AS 1604.1—2010

Australian Standard®

Specification for preservative treatment

Part 1: Sawn and round timber

This Australian Standard® was prepared by Committee TM-006, Timber Preservation and Durability. It was approved on behalf of the Council of Standards Australia on 15 September 2010.
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The following are represented on Committee TM-006:

- A3P
- Australian Pesticides and Veterinary Medicines Authority
- CSIRO, Materials Science and Engineering
- Department of Building and Housing (New Zealand)
- Department of Primary Industries and Fisheries Queensland
- Engineered Wood Products Association of Australasia
- Engineers Australia
- Forests New South Wales
- Glued Laminated Timber Association of Australia
- New Zealand Chemical Industry Council
- New Zealand Pine Manufacturers Association
- New Zealand Timber Industry Federation
- New Zealand Timber Preservation Council
- Timber Preservers Association of Australia
- Timber Queensland
- Wood Processors Association

Additional Interests:

- Dr Harry Greaves

This Standard was issued in draft form for comment as DR AS 1604.1.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Part 1: Sawn and round timber

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee TM-006, Timber Preservation and Durability, to supersede AS 1604.1—2005.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify requirements for preservative-treated sawn and round timber for protection against decay, insect, or marine borer attack.

The objectives of this revision are to—

(a) amend the composition of copper quat preservatives to include both alkaline copper and micronized copper systems;

(b) include imidacloprid for H2 envelope treatment of framing timber, and new requirements for lyctid-susceptible sapwood for hazard class H2 exposure conditions;

(c) include zinc borate in Appendix B; and

(d) amend Appendix C, including Figure C1.

This Standard is part of a series that covers specifications for preservative treatment of timber products, as follows:

AS 1604	Specification for preservative treatment
AS 1604.1	Part 1: Sawn and round timber (this Standard)
AS/NZS 1604	Specification for preservative treatment
AS/NZS 1604.2	Part 2: Reconstituted wood-based products
AS/NZS 1604.3	Part 3: Plywood
AS/NZS 1604.4	Part 4: Laminated veneer lumber (LVL)
AS/NZS 1604.5	Part 5: Glued laminated timber products

This Standard does not specify the methods of preservative treatment that may be adopted to achieve the specified penetrations and retentions. Where the user is uncertain of the appropriate preservative treatment, additional information may be obtained from organizations such as state and territory forestry authorities, and the CSIRO Forestry and Forest Products.

Preservatives not covered in this edition, and which may have general application, should be brought to the attention of Standards Australia for consideration for inclusion in future editions.

WARNING: Important Safety Notice

Improper use of the preservative chemicals and treated products may be hazardous. All individuals involved in the production or testing of treated products should be familiar with the relevant material safety data sheets.

Consumer information sheets dealing with the appropriate use and handling of treated products should be provided as point-of-sale literature.

Treated timber should not be used for food preparation surfaces nor in storage units or containers where the foodstuffs will be in direct contact with the treated timber surface.

Statements expressed in mandatory terms in notes to tables are deemed to be an integral part of this Standard.

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.

CONTENTS

Page

APPENDICES

FOREWORD

The purpose of preservation is to extend the life of timber by protecting it from decay and insect or marine borer attack. This increases the range for the end application of timber and renders it a more useful and dependable material for construction, building and engineering purposes.

The service life of timber depends on a variety of factors. These include the natural durability of the timber species commercially available, as described in AS 5604, *Timber—Natural durability ratings*, the degree of preservative treatment, and the range of hazards and type of environment anticipated during the service life of the timber. In addition, the severity of exposure can be reduced by alternative design. Regular inspection and maintenance procedures will assist to minimize the effects of exposure.

In all conditions of use, the untreated sapwood of any timber species can be considered to be non-durable, as it is susceptible to degradation by insects or fungi, or both. Sapwood can be made as durable as the heartwood of most of the naturally durable species by correct preservative treatment. Service life may depend upon the wood having been ripped, crosscut, shaped, bored, machined or having had any such operations or processes carried out after preservative treatment. Where subsequent machining is unavoidable, supplementary protection should be applied to the cut surface; however, this protection cannot be expected to be as effective as the original recommended treatment.

References in this Standard to the penetration of heartwood with preservatives represent the minimum specification requirements for the several hazard conditions.

Designers and users should satisfy themselves, through appropriate sampling and testing, that the preservative in any structural timber complies with the specifications in this Standard.

STANDARDS AUSTRALIA

Australian Standard
Specification for preservative treatment

Part 1: Sawn and round timber

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for preservative treatment for sawn and round timber that is required to be protected against decay, insect, or marine borer attack for all exposure conditions throughout Australia.

This Standard does not cover grade or seasoning condition, or the effects of mechanical degradation, including weathering.

The preservatives referred to in this Standard are intended for application only in approved industrial treatment plants as defined in AS/NZS 2843 series.

1.2 APPLICATION

This Standard, in conjunction with the AS/NZS 1605 series, is intended for application in hazard classes H1 to H6 throughout Australia.

The following methods specify the preservative penetration of heartwood for the protection of sawn timber to be used in hazard classes H2, H3, H4, H5 and H6:

(a) *Envelope treatment* A continuous unbroken envelope of preservative around the piece of sawn timber to the depth specified for each hazard class (see also Clause 1.4.2 and Table H2.1).

(b) *Limiting unpenetrated heartwood* Restricting the amount of unpenetrated heartwood in the cross-section to the extent specified for hazard classes H2 to H6.

NOTES:

1 In Queensland the *Timber Utilization and Marketing Act 1987* and in New South Wales the *Timber Marketing Act 1977* require approval of a preservative treatment and registration of a brand before timber, offered for sale in either of these states, can be described as preservative-treated. Detailed information about the requirements of such legislation may be obtained from the state government agencies concerned.

2 Where timber is to be treated to comply with the requirements of this Standard, timber treaters should select suitable timber material to ensure that either—

(a) the heartwood can be penetrated to the depth required for each hazard class; or

(b) where the heartwood cannot be penetrated to the required depth, the unpenetrated heartwood should not exceed the cross-sectional limits set for the required hazard class.

3 Where a timber species' treatment properties are not known, trial samples placed into a normal charge should give indications of the timber's treatability. These indications should serve as a guide for the treater. The following references set down the treatment properties of some well-known commercial timbers of the world:

(a) EN 350-2 (see Bibliography).

(b) Keating WG, Bolza E, *Characteristics, properties and uses of timber*, Vol. 1, S.E. Asia, Northern Australia and the Pacific, INKATA PRESS Melbourne, 1982.