

Australian/New Zealand Standard™

**Timber structures—Dowel-type
fasteners**

Part 1: Determination of yield moment



AS/NZS ISO 10984.1:2015

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TM-010, Timber Structures and Framing. It was approved on behalf of the Council of Standards Australia on 24 July 2015 and on behalf of the Council of Standards New Zealand on 21 July 2015.

This Standard was published on 20 August 2015.

The following are represented on Committee TM-010:

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First published as AS/NZS ISO 10984.1:2015.

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ISBN 978 1 76035 214 1

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-010, Timber Structures and Framing.

The objective of this Standard is to provide a standardized test method to obtain material characteristics which can be used to estimate the behaviour of laterally loaded timber joints. These material characteristics will facilitate the future adoption of internationally accepted timber joint design methodology, referred to as the 'European Yield Model'. The 'European Yield Model' is not included in current Australian/New Zealand timber design codes, however future revisions may enable its inclusion.

This Standard contains two testing methods—

- (a) method A, based on EN 409, by applying a four-points loading principle; and
- (b) method B, by applying a three-points loading principle, based on ASTM F1575.

The method recommended for use in Australia and New Zealand is method A.

The testing of complete timber joints is not covered by this Standard. This Standard is to be read in conjunction with ISO 6891:1983, *Timber structures—Joints made with mechanical fasteners—General principles for the determination of strength and deformation characteristics*, and AS 1649—2001, *Timber—Methods of test for mechanical fasteners and connectors—Basic working loads and characteristic strengths*.

This Standard is identical with, and has been reproduced from ISO 10984-1:2009, *Timber structures—Dowel-type fasteners, Part 1: Determination of yield moment*.

As this Standard is reproduced from an International Standard, the following applies:

- (i) In the source text 'this part of ISO 10984' should read 'this Australian/New Zealand Standard'.
- (ii) A full point substitutes for a comma when referring to a decimal marker.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

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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.

AUSTRALIAN/NEW ZEALAND STANDARD

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