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Timber — Finger joints — Minimum production requirements and testing methods

Bois — Aboutages — Exigences minimales de production et méthodes d'essais

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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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 165, *Timber structures*.

This second edition cancels and replaces the first edition (ISO 10983:1999), which has been technically revised.

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Introduction

This International Standard sets out minimum production and testing requirements for structural finger joints. It includes requirements for documentation of manufacturing and test procedures in a quality manual to ensure ongoing consistent quality. TC 165 is not prepared to recommend the use of finger joints in structural timber components where the manufacturing process is not described by a production facility's quality manual for the following reasons.

a) Structural properties can only be assigned to a finger joint that is clearly defined. Such a definition requires a clear description, within the production facility's quality manual, of the raw material inputs (wood and adhesive), the manufacturing process, and quality assurance procedures.

b) Processes which are not written in a production facility's quality manual and promulgated to the personnel responsible for manufacturing the finger joint are unlikely, over lengthy periods of time, to be manufactured consistently.

Other principles built into the development of this International Standard are as follows.

— This International Standard applies only to the finger-joint production and makes reference only to the maintenance of finger-joint strength. Finger joints are found in both glulam laminations and finger-jointed timber used directly for structural applications. No attempt is made in this International Standard to relate compliance testing to the properties of either glulam or finger-jointed timber.

— Qualification testing is undertaken to establish characteristic strengths and target strengths for compliance (daily quality control) testing. The precise test configurations are not specified in this International Standard, which permits the use of a wide variety of test equipment. However, it is a requirement that the same equipment and configuration used for qualification testing also be used for compliance testing. Both bending and tension tests are provided.

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Timber — Finger joints — Minimum production requirements and testing methods

1 Scope

This International Standard specifies minimum requirements for the manufacture and testing of bonded finger joints in structural wood products such as glued laminated timber, cross-laminated timber, and finger-jointed timber.

Although most finger joints are produced in coniferous species (softwoods), this International Standard also applies to broadleafed species (hardwoods) where information is available to enable them to be satisfactorily bonded.

It does not cover impressed (die-formed) joints and, in the case of laminated timber products, it applies only to individual laminations. Large finger joints in glued laminated timber are not covered by this International Standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20152-1, *Timber structures — Bond performance of adhesives — Part 1: Basic requirements*

3 Terms and definitions

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

3.1
finger joint
end joint formed by machining a number of similar, tapered, symmetrical fingers in the ends of timber members which are then bonded together

3.2
production batch
group of finger joints, all of which have the same profile, are manufactured from the same species of timber, have the same nominal cross section, are bonded with the same adhesive, and are made during a continuous run on one production line

3.3
qualification testing
testing in bending or tension performed to establish the mean and lower 5 % tolerance limit strength with 75 % confidence when the finger joint process is first established

3.4
compliance testing
testing in bending or tension to verify that ongoing production complies with the characteristic and target strengths established during qualification testing

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