

---

---

**Timber structures — Determination  
of characteristic values —**

**Part 5:  
Mechanical connections**

*Structures en bois — Détermination des valeurs caractéristiques —  
Partie 5: Assemblages*



This document is a preview generated by ERS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2018

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  
Fax: +41 22 749 09 47  
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>iv</b>
<b>Introduction</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>2</b>
<b>5 Reference population</b>	<b>2</b>
<b>6 Sampling</b>	<b>2</b>
6.1 Sampling method	2
6.2 Sample size	3
<b>7 Sample conditioning</b>	<b>3</b>
<b>8 Test data</b>	<b>3</b>
8.1 General	3
8.2 Test method	3
8.2.1 Monotonic loading of connections	3
8.2.2 Cyclic loading of connections	4
8.3 Test data compatible with product description	4
8.4 Failure modes	5
<b>9 Evaluation of characteristic values for structural properties</b>	<b>5</b>
9.1 Structural properties	5
9.2 Characteristic initial stiffness of the connection (monotonic loading)	6
9.3 Characteristic stiffness of the connection (cyclic loading)	6
9.4 Characteristic capacity of the connection	6
9.4.1 Characteristic capacity	6
9.4.2 Test load in monotonic tests	6
9.4.3 Test load in cyclic load tests	6
<b>10 Report</b>	<b>7</b>
<b>Annex A (informative) Commentary</b>	<b>9</b>
<b>Bibliography</b>	<b>13</b>

## 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

A list of all parts in the ISO 12122 series can be found on the ISO website.

## Introduction

This document sets out a framework for establishing characteristic values from test results on a sample drawn from a clearly defined reference population of connections. The characteristic value is an estimate of the property of the reference population with a consistent level of confidence prescribed in this document.

This document is intended to be used in conjunction with ISO 12122-1.

This document permits the evaluation of characteristic values from testing on connections made with commercial components.

In some cases, characteristic values determined in accordance with this document may be modified to become a design value.



# Timber structures — Determination of characteristic values —

## Part 5: Mechanical connections

### 1 Scope

This document gives methods of determination of characteristic values for a defined population of mechanical connections between timber components, calculated from full scale test values.

It presents methods for the determination of:

- a) slip modulus of mechanical connections;
- b) characteristic strength of connections subjected to either monotonic or cyclic loads.

Glued connections are excluded from the scope of this document.

NOTE 1 It is assumed that the failure mode is the same for all specimens in the sample.

NOTE 2 When a small number of test results is available, ISO 12122-6 is used for the determination of the mean and the 5<sup>th</sup> percentile values.

NOTE 3 Informative commentary to the clauses of this document can be found in [Annex A](#).

### 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.

ISO 6891, *Timber structures — Joints made with mechanical fasteners — General principles for the determination of strength and deformation characteristics*

ISO 12122-1, *Timber structures — Determination of characteristic values — Part 1: Basic requirements*

ISO 16670, *Timber structures — Joints made with mechanical fasteners — Quasi-static reversed-cyclic test method*

### 3 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/>