressure sensitive devices, guards).

3.3
type C standard
(Machine safety standard)
Standard dealing with detailed safety requirements for a particular machine or group of machines.

NOTE The term "group of machines" means machines which have similar intended use and similar hazards, hazardous situations and events .

3.4
relevant hazard
Hazard which is identified as being present at or associated with the machine as the result of one step of the process described in EN 1050.

3.5
significant hazard
Hazard which has been identified as relevant and which requires specific action by the designer or manufacturer to eliminate or to reduce the risk according to the risk assessment (see figure 1).

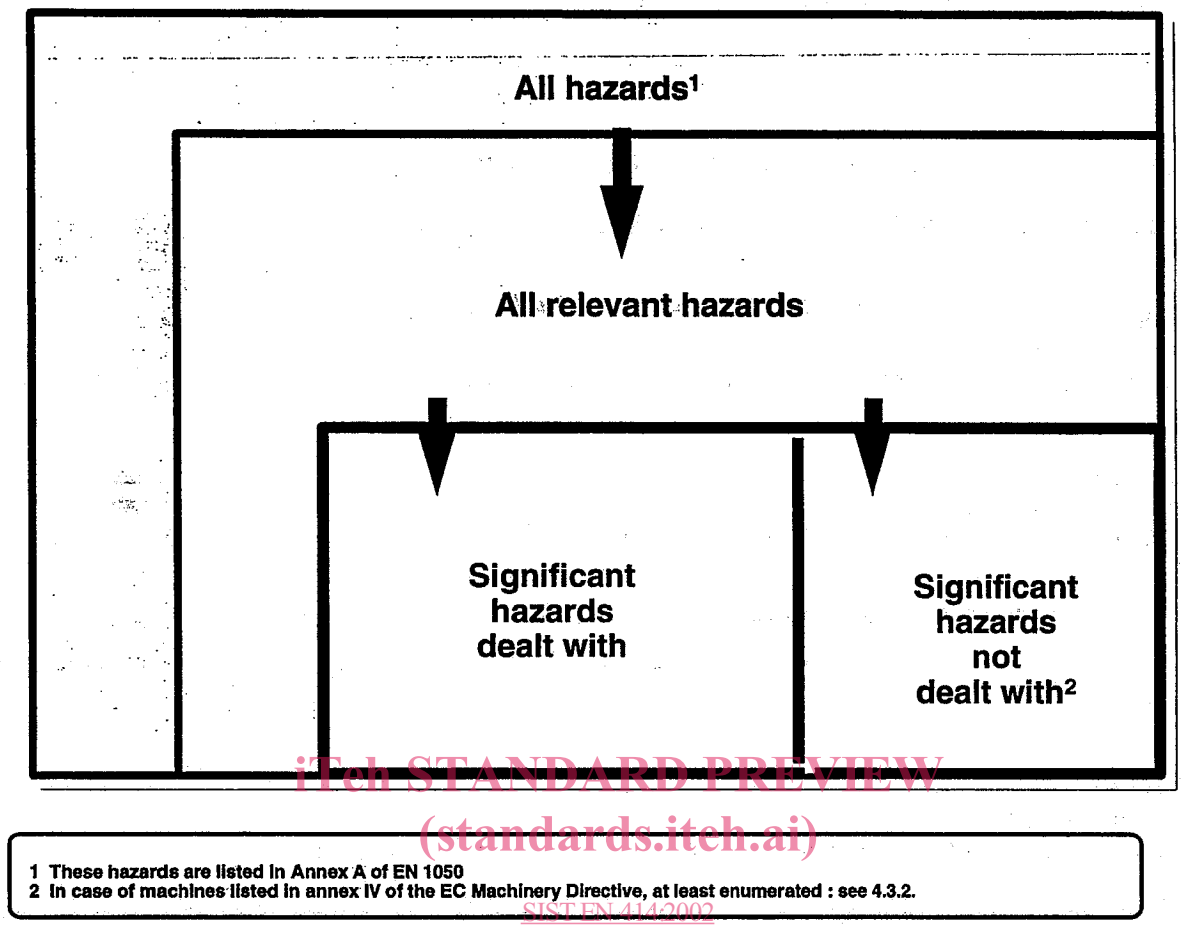

Figure 1 — Dealing with hazards of a particular machine or machine group.

3.6
added value
More detailed description or specification of a provision than in existing documents (for example, a description of a specific protective measure may include reference to appropriate type B and type C standards). This describes the state of the art for Essential Safety Requirements as defined in EN 292-2:1991/A1:1995, annex A ("Annex I of the EC Machinery Directive").

NOTE The provisions of a standard are aimed at reflecting the state of the art at a given time, for a given product.

The added value results from applying to the product the provisions for design on which, when the standard was being prepared, the consensus of all interested parties has been reached. It rises along with technical progress.

4 General principles

4.1 All safety standards

The Part 3 of the CEN/CENELEC Internal Regulations, EN 292 and EN 1050 shall be used in conjunction with the present standard when preparing a new safety standard, or when revising an existing safety standard.

Safety standards shall not contradict the basic concepts, principles for design and general aspects stated in type A standards. The overall purpose of type A-standards is to provide manufacturers, designers, etc. with the strategy or framework necessary to achieve conformity with the European Legislation. An essential element in this process is an understanding of the underlying legal framework, which is expressed in the essential safety requirements of the EC Machinery Directive.

In general, standards shall not repeat or paraphrase the text of other reference standards (see CEN/CENELEC Internal Regulations – Part 3:1999, 6.6.6.1) but, for better understanding of safety standards, it is acceptable to repeat a basic definition or concept, the scope of the standard, and/or basic requirement given in EN 292.

4.2 Type B standards

They shall :

a) deal either with one safety aspect (type B1 standard) or a safeguard (type B2 standard) ;

b) concerning type B1 standards, define the basic principles of the safety topic and define by data and/or methodology how these can be applied to type C standards. Where relevant the means of verification shall also be included ;

c) concerning type B2 standards, give the performance requirements for the design and construction of the safeguard together with the means of verification;

d) establish, as necessary and practicable, more than one category to allow for different applications and give guidance.

NOTE Reasons for categories to be established are e.g. :

— the severity of the possible harm from the considered hazard ;

— the frequency and duration of the hazardous situation ;

— the probability of occurrence of a hazardous event ;

— the possibility to avoid or limit the harm.

4.3 Type C standards

4.3.1 General

Type C standards should deal with all the hazards significant to one type of machine or one group of machines in one standard:

a) by reference to relevant and applicable type B standards and categories (see 6.8.3) ;

Any type B standard may be used as a reference standard if it is available as prEN when finalising a type C standard on the condition that the reference is dated.

When type B standards give a choice between various protective measures (e.g. EN 294 shows table 1 and table 2 for reach over protective structure), the type C standard shall state which protective measure(s) should be used.

b) by reference to other standards (e.g. type C standard) where such significant hazards are adequately dealt with (see 4.4) ;

c) by specifying safety requirements in the standard, when reference to other standards is not possible or not sufficient and risk assessment and priorities show this is required (see 5.4 to 5.6) ;

d) deal as far as possible with objectives rather than design details to minimise restrictions on design.

4.3.2 Standards related to Annex IV of the Machinery Directive

A type C standard corresponding to machinery listed in "annex IV of the Machinery Directive" shall deal with or at least enumerate all its significant hazards, hazardous situations and hazardous events in one standard.

4.3.3 Required provisions

It is a basic principle that type C standards shall contain sufficient provisions to enable designers and manufacturers to meet the essential requirements of the Machinery Directive. In doing so the standards also meet the conditions of the relevant EC/EFTA mandates. The standards shall therefore clearly establish the following:

— the scope (see 5.3 and 6.4) ;

— all significant hazards (see 6.7) ;

— the provisions with added value (see 4.3.4, 5.7 and 6.8) ;

— the means of verifying the protective measures(see 5.8 and 6.9).

This means that wherever possible a type C standard should deal with all significant hazards, hazardous situations and events identified as arising from the use of the machine. The exception to this comprehensive treatment of significant hazards, hazardous situations and events is justified where a type C standard deals with one or more hazard(s) that are sufficiently important to require special treatment. Where a type C standard deals with specific hazard(s) this should be indicated clearly in the title and the scope (e.g. "Safety of Widget machines — Measurement of noise"). These standards may be produced as a series of parts forming a complete standard or as several discrete standards that could be combined at a subsequent revision.

Where it is decided not to deal with all significant hazards, hazardous situations and events (e.g. by lack of knowledge because this will cause an unacceptable delay in the drafting of the standard) this shall be indicated clearly in the scope (see 6.4.2.2).

A special case requiring careful consideration are those type C standards dealing with "common requirements". Common requirements are defined as those provisions adding value to an essential requirement that can be used to minimise or eliminate a risk that occurs across the range of defined machines and that can be applied to all or most of these machines. Any machines not covered by particular aspect of a common requirement should be identified as an exclusion. Too many exclusions from any common requirement would indicate that it is not common. The standard should not contain unspecific general principles.

4.3.4 Provision with added value

Added value will normally consist of a description of specific protective measure(s) dealing with the significant hazard, hazardous situation and event. However, this may also include reference to type "B" standards or to other reference standards (EN, ISO or IEC) (see 6.8 of this document and CEN/CENELEC Internal Regulations – Part 3:1999, 6.2.2, 6.6.6.2 and 6.6.6.5).

NOTE In the absence of a ratified type B standard, common requirement standard or other reference standard, the following options are available :

— repeat in full the relevant sections of the draft type B standard, common requirement standard, or any other suitable technical document.

— refer to the relevant section of a prEN identified by number and date of issue.

— refer to a technical specification produced by a professional organisation (such as FEM[1)]). This can be done following the specific CEN policy on normative references.

— seek help from the relevant type B standard WG/TC.

— provide self data/specification.

Dealing with a significant hazard by a direct reference to the relevant clause in EN 292 is only acceptable:

— where the relevant clause of EN 292 gives sufficient added value (particularly clause 5 "information for use") ;

— if the drafting of provisions would cause an unacceptable delay in the preparation of the standard.

However, in this case :

— it shall be stated in the standard that the hazard concerned is not adequately dealt with in the current version of the standard ;

— the TC shall make any effort to complete as soon as possible the drafting of the needed provisions.

In exceptional circumstances, where there is nothing to add because the essential requirement says all that is required to be said, it is permissible to refer to the essential requirement by quoting the reference in EN 292-2:1991/A1:1995, annex A.

This is also permissible for machinery according to Annex IV of the Machinery Directive where the standard cannot give a provision with added value but the hazard has been identified as significant (see 4.3.2).

4.4 Need for a type B standard

The creation of a type B standard (see 6.11.1) shall be considered when requirements appropriate to more than one type of machine or one group of machines have been identified.

4.5 Deviation in a type C standard

When a type C standard deviates from one or several aspects or provisions dealt with by a type B, the existing type C standard takes precedence over the type B standard.

The reason for deviation should be put in the standardisation-file or, in case of comments at prEN stage in the CRM (Comments Resolution Meeting) -file.

[1)] Fédération Européenne de la Manutention.

5 Preliminary work for drafting

5.1 General

Before a safety standard on machinery is drafted, the need for the standard shall have been established, using the criteria given in 5.2.

NOTE The result of the procedure may provide information which can be used in the scope (see 5.3).

Then, the procedure given in 5.3 to 5.8 shall be carried out in the order indicated, to provide information to allow an appropriate standard to be drafted.

5.2 Determination of the necessity and/or priority for standardisation

The need for standardisation and its priority shall be determined from the answers to the questions contained in 5.2a) to 5.2h).

a) Is there a demand for European standards arising from regulatory bodies or other interested bodies such as professional bodies, employee or employers associations, trade unions, accident prevention organisations, consumer organisations, standardisation bodies ?

b) Is there a need for a standard (e.g. terminology) to support other safety standards ?

c) Are there significant hazards, hazardous situations and events generating risk to the safety or health of persons ?

d) Is there or will there be in the foreseeable future a sufficient number of related machines or devices to justify the production of a standard ?

e) Are there national standards/specifications giving specific requirements, either directly or by reference to another document, which can be barriers to internal European trade ?

f) Are there proven professional, national or international documents or other documents available so as to give reasonable expectation for positive and rapid results ?

g) Is there sufficient expertise, collective knowledge and experience for standardisation ?

h) Is there sufficient availability of experts, project leader and support (secretariat, financial resources) ?

5.3 Definition of the scope

The precise limits of the machine or group of machines to be standardised shall be established and include the following (see EN 292-1:1991, 5.1):

a) definition of the machine or group of similar machines;

b) determination of the intended use of the machine (see EN 292-1:1991, 3.12);

c) determination of the space limits (see EN 292-1:1991, 5.1);

d) determination of the foreseeable "life limit", when applicable;

e) definition of the field of application;

f) indication of machines and/or hazards not dealt with.