

INTERNATIONAL  
STANDARD

ISO  
23478

First edition  
2022-06

---

---

---

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

*Structures en bambou — Produits en bambou reconstitués —  
Méthodes d'essai pour la détermination des propriétés physiques et  
mécaniques*



Reference number  
ISO 23478:2022(E)

© ISO 2022



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
<b>Foreword</b>	<b>v</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>1</b>
<b>4 Symbols</b>	<b>3</b>
4.1 Symbols	3
<b>5 Determination of dimensions of test specimens</b>	<b>5</b>
<b>6 Determination of moisture content of test specimens</b>	<b>5</b>
6.1 Moisture content by oven-dry method	5
6.1.1 Apparatus	5
6.1.2 Preparation of test pieces	5
6.1.3 Procedure	5
6.1.4 Calculation and expression of results	6
6.2 Moisture content by electrical moisture meter method	6
6.2.1 General	6
6.2.2 Apparatus	6
6.2.3 Procedure	6
6.2.4 Calculation and expression of results	6
6.3 Test report	7
<b>7 Determination of density of test specimens</b>	<b>7</b>
7.1 General	7
7.2 Apparatus	7
7.3 Preparation of test pieces	7
7.4 Procedure	7
7.5 Calculations and expression of results	7
7.6 Test report	8
<b>8 Conditioning of test specimens</b>	<b>8</b>
<b>9 Determination of local (shear-free) modulus of elasticity in bending</b>	<b>8</b>
9.1 Test specimen	8
9.2 Procedure	8
9.3 Expression of results	9
<b>10 Determination of global modulus of elasticity in bending</b>	<b>10</b>
10.1 Test specimen	10
10.2 Procedure	10
10.3 Expression of results	11
<b>11 Determination of shear modulus — Variable span method</b>	<b>12</b>
11.1 General	12
11.2 Test piece	12
11.3 Procedure	12
11.4 Expression of results	13
11.4.1 Determination of $K_1$	13
11.4.2 Shear modulus	13
<b>12 Determination of bending strength</b>	<b>14</b>
12.1 Test specimen	14
12.2 Procedure	14
12.3 Expression of results	15
<b>13 Determination of the strength and modulus of elasticity in tension parallel to the fibre</b>	<b>15</b>
13.1 General	15