SLOVENSKI STANDARD
SIST EN 1058:2010

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Nadomešča:

SIST EN 1058:1996

Lesne plošče - Ugotavljanje karakterističnih 5-percentilnih vrednosti in karakterističnih srednjih vrednosti

Wood-based panels - Determination of characteristic 5-percentile values and characteristic mean values

Holzwerkstoffe - Bestimmung der charakteristischen 5%-Quantilwerte und der charakteristischen Mittelwerte

Panneaux à base de bois - Détermination des valeurs caractéristiques correspondant au fractile à 5 pour cent d'exclusion inférieure et des valeurs caractéristiques moyennes

Ta slovenski standard je istoveten z: **EN 1058:2009**

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79.060.01	Lesne plošče na splošno	Wood-based panels in general

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EUROPEAN STANDARD

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EN 1058

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English Version

Wood-based panels - Determination of characteristic 5-percentile values and characteristic mean values

Panneaux à base de bois - Détermination des valeurs caractéristiques correspondant au fractile à 5 % d'exclusion et des valeurs caractéristiques moyennes

Holzwerkstoffe - Bestimmung der charakteristischen 5-%-Quantil Werte und charakteristischen Mittelwerte

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Foreword

This document (EN 1058:2009) has been prepared by Technical Committee CEN/TC 112 “Wood-based panels”, 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

This document supersedes EN 1058:1995, the statistical evaluation of which had to be corrected. The statistical evaluation follows the principles of Annex D of EN 1990:2002, of EN 1995-1-1:1993, *Eurocode 5: Design of timber structures – Part 1-1: General – Common rules and rules for buildings*, and of EN 14358:2006, *Timber structures – Calculation of characteristic 5-percentile values and acceptance criteria for a sample*.

Compared to EN 1058:1995 the following modifications have been made:

a) For the determination of strength and stiffness properties for log-normal distributed test data reference is made to EN 14358;

b) The calculation of the 5-percentile characteristic value of log-normal distributed test data according to EN 14358 is described in Annex A and is explained by examples;

c) The calculation of the characteristic mean value (50-percentile value) of normal distributed test data is described in Annex B and is explained by examples.

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 the United Kingdom.

1 Scope

On the basis of test results from wood-based panel products for structural purposes, this European Standard specifies a method for the determination of:

— characteristic 5-percentile values of mechanical properties under the assumption of a log-normal distribution of the test data according to EN 14358; and

— characteristic mean values (50-percentile values) of physical properties under the assumption of a normal distribution of the test data.

Test data should be determined from tests using the test methods outlined in EN 789.

2 Normative references

The following referenced documents are indispensable for the application 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 326-1, *Wood-based panels — Sampling, cutting and inspection — Part 1: Sampling and cutting of test pieces and expression of test results*

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

EN 14358, *Timber structures — Calculation of characteristic 5-percentile values and acceptance criteria for a sample*

3 Terms and definitions

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

3.1
characteristic value
value of a material property which is defined as a fractile of the distribution of that property within the total population of that material

NOTE For all strength properties, this fractile is the fifth percentile. For stiffness properties as well as physical properties, two different characteristic values can be used: the fifth percentile and the mean value.

3.2
panel
piece of wood-based sheet material large enough to permit the cutting of test pieces

3.3
reference population
wood-based panels for which the characteristic values are relevant

3.4
production site
any single production line

3.5
sample
number of panels of one population

NOTE Unless otherwise agreed, the panels of the sample are drawn at random.

3.6
shift
continuous period of production by the same group of workers

NOTE Normally 8 h.

3.7
test piece
piece of panel cut to the size required for testing a specific property

4 Symbols

L Lower specification limit

$\bar{x}_{05}$ Characteristic value of a log-normal distributed property

$\bar{x}_{50}$ Characteristic mean value of a normal distributed property

U Upper specification limit

$v_{\ln \bar{x}}$ Coefficient of variation of a log-normal distributed sample

$v_{\bar{x}}$ Coefficient of variation of a normal distributed sample

5 Reference population

The reference population is in accordance with EN 326-1 defined by parameters such as type and manufacturing process, thickness range, grade, lay-up and quality classification of wood-based panels and is consistent with the material that is or can be supplied commercially and is capable of being identified at all stages of production, supply and in service.

6 Determination of characteristic values of mechanical and physical properties

6.1 Sampling

A total of at least 32 panels of the same type, grade, thickness range and/or lay-up shall be sampled at random from the production sites. Where there are fewer than 32 shifts, the total number of panels shall be obtained by taking a maximum of four panels from each shift at each production site.

Sampling of test pieces from panels shall be in accordance with the procedures given in EN 789.

6.2 Testing

Testing shall be carried out in accordance with either EN 789 (for strength and stiffness properties) or EN 326-1 (for physical properties).

6.3 Analysis of data

6.3.1 General

According to the distribution of the test data, the characteristic values shall be calculated either on the basis of log-normal distribution (in case of strength properties) or normal distribution (in case of physical properties and modulus of elasticity).

If exceptionally, the number of panels is less than 32, the reasons for that have to be declared specifically in the test report.

6.3.2 Strength and stiffness properties

The procedure of calculating the characteristic value $\overline{x}_{05}$ of log-normal distributed test data with known or unknown coefficient of variation $v_{\ln \overline{x}}$ according to EN 14358 is given in Annex A.

6.3.3 Characteristic mean value (50-percentile characteristic value)

The procedure of calculating the estimates of the characteristic mean value ${}_{L}\overline{x}_{50}$ and ${}_{U}\overline{x}_{50}$, respectively, of normal distributed test data with known or unknown coefficient of variation $v_{\overline{x}}$ is given in Annex B.

7 Test report

The test report shall contain the following statements:

a) date and place of sampling;

b) product type sampled;

c) number of panels sampled and their dates of production;

d) method of sampling and calculation;

e) test results of 6.3.2 or 6.3.3, respectively.

Annex A
(informative)

Calculation of the 5-percentile characteristic value of log-normal distributed test data according to EN 14358

A.1 Symbols

A.1.1 Letter symbols

f Strength property, in newtons per square millimetre (N/mm²)

k Statistical factor

$k(n)$ Statistical factor for a population with known coefficient of variation

L Lower specification limit

m_k Characteristic value of log-normal distributed test data

n Number of test results (panel means) of the sample

$s_{\ln \bar{x}}$ Standard deviation between panel means of a log-normal distributed property $\bar{x}_j$

$\bar{x}_j$ Panel mean

$\bar{\bar{x}}$ Grand mean

A.1.2 Indices

$_j$ Test panel serial number ($j = 1.....n$)

$_k$ Characteristic value of a log-normal distributed property

$_L$ Related to lower specification limit

$_s$ Index of the statistical factor for a population with unknown coefficient of variance

$_{\ln \bar{x}}$ Related to log-normal distributed test data

$_{05}$ 5-percentile characteristic value of a log-normal distributed property