

**Masinate ohutus. Heliliste ja visuaalsete ohu- ja
teabesignaalide süsteem KONSOLIDEERITUD
TEKST**

Safety of machinery - System of auditory and visual
danger and information signals CONSOLIDATED
TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 981:1999+A1:2008 sisaldab Euroopa standardi EN 981:1996+A1:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 15.12.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 24.09.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 981:1999+A1:2008 consists of the English text of the European standard EN 981:1996+A1:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 15.12.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 24.09.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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Võtmesõnad: ergonoomia, helisignaaliid, konstruktsioon, kontrolltuli, kvaliteet, ohtudest signaliseerimine, ohutusvärv, seadmeohutus, tehnilised andmed, visuaalsed signaaliid, õnnetuste vältimine

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Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

English Version

Safety of machinery - System of auditory and visual danger and information signals

Sécurité des machines - Système de signaux auditifs et visuels de danger et d'information

Sicherheit von Maschinen - System akustischer und optischer Gefahrensignale und Informationssignale

This European Standard was approved by CEN on 21 October 1996 and includes Amendment 1 approved by CEN on 14 August 2008.

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

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, 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

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Foreword

This document (EN 981:1996+A1:2008) has been prepared by Technical Committee CEN/TC 122 "Ergonomics", 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 March 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-08-14.

This document supersedes EN 981:1996.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

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).

A1 For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A1**

On the international level the International Standard ISO 11429 "Ergonomics – System of auditory and visual danger and information signals" has been prepared by WG 3 "Danger signals and speech communication in noisy environments" of ISO/TC 159/SC 5 "Ergonomics of the physical environment". The technical content of both the European Standard **A1** EN 981 **A1** and the International Standard ISO 11429 is identical, with the exception of the emergency evacuation signal which is not dealt with in this European standard, however the limits of applicability of the standards to other technical fields are different.

Due to the different limits of applicability still existing on the European and international level direct transformation of the International Standard into a European Standard is not possible. The reason is that EN 981 has been prepared in order to fulfil the essential safety and health requirements of annex I of the Council Directive 89/392/EEC of 14 June 1989 on the approximation of the laws of the Member States relating to machinery: Essential health and safety requirements relating to the design and construction of machinery (see Annex A of EN 292-2:1991/A1:1995) and that therefore the limits of applicability of the European Standard is restricted to this Directive.

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

1 Scope

To reduce risks associated with misinterpretation of visual and auditory danger signals, a system of danger and information signals is specified taking into account the different degrees of urgency.

This European Standard is applicable to all danger and information signals which have to be clearly perceived and differentiated as specified in 5.3 of EN 292-2:1991, by other requirements or by the work situation, and to all degrees of urgency – from extreme urgency to an ALL CLEAR situation. Where visual signals are to be complementary to sound signals, the signal character is specified for both.

This European Standard does not apply to certain fields covered by specific standards or other conventions in force (international or national); in particular, fire alarms, medical alarms, alarms used in the field of public transport, navigation signals and signals for special fields of activity (for example, military). When new signals are being planned, however, this European Standard should be considered in order to avoid inconsistency.

For auditory signals, the system of signal character is a guideline for a signal language based on message categories which are classified according to urgency. Certain characters are specified for purposes which require safe and rapid recognition. Certain categories allow possibilities for variants, e.g. control and warning signals at workplaces where the signalling is intended for personnel with specific training.

For visual signals, the established meanings of the safety colours are not affected by this European Standard. For different needs, complementary meanings have been assigned to the signals by timed patterns, and in a very few cases by alternating colours.

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

EN 457:1992, *Safety of machinery – Auditory danger signals – General requirements, design and testing (ISO 7731:1986 modified).*

EN 842:1996, *Safety of machinery – Visual danger signals – General requirements, design and testing.*

EN 60073, *Coding of indicating devices and actuators by colours and supplementary means (IEC 73:1991).*

ISO 8995, *Principles of visual ergonomics – The lighting of indoor work systems.*

ISO 9921-1, *Ergonomic assessment of speech communication – Part 1: Speech interference level and communication distances for persons with normal hearing capacity in direct communication (SIL method).*

3 Definitions

For the purposes of this standard the following definitions apply:

**3.1
alternating sound [light]**
shifts between two or three acoustical [optical] spectra, with equal duration of the segments, at least 0,15 s each

**3.2
bursts of sound**
normally recurrent group of sound pulses with short but distinct interruptions, the pulse period, including interruption, being between 0,25 s and 0,125 s

**3.3
character of a signal**
combination of one or more auditory or visual components differentiating one signal from another