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Interested committees:

Title: Draft BS ISO 23478 Bamboo structures – Engineered bamboo products – Test methods for determination of physical and mechanical properties.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

DRAFT INTERNATIONAL STANDARD

ISO/DIS 23478

ISO/TC 165

Secretariat: SCC

Voting begins on:
2021-07-01

Voting terminates on:
2021-09-23

Bamboo structures – Engineered bamboo products – Test methods for determination of physical and mechanical properties

ICS: 91.080.20

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 165, *Timber structures*.

Bamboo structures – Engineered bamboo products – Test methods for determination of physical and mechanical properties

1 Scope

This document specifies test methods suitable for determining the following mechanical properties of engineered bamboo products: modulus of elasticity in bending; shear modulus; bending strength; modulus of elasticity in tension parallel to the fibre; tension strength parallel to the fibre; modulus of elasticity in compression parallel to the fibre; compression strength parallel to the fibre; modulus of elasticity in tension perpendicular to the fibre; tension strength perpendicular to the fibre; modulus of elasticity in compression perpendicular to the fibre; compression strength perpendicular to the fibre and shear strength.

In addition, the determination of dimensions, moisture content and density are specified.

This document is applicable to prismatic shapes of glued laminated bamboo and bamboo scrimber members intended to resist flexure, axial loads, or combinations thereof.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO## (ISO/TC296 WG1), and the following 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>

3.1

bamboo culm

single shoot of bamboo comprising the entire unaltered bamboo cross-section, which is usually a hollow cylinder, except at nodes

[SOURCE: ISO/DIS 21625]

3.2

bamboo scrimber

panel or lumber made of compressed bamboo fibre bundle strips or compressed bamboo fibre bundle sheet[SOURCE: ISO/DIS 21625]

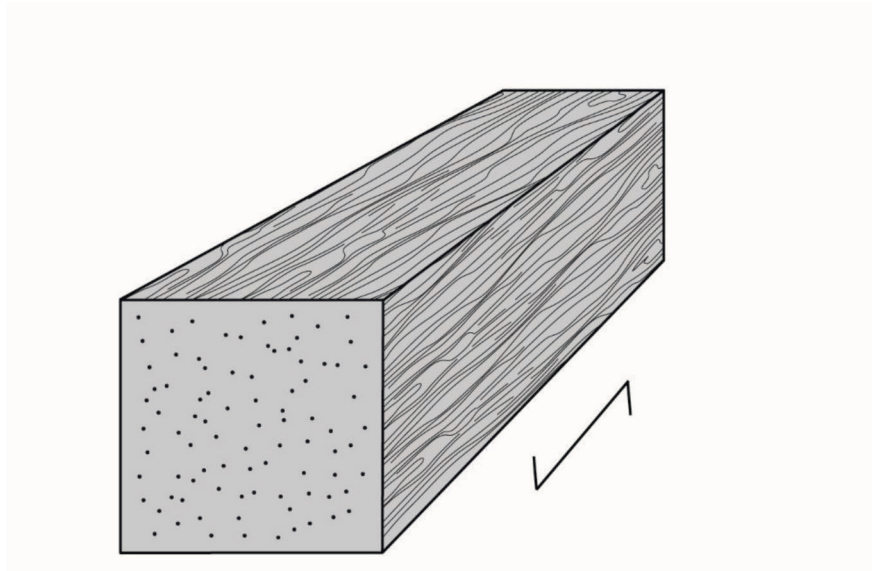


Figure 1 — Example of bamboo scrimber

3.3

bamboo strip

bamboo piece with outer and inner layers intact, made by cutting bamboo culm in longitudinal direction

3.4

bamboo lamina

long, thin and flat bamboo piece with rectangular cross section, processed from bamboo split and with the outer and inner layers being removed

3.5

engineered bamboo member

an assembly of individual elements made of bamboo

3.6

glued laminated bamboo

structural member formed by bonding together bamboo strips with their fibres running essentially parallel

[SOURCE: ISO/DIS 21625]

3.7

traveller specimen

specimen identical to, and stored and conditioned identically to specimens to be tested used to obtain properties whose testing method affects the specimen

Note 1 to entry: Traveller specimens are usually used for determination of moisture content and density

[SOURCE: ISO 22157]

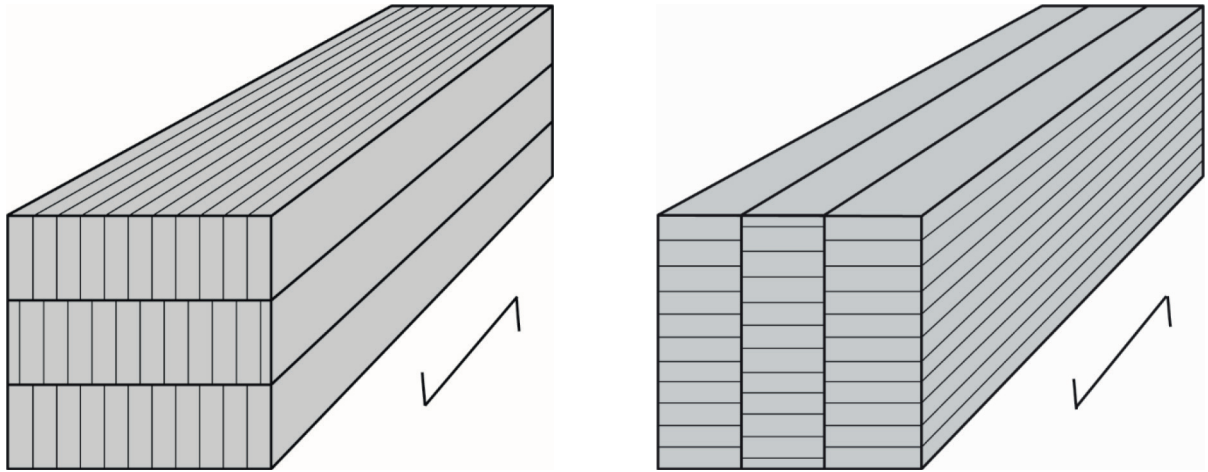


Figure 2 — Example of glued laminated bamboo

4 Symbols and suffixes

4.1 Symbols

A	cross-sectional area, in square millimetres
a	distance between a loading position and the nearest support in a bending test, in millimetres
b	width of cross-section in a bending test, or the smaller dimension of the cross-section, in millimetres
$E_{c,0}$	modulus of elasticity in compression parallel to the fibre, in Newton per square millimetre
$E_{c,90}$	modulus of elasticity in compression perpendicular to the fibre, in Newton per square millimetre
$E_{m,g}$	global modulus of elasticity in bending, in Newton per square millimetre
$E_{m,app}$	apparent modulus of elasticity in bending, in Newton per square millimetre
$E_{t,0}$	modulus of elasticity in tension parallel to the fibre, in Newton per square millimetre
$E_{t,90}$	modulus of elasticity in tension perpendicular to the fibre, in Newton per square millimetre
F	load, in Newtons
$F_{c,90,max}$	maximum compressive load perpendicular to the fibre, in Newtons
$F_{c,90,max,est}$	estimated maximum compressive load perpendicular to the fibre, in Newtons
F_{max}	maximum load, in Newtons
$F_{max,est}$	estimated maximum load, in Newtons
$F_{t,90,max}$	maximum tensile load perpendicular to the fibre, in Newtons
$f_{c,0}$	compressive strength parallel to the fibre, in Newton per square millimetre
$f_{c,90}$	compressive strength perpendicular to the fibre, in Newton per square millimetre