
**Timber structures — Dowel-type
fasteners —**

**Part 1:
Determination of yield moment**

*Structures en bois — Éléments de fixation de type cheville —
Partie 1: Détermination du moment plastique*



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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.

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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 10984-1 was prepared by Technical Committee ISO/TC 165, *Timber structures*.

ISO 10984 consists of the following parts, under the general title *Timber structures — Dowel-type fasteners*:

- *Part 1: Determination of yield moment*
- *Part 2: Determination of embedding strength*

Introduction

Dowel-type fasteners are those mechanical fasteners that are most widely used for timber structures. Their characteristics, such as yield moment, have a great effect on the mechanical performance of joints made with dowel-type fasteners under loads.

The purpose of this part of ISO 10984 is to define methods to measure the yield moment of a fastener as one of the basic parameters to interpret the behaviour of joints under loads. The requirements are necessary to replicate the same conditions as those for timber structures in the field. This part of ISO 10984 contains two testing methods: method A, based on EN 409, by applying a four-points loading principle, and method B, based on ASTM F1575, by applying a three-points loading principle. The user can choose whichever method is relevant for the test to measure the yield moment of fasteners.

ISO 10984-2 provides the test method to obtain other basic information on the behaviour of mechanical joints under loads.

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Timber structures — Dowel-type fasteners —

Part 1: Determination of yield moment

1 Scope

This part of ISO 10984 specifies a laboratory method for determining the yield moment of dowel-type fasteners.

2 Terms and definitions

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

2.1

dowel-type fastener

nail, staple, bolt, screw, dowel or the like with plain or patterned surfaces

2.2 Fastener section dimension

2.2.1

fastener section dimension

⟨plain round or profiled fastener⟩ diameter of the shank without coating

2.2.2

fastener section dimension

⟨square fastener⟩ length of one side of the section

2.2.3

fastener section dimension

⟨oval or rectangular fastener⟩ minimum dimension of the section

2.3 Yield moment

2.3.1

yield moment

⟨method A⟩ the bending moment at the maximum load sustained by a dowel-type fastener under test, or the bending moment at which the fastener has deformed through an angle of 45°, whichever is the lesser

2.3.2

yield moment

⟨method B⟩ the bending moment calculated using the load at the intersection of the load and deformation curve with a line represented by the initial tangent modulus offset by 5 % of the fastener diameter