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Bamboo — Structural design

Bambou — Conception des structures



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 22156 was prepared by Technical Committee ISO/TC 165, *Timber structures*.

Bamboo — Structural design

1 Scope

This International Standard applies to the use of bamboo structures, i.e. structures made of bamboo (round bamboo, split bamboo, glued laminated bamboo) or bamboo-based panels joined together with adhesives or mechanical fasteners.

This International Standard is based on limit-state design, and on the performance of the structure; see also 7.1. It is only concerned with the requirements for mechanical resistance, serviceability and durability of structures.

Other requirements, e.g. concerning thermal or sound insulation, are not considered. Bamboo used as a composite structure may require additional considerations beyond this International Standard. Execution (work on-site, and fabrication of components off-site, and their erection on-site) is covered to the extent that is necessary to indicate the quality of construction materials and products which should be used and the standard of workmanship on-site needed to comply with the assumptions of the design rules.

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.

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

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

ISO 22157-1, *Bamboo — Determination of physical and mechanical properties — Part 1: Requirements*

3 Terms and definitions

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

3.1

joint

connection between two or more bamboo structural elements

3.2

node

place in a bamboo culm where branches sprout and where a diaphragm is inside the culm