SLOVENSKI STANDARD
oSIST prEN 12369-3:2021

01-marec-2021

Lesne plošče - Karakteristične vrednosti za dimenzioniranje konstrukcij - 3. del: Masivne lesne plošče

Wood-based panels - Characteristic values for structural design - Part 3: Solid wood panels

Holzwerkstoffe - Charakteristische Werte für die Berechnung und Bemessung von Holzbauwerken - Teil 3: Massivholzplatten

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Panneaux à base de bois - Valeurs caractéristiques pour la conception des structures - Partie 3 : Bois panneautés

oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9a-b88b-f0ef10b89a1a/osist-pren-12369-3-2021

Ta slovenski standard je istoveten z: **prEN 12369-3**

ICS:

79.060.99	Druge lesne plošče	Other wood-based panels

oSIST prEN 12369-3:2021 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

oSIST prEN 12369-3:2021

iTeh STANDARD PREVIEW
(standards.iteh.ai)

oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

oSIST prEN 12369-3:2021

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT prEN 12369-3

January 2021

ICS 79.060.99

Will supersede EN 12369-3:2008

English Version

Wood-based panels - Characteristic values for structural design - Part 3: Solid wood panels

Panneaux à base de bois - Valeurs caractéristiques pour la conception des structures - Partie 3 : Bois panneautés

Holzwerkstoffe - Charakteristische Werte für die Berechnung und Bemessung von Holzbauwerken - Teil 3: Massivholzplatten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 112.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

CEN members are the national standards bodies of 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 United Kingdom.

oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b51f21f2-55c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2021 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

oSIST prEN 12369-3:2021

Contents

Page

iTeh STANDARD PREVIEW
(standards.iteh.ai)
oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

oSIST prEN 12369-3:2021

European foreword

This document (prEN 12369-3:2021) has been prepared by Technical Committee CEN/TC 112 “Wood-based panels”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12369-3:2008.

This document is intended to be used in conjunction with EN 1995-1-1.

This European Standard is one of a series specifying characteristic values of wood-based panels for structural design. The other parts of this series are listed in the Bibliography.

Annex A is informative.

Compared to EN 12369-3:2008 the following changes have been made:

a) modification of the thickness range and of the values for single-layer panels given at Table 2 in conjunction with changes in EN 13353;

b) modification the thickness ranges and of the values for multi-layer panels given at Table 3 in conjunction with changes in EN 13353;

c) editorial changes.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

oSIST prEN 12369-3:2021

1 Scope

This document provides information on the characteristic values for use in designing structures incorporating wood-based panels. The characteristic values given are as defined in EN 1995-1-1.

This document includes the characteristic values of the mechanical properties and of the raw density for solid-wood panels complying with prEN 13353:2021 technical classes SWP/1 S, SWP/2 S, SWP/3 S.

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 789, *Timber structures — Test methods — Determination of mechanical properties of wood based panels*

EN 1058, *Wood-based panels — Determination of characteristic 5-percentile values and characteristic mean values*

EN 1156, *Wood-based panels — Determination of duration of load and creep factors*

EN 1995-1-1, *Eurocode 5: Design of timber structures — Part 1-1: General — Common rules and rules for buildings*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

EN 13017-1, *Solid wood panels — Classification by surface appearance — Part 1: Softwood*

oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9e-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

EN 13017-2, *Solid wood panels — Classification by surface appearance — Part 2: Hardwood*

3 Terms and definitions and symbols

3.1 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:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1.1
characteristic values

3.1.1.1
characteristic strength value
population 5-percentile value obtained from the results of tests with a duration of 300 s at an equilibrium moisture content of the test pieces relating to a temperature of 20 °C and a relative humidity of 65 %

oSIST prEN 12369-3:2021

3.1.1.2
characteristic stiffness value
either the population 5-percentile or the mean value obtained of tests with a duration of 300 s at an equilibrium moisture content of the test pieces relating to a temperature of 20 °C and a relative humidity of 65 %

Note 1 to entry: The stiffness values given in the Tables are mean values as these are most commonly used in design. Annex A explains how to calculate the 5-percentile value.

3.1.1.3
characteristic density
population 5-percentile value with mass and volume corresponding to equilibrium moisture content at a temperature of 20 °C and a relative humidity of 65 %

3.1.2
service classes

3.1.2.1
service class 1
class characterized by a moisture content in the materials corresponding to a temperature of 20 °C and the relative humidity of the surrounding air exceeding 65 % only for a few weeks per year

[SOURCE: EN 1995-1-1:2004, 2.3.1.3]

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.1.2.2
service class 2
class characterized by a moisture content in the materials corresponding to a temperature of 20 °C and the relative humidity of the surrounding air exceeding 85 % for a only few weeks per year

oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

[SOURCE: EN 1995-1-1:2004, 2.3.1.3]

3.1.2.3
service class 3
climatic conditions leading to higher moisture contents than in service class 2

[SOURCE: EN 1995-1-1:2004, 2.3.1.3]

3.1.3
load duration class
class characterized by the effect of a constant load acting for a certain period of time in the life of the structure

Note 1 to entry: For a variable action, the appropriate class is determined on the basis of an estimate of the interaction between the typical variation of the load with time and the rheological properties of the materials.

Note 2 to entry: For strength and stiffness calculations, actions are assigned to one of the load-duration classes given in Table 1.

oSIST prEN 12369-3:2021

Table 1 — Load duration classes

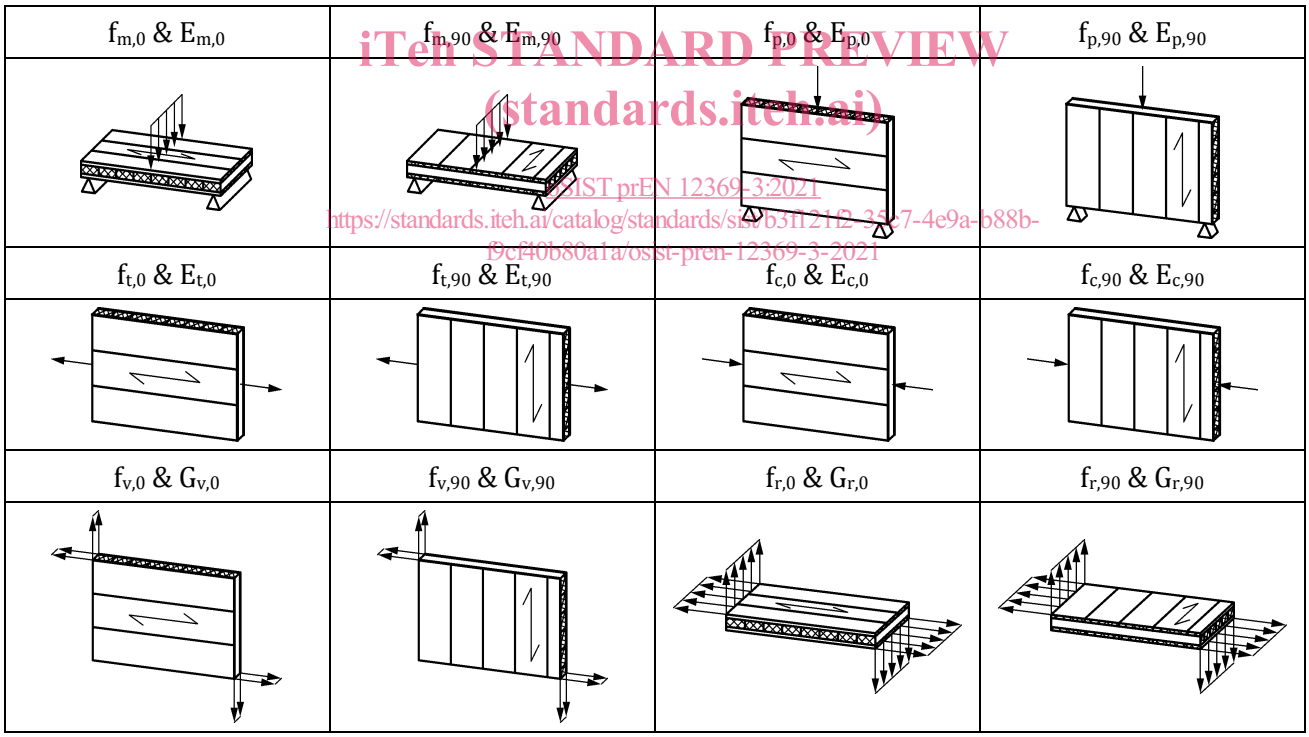
Load duration class	Order of accumulated duration of characteristic load	Examples of loading
Permanent	more than 10 years	self weight
Long-term	6 months to 10 years	storage
Medium-term	1 week to 6 months	imposed load
Short-term	less than one week	snow[a] and wind
Instantaneous	—	accidental load

[a] In areas which have a heavy snow load for a prolonged period to time, part of the load should be regarded as medium-term.

3.2 Symbols

3.2.1 General

The symbols used in the tables are given in 3.2.2 and 3.2.3. The load directions and denomination of strength and stiffness characteristics are shown in Figure 1.



iTeh STANDARD PREVIEW
(standards.iteh.ai)
oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3ff21f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

Figure 1 — Load directions and symbols

oSIST prEN 12369-3:2021

3.2.2 Main symbols

f	Strength
E	Modulus of elasticity (defined as stiffness in EN 1995-1-1)
G	Shear modulus
ρ	Density
k	Modification in strength (k_{mod}) or stiffness (k_{def}) after a period of time relative to initial values. Values are included in EN 1995-1-1.
// or 0	Parallel to the grain direction of the outer layer of SWP
⊥ or 90	Perpendicular to the grain direction of the outer layer of SWP

3.2.3 Subscripts

m	Bending, panel
t	Tension
c	Compression
p	Bending, planar
v	Panel shear
r	Planar shear
nom	Nominal
mod	Modification
def	Deformation

iTeh STANDARD PREVIEW
(standards.iteh.ai)
oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f121f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

4 General

The characteristic values given in this document are the minimum values applicable to products conforming to prEN 13353:2021. These values may be presented in the format as shown in Annex A or similar to it.

Alternatively, characteristic values other than those contained in this document shall be determined using sampling techniques as set out in EN 1058 and testing procedures given in EN 789, and declared in a format as shown in Annex A or similar to it.

Additionally, these characteristic values shall be supported by the following information:

— product description;

— requirement standard;

— service class or classes in which the panel can be used;

— particulars regarding the kind of wood and the appearance class as well as the panel structure.

oSIST prEN 12369-3:2021

5 Characteristic values for solid wood panels

5.1 Introduction

This clause of this document gives information on the characteristic values of both mechanical properties and density for those solid wood panels the values of which, unless specified to the contrary, have been determined using the sampling techniques as set out in EN 1058 and the testing procedures given in EN 789.

The minimum appearance class of the panels shall be class S and class C according to EN 13017-1 and EN 13017-2 respectively.

5.2 Load-bearing panels for use in all service classes

For load-bearing purposes under conditions of service class 1, class 2 and class 3, the characteristic values of the mechanical properties as specified in Table 2 and Table 3 require to be modified (k_{mod}, k_{def}) to EN 1995-1-1 for the service class as well as for the load duration.

In case of single-layer solid wood panels the modification factors of solid wood shall be applied. In case of multi-layer solid wood panels the modification factors of plywood shall be applied.

For chemically or thermally treated wood the k_{mod} and k_{def} factors of EN 1995-1-1 cannot be used. The factors have to be found by testing according to EN 1156.

Table 2 — Characteristic values of single-layer solid-wood panels complying with EN 13353

Nominal thickness mm	**Characteristic density** (kg/m³) **and strength** (N/mm²) **mean stiffness** (N/mm²)		
t_{nom}	**Density** ρ	**Bending perpendicular to the plane of the panel, parallel to the grain direction**	
		f_m	E_m
		0	0
10–55	410	30	11 000

iTeh STANDARD PREVIEW
(standards.iteh.ai)
oSIST prEN 12369-3:2021
https://standards.iteh.ai/catalog/standards/sist/b3f1711f2-35c7-4e9a-b88b-f9cf40b80a1a/osist-pren-12369-3-2021

The 5-percentile value of stiffness should be 0,85 times the mean values given in the table. The characteristic values of strength C24 according to EN 338 apply to the properties for all other characteristic values.