

Australian/New Zealand Standard™

Timber—Assessment of drying quality



AS/NZS 4787:2001

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TM-007, Sawn, Milled and Speciality Timber Products. It was approved on behalf of the Council of Standards Australia on 16 March 2001 and on behalf of the Council of Standards New Zealand on 4 May 2001. It was published on 5 May 2001.

The following interests are represented on Committee TM-007:

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Australian Conservation Foundation
Australian Timber Importers Federation
Construction Information Systems Australia
Consumers Federation of Australia
CSIRO Forestry and Forest Products
Department of Conservation and Land Management Western Australia
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New Zealand Timber Suppliers Group
Pine Australia Limited
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Timber Promotion Council
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Additional interests participating in the preparation of this Standard:

Australian Timber Drying Group

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION
OF
AS/NZS 4787:2001
Timber—Assessment of drying quality

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Technical Committee TM-012 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-007, Sawn Milled and Speciality Timber Products.

The objective of this Standard is to provide producers, suppliers and purchasers of seasoned solid wood products with means for assessing and specifying the moisture content and other drying quality criteria of such products.

This Standard is intended for use in special orders. The methods given may be used for other purposes, if required, such as production control for general production.

A high proportion of timber being traded, processed and used at the present is either kiln dried or air-seasoned. Automated processing, and the need to achieve a high level of dimensional stability in the final product, demand that predefined moisture content in dried timber is met.

This Standard was developed with the close cooperation of representatives of the New Zealand and Australian timber processing industries and research organizations, and is based on European Union Pilot Standard: *EDG—Recommendation, Assessment of drying quality of timber*.

The Standard has been developed to facilitate the specification of both drying quality and the assessment of drying quality of kiln-dried and air-seasoned sawn timber.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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1 SCOPE

This Standard sets out procedures for specifying the moisture content and other drying quality criteria of seasoned solid wood products and is primarily intended for use by processors, merchants and users, to assess the drying quality of a pack, stack or charge of dry timber. It describes drying quality classes and gives sampling methods for testing products to establish compliance.

This Standard is for use with softwood or hardwood boards up to 80 mm in thickness, where the moisture contents of boards in a quantity exhibit a single skewed distribution. (At the end of drying there is usually variability in the between-board moisture content distribution with a longer tail above than below the most common moisture content value.)

Where such a single skewed distribution does not exist, then this Standard may be used, provided upper or upper and lower cut-off limits are set.

NOTES:

- 1 It is intended that the Standard provide a uniform methodology for the assessment of drying quality for the timber industry. For example, processors may use the Standard to define procedures for quality assessment of dried timber as part of process quality control documentation, or to detail product quality specifications in supply agreements with merchants or users.
- 2 Where the Standard is used beyond a drying facility, caution is recommended, due to the following reasons:
 - (a) Consignments of timber may comprise a mix of timber from different sources or charges, and the distribution of moisture content may not conform to assumptions made in developing the sampling regime.
 - (b) Timber may be subjected to other influences causing higher moisture content in some materials, e.g. inadequate weather protection, leading to non-conforming distributions of moisture content.

In the above two cases the sampling procedure outlined in this Standard may not be adequate.

- 3 Some specifiers may nominate absolute limits.

2 APPLICATION

The specifications and classifications detailed in this Standard shall not be used for timber with target moisture contents above 20%.

For timber specified in accordance with this Standard, assessment shall be carried out in accordance with the sampling, testing and evaluation procedures described herein.

The quality specifications and quality control methods detailed herein are only intended to bind contractual parties when a specific contract refers to this Standard and when the target moisture content (MC_t) and drying quality have been specified in terms of a drying quality class (see Clauses 5 and 6).

Suggested drying quality criteria that may be important to various product types are given in Appendix A.

Methods of evaluation are provided in Appendix B.

AS/NZS 1080.1 documents methods of moisture content testing using electrical resistance moisture meters and oven drying. It also provides guidance for the correct calibration and maintenance of electrical resistance meters. It should be referred to when the measurement of moisture content is required.

The oven-dry test method in AS/NZS 1080.1 is considered to have greater accuracy than electrical resistance moisture meters. It may be used should a dispute arise over the method of moisture content measurement.

NOTE: When other means of testing the moisture content of kiln-dried material is used, care should be taken to ensure that control of the drying process is equivalent to or better than that which would be achieved using the methods given in this Standard (see Appendix C).

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS

1080 Timber—Methods of test

1080.1 Part 1: Moisture content

4491 Timber—Glossary of terms in timber related standards

4 DEFINITIONS

For the purpose of this Standard, the definitions given in AS/NZS 4491 and those below apply. Where the definitions given in AS/NZS 4491 differ from those given in this Standard, for the purposes of this Standard, the definitions given in this Standard apply.

4.1 Charge

Total quantity of timber dried as a batch in a kiln.

4.2 Consignment

A quantity of timber, usually in pack or packet form, that is being sold.

NOTE: A consignment may contain one or a number of packs or packets that are of different cross-sections and grades.

4.3 Mean (average) moisture content ($MC_{1/3}$)

The moisture content at a board cross-section. $MC_{1/3}$ relates to the moisture content measured by a resistance moisture meter, with insulated pins at one third of the thickness of the piece.

4.4 Moisture content, equilibrium

The moisture content at which timber neither gains nor loses moisture when subjected to stable conditions of humidity and temperature.

4.5 Moisture content, target (MC_t)

The desired moisture content of all boards in a pack, stack or charge, after the drying process.

4.6 Moisture gradient ($MC_{1/2} - MC_{1/6}$)

Variations in moisture content within the cross-section (i.e. between the core and the case); ' $MC_{1/2}$ ' relates to the moisture content measured by a resistance moisture meter with insulated pins at one half of the thickness of the piece and is a measurement of the core moisture content, while ' $MC_{1/6}$ ' relates to the moisture content measured by a resistance moisture meter with insulated pins at one sixth of the thickness of the piece and is a measurement of the case moisture content.