



SLOVENSKI STANDARD

SIST EN 13478:2002

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Safety of machinery - Fire prevention and protection

Sicherheit von Maschinen - Brandschutz

Sécurité des machines - Prévention et protection contre l'incendie

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Ta slovenski standard je istoveten z: **EN 13478:2001**

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ICS:

13.110	Varnost strojev	Safety of machinery
13.220.01	Varstvo pred požarom na splošno	Protection against fire in general

SIST EN 13478:2002

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
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English version

Safety of machinery - Fire prevention and protection

Sécurité des machines - Prévention et protection contre
l'incendie

Sicherheit von Maschinen - Brandschutz

This European Standard was approved by CEN on 3 October 2001.

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 Management Centre 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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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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 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

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).

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

In this standard the annexes A and B are informative.

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

The safety of machinery against fire involves fire prevention and protection and fire-fighting. In general, these include technical (Figure 1, column 1), structural (Figure 1, column 2), organizational (Figure 1, column 3), works (Figure 1, column 4) and public fire fighting (Figure 1, column 5) measures. Effective fire safety of machinery can require the implementation of a single measure or a combination of measures.

CEN and CENELEC are producing a set of standards to assist designers, manufacturers and other interested bodies to interpret the essential safety requirements in order to achieve conformity with European Legislation. Within this series of standards CEN has undertaken to draw up a standard to give guidance in the field of fire prevention and protection, as hazards from fire are to be considered in accordance with 4.8 of EN 292-1:1991.

This European Standard was drawn up on request and by mandate of CEC and EFTA to fulfil the Council Directive on the approximation of the laws of the member states relating to machinery (98/37/EC) which demands in its Annex I, 1.5.6 that machinery shall be so designed and constructed to avoid any risk of fire.

In accordance with EN 292-1 it is a type B standard.

CEN/TC 114 has a mandate in this area to produce A-type and B-type standards, which will allow verification of conformity with the essential safety requirements.

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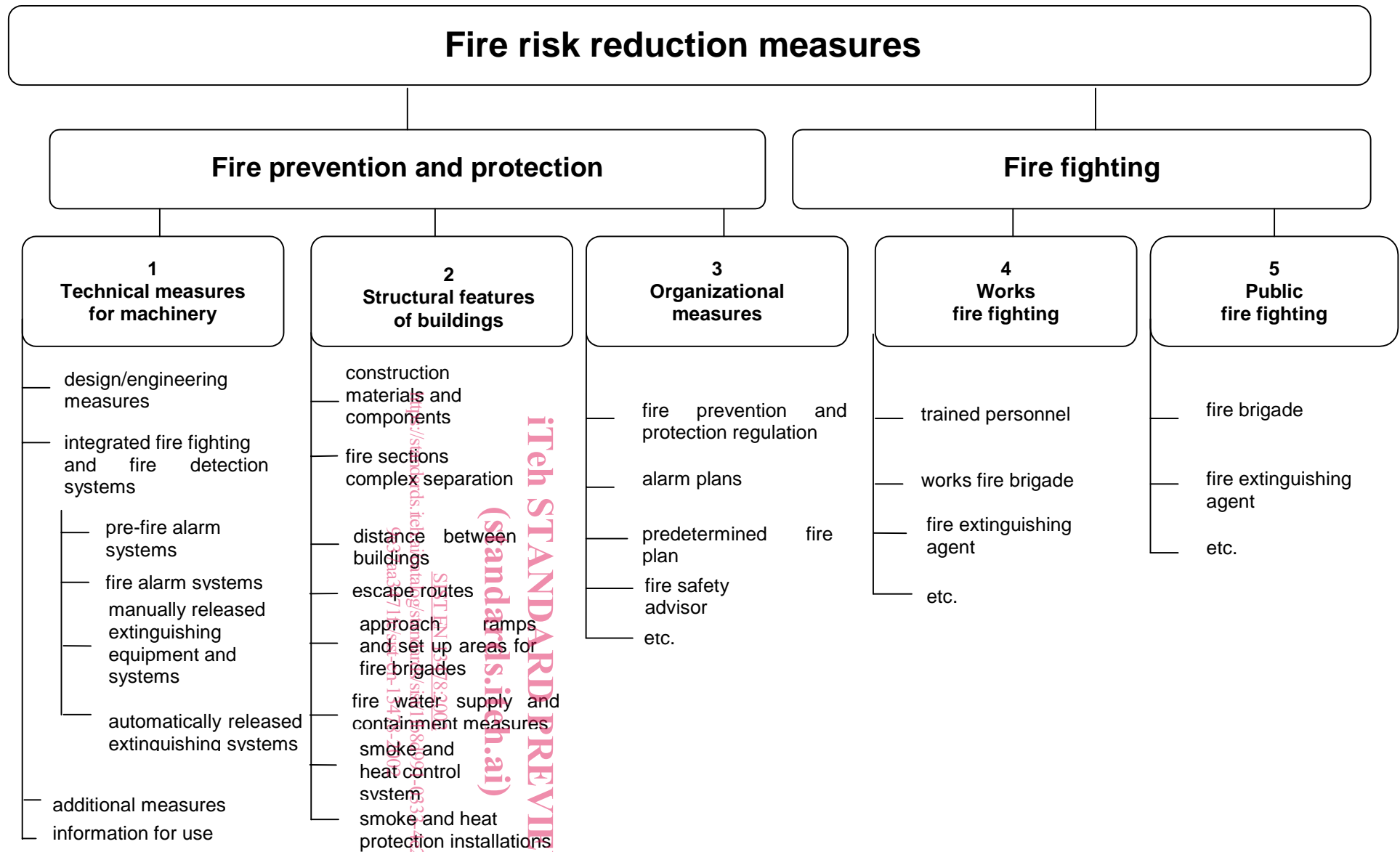


Figure 1 — Fire risk reduction measures

EN 13478:2001 (E)

1 Scope

This European Standard specifies methods of identification of the fire hazard resulting from machinery and the performance of a corresponding risk assessment. It specifies the basic concepts and methodology of technical measures for fire prevention and protection to be taken during the design and construction of machinery. The purpose of this European Standard is to reach the required safety level according to the intended use of the machinery by applying technical measures for machinery (see Figure 1, column 1). Technical measures are mainly integrated in the machinery and they are preferably implemented by use of safety components as defined in Directive 98/37/EC.

This European Standard is applicable to the machinery given in the Council Directive of 22 June 1998 on the approximation of the laws of the Member States relating to machinery (98/37/EC). The exclusions given in this Directive are also relevant to this European Standard.

This European Standard does not cover machinery designed to contain controlled combustion processes (e.g. internal combustion engines, furnaces), unless these processes may constitute the ignition source of a fire in other parts of the machinery or outside of this.

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, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology.*

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

EN 1050, *Safety of machinery — Risk assessment.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1 combustibility

property of a material capable of burning

NOTE Accurate assessment of the combustibility characteristics of a material will depend on the operational conditions of the machinery and the form of the material (e.g. shavings, dusts).

3.2 combustible

capable of burning with or without flame
[ISO/IEC Guide 52]

3.3 combustion

exothermic reaction of a substance with an oxidizer, generally accompanied by flames and/or glowing and/or emission of smoke
[ISO/IEC Guide 52]

3.4**damaging fire**

fire which causes harm to people, buildings, machinery and/or environment

3.5**fire extinguishing agent**

agent which is appropriate to extinguish fire

3.6**fire protection**

measures such as design features, systems, equipment, buildings, or other structures to reduce danger to persons and property by detecting, extinguishing or containing fires
[ISO 8421-1]

3.7**fire prevention**

measures to prevent the outbreak of a fire and/or to limit its effects
[ISO 8421-1]

3.8**fire load**

sum of the calorific energies which could be released by the complete combustion of all the combustible materials involved in the machine and process, including raw and process materials
[ISO/IEC Guide 52]

3.9**fire hazard**

potential for loss of life (or injury) and/or damage to property and/or environment by fire
[ISO/IEC Guide 52]

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3.10**fire**

general term for intended combustion (useful fire) as well as for uncontrolled combustion (damaging fire)

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3.11**fire alarm system**

system which detects the onset of fire and initiates an emergency response

3.12**fire risk**

combination of the probability of occurrence of harm from fire and the severity of that harm

3.13**fire safety advisor**

employee or consultant who assesses the fire prevention and protection measures for all or parts of business undertaking

3.14**flame retardant**

substance added or treatment applied to a material in order to suppress or delay the appearance of a flame and/or reduce its propagation rate

3.15**flame**

zone of combustion in the gaseous phase from which light is emitted
[ISO/IEC Guide 52]

EN 13478:2001 (E)**3.16****flammability**

ability of a material or product to burn with a flame under specified conditions
[ISO/IEC Guide 52]

NOTE Accurate assessment of the ignition characteristics of material will depend on the operational conditions of the machinery.

3.17**glow**

combustion of a material in the solid phase without flame but with emission of light from the combustion zone

3.18**harm**

physical injury and/or damage to health or property
[EN 1050]

3.19**ignition source**

source of energy that initiates combustion

3.20**ignition**

initiation of combustion
[ISO/IEC Guide 52]

3.21**ignition energy**

energy necessary to initiate ignition

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3.22**organizational measures**

all fire prevention and protection measures applied to assign tasks and responsibilities, to manage the emergency plan in case of fire; and assist the fire brigade in developing and implementing its own fire fighting procedures

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3.23**overheating**

uncontrolled temperature increase

3.24**pre-fire alarm system**

system which detects the potential onset of fire and initiates an emergency response in respect of this

3.25**public fire fighting**

all measures implemented by a community to fight fires by means of the fire brigades with capacities in accordance with the local conditions
[ISO/IEC Guide 52]

3.26**safety component**

component of the machinery, provided that it is not interchangeable equipment, which fulfils a safety function when in use and the failure or malfunctioning of which endangers the safety or health of exposed persons

NOTE see Directive 98/37/EC, clause 1, article 1, 2b.

3.27**self-ignition**

ignition resulting from self heating
[ISO/IEC Guide 52]

3.28**self-heating**

exothermic reaction within a material resulting in a rise in temperature in the material
[ISO/IEC Guide 52]

3.29**smoke**

visible suspension of solid and/or liquid particles in gases resulting from combustion or pyrolysis
[ISO/IEC Guide 52]

3.30**structural features of buildings**

all fire prevention and protection measures related to the design, construction and functional planning of a building to reduce fire spread; facilitate escape of occupants; provide access to the fire brigade and safe fire fighting conditions; and reduce damage to the building, its contents and the environment

3.31**works fire fighting**

all measures implemented by plant management for the user of the machinery to fight any outbreak of fire using own personnel

4 Requirements for hazard identification**4.1 General****iTeh STANDARD PREVIEW**

A fire hazard occurs if combustible materials, oxidizer and ignition energy are available in sufficient quantities at the same place and at the same time (see Figure 2).

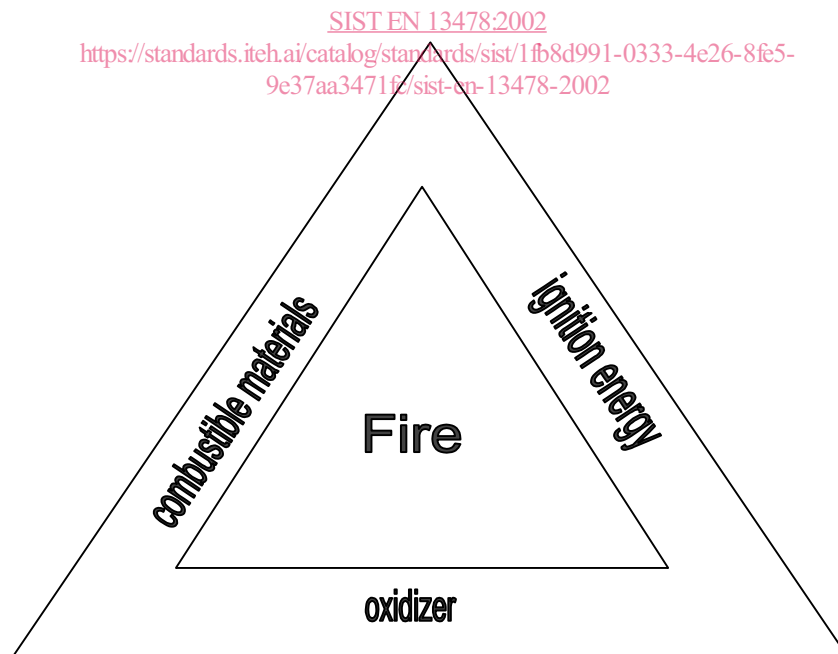


Figure 2 — Fire-Triangle