SLOVENSKI STANDARD
SIST EN 1438:2003

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Simboli za les in lesne proizvode

Symbols for timber and wood-based products

Symbole für Holz und Holzwerkstoffe

Symboles pour le bois et les produits a base de bois

Ta slovenski standard je istoveten z: **EN 1438:1998**

ICS:

01.075	Simboli za znake	Character symbols
79.040	Les, hlodovina in žagan les	Wood, sawlogs and sawn timber

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English version

Symbols for timber and wood-based products

Symboles pour le bois et les produits à base de bois

Symbole für Holz und Holzwerkstoffe

This European Standard was approved by CEN on 19 July 1998.

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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Contents

Page

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 175 "Round and sawn timber", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by February 1999, and conflicting national standards shall be withdrawn at the latest by February 1999.

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.

No existing European standard is superseded.

Introduction

Acceptable uniformity between standards on timber and wood-based materials can only be obtained if a common technical language is used. Part of such a language is a set of symbols which should be used consistently throughout all timber related standards currently being drafted.

ISO 3898 defines standard notations for structural design. It covers only general notations which are necessary for this field of application and excludes notations relevant to a particular material (for example steel, concrete, wood) or to a specific technical field (for example foundations).

Because of their anisotropic nature and other special features, timber and wood-based products have a need for a unique set of symbols. The set of symbols in this European Standard tries to fulfil this need. It follows the general principles laid down in ISO 3898, not only for use in the design of timber structures, but also for the detailed aspects necessary for timber in a wide range of standards and other documents.

1 Scope

This standard defines a wide range of symbols for use in documents covering solid timber and all wood-based materials. Clause 5 follows the layout of ISO 3898. All the symbols are presented as letter types in alphabetical order.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from another publication. These normative references are cited at the appropriate places in the text and the publication is listed hereafter. For dated references, subsequent amendments to or revisions of this publication 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.

ISO 3898 1987 Bases for design of structures - Notations - General symbols.

3 Letter types

Both upper case (capital) and lower case (small) Latin and Greek letters appear in Roman (upright) and Italic (sloping) style, as shown in table 1.

Table 1 : Letter types

		ROMAN	ITALIC
LATIN	upper case	A, B, C etc.	*A, B, C etc.*
	lower case	a, b, c etc.	*a, b, c etc.*
GREEK	upper case	A, B, Γ etc.	*A, B, Γ etc.*
	lower case	α, β, γ etc.	*α, β, γ etc.*

4 Principles

4.1 The principal use of letters as symbols is as given in ISO 3898, see table 2.

Table 2 : Letter guide for the construction of symbols

Type of letter	Dimensions	Usage
Latin upper case	Force, force times length, length to a power other than 1, temperature	1. Actions and action-effects 2. Area, first and second moment of area 3. Elastic moduli (exception to the general rule) 4. Temperature
Latin lower case	Length, quotient of length and time to a power, force per unit length or area, mass, time	1. Actions and action-effects per unit of length or area 2. Linear dimensions (length, width, thickness, etc.) 3. Strengths 4. Velocity, acceleration, frequency 5. Descriptive letters (subscripts) 6. Mass 7. Time
Greek upper case		Reserved for mathematics and for physical quantities excluding geometrical and mechanical quantities
Greek lower case	Dimensions	1. Coefficients and dimensionless ratios 2. Strains 3. Angles 4. Densities (mass density and weight density) (exception to the general rule) 5. Stresses (exception to the general rule)
NOTE : Concepts not included in table 2 should comply with the nearest appropriate category listed.		

4.2 For substantive symbols this standard uses:

Latin upper case Italic;
Latin lower case Italic and
Greek lower case Italic letters.

For subscripts this standard uses:

Latin lower case Roman or Italic letters.

4.3 Digits as well as units like N, kg, m, N/mm^2 and mathematical notations like $\sqrt{}$, $\int$ or Σ shall always be printed in Roman.

4.4 For subscripts the use of small format letters and numbers is preferred. They shall be printed in Italic if they represent symbols for quantities (e.g. ω_Ψ), and in Roman if they represent abbreviations (e.g. $f_{c,\,0,\,k}$).

4.5 In subscripts a comma followed by a space is used for separation of different digits, letters, symbols or abbreviations. The comma(s) and the space(s) may be omitted where no confusion is expected.

4.6 The order of the different parts of a subscript is from basic to evaluated as in f_{ck} for the characteristic value of the basic property compressive strength.

4.7 For mechanical properties of timber and wood-based products used in the design of structures the subscript k is normally used for the fifth percentile values of strength and modulus of elasticity, if this modulus is critical for strength, e.g. in the case of buckling. They are denoted as f_k and E_k respectively.

Where the E-modulus is used to calculate (mean) values of deformation the mean value can be used, denominated E_{mean}.

If so desired, more precise denominations can be used, e.g. f_{05}, f_{50}, or any other value, to make clear that a 5-, a 50-, or another percentile is meant.

4.8 Free choice between two symbols for one concept has been avoided as far as possible, e.g. :

only Q (not V) for variable action and
only V (not Q) for shear force.

4.9 Cartesian coordinates for a timber member are defined in figure 1a).

4.10 Cross-sectional dimensions of a timber member are defined in figure 1b).