Structural timber - Determination of characteristic values of mechanical properties and density

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 384:2016+A2:2022 sisaldab Euroopa standardi EN 384:2016+A2:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 384:2016+A2:2022 consists of the English text of the European standard EN 384:2016+A2:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.06.2022.	Date of Availability of the European standard is 08.06.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 79.040

EUROPEAN STANDARD

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English Version

Structural timber - Determination of characteristic values of mechanical properties and density

Bois de structure - Détermination des valeurs caractéristiques des propriétés mécaniques et de la masse volumique

Bauholz für tragende Zwecke - Bestimmung charakteristischer Werte für mechanische Eigenschaften und Rohdichte

This European Standard was approved by CEN on 8 October 2018 and includes Amendment 2 approved by CEN on 13 March 2022.

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

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European foreword

This document (EN 384:2016+A2:2022) has been prepared by Technical Committee CEN/TC 124 "Timber structures", 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of an identical text or by endorsement, at the latest by December 2022, and conflicting national standards shall be withdrawn at the latest by December 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 8 October 2018 and Amendment 2 approved by CEN on 13 March 2022.

This document supersedes ⟦A1⟩ EN 384:2016+A1:2018 ⟨A1⟧.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟦A1⟩ ⟨A1⟧ and ⟦A2⟩ ⟨A2⟧.

⟦A1⟩ *Deleted text* ⟨A1⟧

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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

Introduction

Structural design codes can only function effectively if standard methods of determining the mechanical and physical properties exist. The aim of the procedures given in this standard is to derive characteristic values that are comparable in terms of the populations they represent. The standard permits the use of as much existing test data as possible from various sampling and testing techniques.

Where methods are given to permit characteristic values to be determined from a less than ideal amount of structural size test data, reduction factors to reflect a lower degree of confidence are employed.

1 Scope

This European Standard gives a method for determining characteristic values of mechanical properties and density, for defined populations of visual grades and/or strength classes of machine graded structural timber. Additionally, it covers the stages of sampling, testing, analysis and presentation of the data.

The standard provides methods to derive strength, stiffness and density properties for structural timber from tests with defect-free specimen.

The values determined in accordance with this standard for mechanical properties and density are suitable for assigning grades and species to the strength classes of EN 338.

NOTE 1 For assigning grades and species to the strength classes in EN 338 only three properties, i.e. bending or tension strength, modulus of elasticity parallel to grain in bending or tension and density need to be determined from test data, other properties can be calculated according to Table 2.

NOTE 2 EN 1912 gives examples of established visual grades assigned to strength classes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 338, *Structural timber — Strength classes*

EN 408, *Timber structures — Structural timber and glued laminated timber — Determination of some physical and mechanical properties*

EN 13183-2, *Moisture content of a piece of sawn timber — Part 2: Estimation by electrical resistance method*

EN 13183-3, *Moisture content of a piece of sawn timber — Part 3: Estimation by capacitance method*

EN 14081-1:2016, *Timber structures — Strength graded structural timber with rectangular cross section — Part 1: General requirements*

EN 14081-2, *Timber structures — Strength graded structural timber with rectangular cross section — Part 2: Machine grading; additional requirements for initial type testing*

EN 14081-3, *Timber structures — Strength graded structural timber with rectangular cross section — Part 3: Machine grading; additional requirements for factory production control*

EN 14358:2016, *Timber structures — Calculation and verification of characteristic values*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp