BS EN 14358:2016

BSI Standards Publication

Timber structures — Calculation and verification of characteristic values

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National foreword

This British Standard is the UK implementation of EN 14358:2016. It supersedes BS EN 14358:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/518, Structural timber.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Timber structures - Calculation and verification of characteristic values

Structures en bois - Détermination et vérification des valeurs caractéristiques

Holzbauwerke - Berechnung und Kontrolle charakteristischer Werte

This European Standard was approved by CEN on 23 January 2016.

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Full document details: BS EN 14358:2016

Contents

Page

European foreword ... 3
1 Scope ... 4
2 Symbols ... 4
3 Calculation of characteristic properties from test results in the frame of initial type testing ... 5
3.1 General ... 5
3.2 Calculation of 5 and 95 percentiles values ... 5
3.2.1 General ... 5
3.2.2 Parametric calculation ... 5
3.2.3 Non parametric calculation ... 7
3.3 Calculation of characteristic mean values ... 7
4 Calculation of characteristic properties from test results in the frame of internal factory production control ... 9
4.1 General ... 9
4.2 Calculation of characteristic strength, density or resistance properties (5-percentile) ... 9
4.3 Calculation of characteristic stiffness properties (mean values) ... 11
5 Acceptance procedure for verification of a lot ... 12
5.1 General ... 12
5.2 Verification of mean values (e.g. mean modulus of elasticity) ... 12
5.2.1 Method keeping the consumer's risk at 10 % ... 12
5.2.2 Alternative method limiting the sample size for large *COV*s ... 13
5.3 Verification of 5-percentile values (e.g. characteristic strength) ... 13
5.3.1 Method with consumer's risk equal to 10 % ... 13
5.3.2 Alternative method limiting the sample size for large *COV*s ... 14
Bibliography ... 15

Documents
Document Sharing Hub
Full document details: BS EN 14358:2016

European foreword

This document (EN 14358:2016) 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 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

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 supersedes EN 14358:2006.

This document is based on Annex D of EN 1990:2002, *Eurocode – Basis of structural design*.

Compared to EN 14358:2006, the following modifications have been made:

— integration of normal distributions, and non parametric estimation;

— proposals for simplified equations to evaluate correction factors;

— estimation of mean values;

— acceptance procedure for verification of a lot (taken from EN 384: 2010).

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This standard gives statistical methods for the determination of characteristic values from test results on a sample drawn from a clearly defined reference population of e.g. solid wood, fasteners, connectors and wood-based products. The characteristic value is an estimate of the property of the reference population and can be based on a 5-percentile value of strength, resistance or density as well as on a mean value for stiffness.

Parametric methods are given for the determination of lower and upper 5-percentiles. The upper 5-percentile is the 95-percentile.

This standard is suitable for use with any structural product in the frame of type testing as well as factory production control.

Sampling is not covered by this document, but reference is made to the relevant product standards.

This standard also provides the acceptance procedure for verification of a lot.

Depending on the product, characteristic values determined in accordance with this standard may be used directly or may need additional adjustments specified in the relevant product standards.

Note: For example, in the case of solid timber, specific adjustment factors for calculation of characteristic values are given in EN 384.

2 Symbols

$k_s(n)$	Factor used to calculate characteristic properties for initial type testing (see Tables 1 and 2)
$k(n)$	Factor used to calculate characteristic properties for factory production control (see Tables 3 and 4)
m_i	Individual test value *i* of stochastic variable *m*
m_k	5-percentile value of stochastic variable *m*
m_{mean}	Population mean value of stochastic variable *m*
n	Number of test values
s_y	Standard deviation
u_x	x-percentile in the standardised normal distribution
$\bar{y}$	Sample mean value — $y = m$ for normally distributed variable — $y = \ln m$ for logarithmically normally distributed variable
$y_{0.5}$	Sample 5-percentile from the test data
α	Confidence level (%)

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