

Australian/New Zealand Standard™

**Methods for sampling and analysing
timber preservatives and preservative-
treated timber**

**Part 2: Determination of preservative
penetration by spot test**



AS/NZS 1605.2:2018

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TM-012, Timber Grading and Preservation. It was approved on behalf of the Council of Standards Australia on 22 December 2017 and by the New Zealand Standards Approval Board on 5 March 2018.

This Standard was published on 22 March 2018.

The following are represented on Committee TM-012:

Australian and New Zealand Timber Preservative Manufacturers Association
Australian Forest Products Association
Australian Pesticides and Veterinary Medicines Authority
Australian Timber Flooring Association
Australian Timber Importers Federation
Building Research Association of New Zealand
Department of Agriculture, Fisheries and Forestry, Qld
Engineered Wood Products Association of Australasia
Forest and Wood Products Australia
Forestry Corporation of NSW
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This Standard was issued in draft form for comment as DR AS/NZS 1605.2:2017.

Australian/New Zealand Standard™

Methods for sampling and analysing timber preservatives and preservative- treated timber

Part 2: Determination of preservative penetration by spot test

Originated in Australia as AS 1605—1974.
AS 1605—1974 jointly revised and designated AS/NZS 1605:1998.
AS/NZS 1605:2000 revised and redesignated, in part, AS/NZS 1605.2:2006.
Second edition 2018.

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Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6140.

ISBN 978 1 76035 983 6

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-012, Timber Grading and Preservation, to supersede AS/NZS 1605.2:2006.

The objective of this Standard is to set out a series of methods for sampling and analysing timber preservatives and preservative-treated timber.

This objective of this revision is to—

- (a) introduce a method for determination of zinc penetration in timber treated with zinc-containing preservatives; and
- (b) introduce the PAN indicator for spot testing of copper in timber treated with copper-containing preservatives.

This Standard is part of a series of Standards that cover the sampling and analysing of timber preservatives and preservative-treated timber as follows:

AS/NZS

1605	Methods for sampling and analysing timber preservatives and preservative-treated timber
1605.1	Part 1: General requirements, sampling, and determination of sapwood and heartwood presence
1605.2	Part 2: Determination of preservative penetration by spot tests (this Standard)
1605.3	Part 3: Analysis methods for determination of preservative retention
1605.4	Part 4: Analysis methods for determination of preservative solution concentration

This Standard is intended to be read in conjunction with AS/NZS 1605.1 and the AS/NZS 1604 series, NZS 3640 or the relevant Standard to which timber is claimed to have been treated. The preservatives incorporated in the AS/NZS 1604 series are required to be accompanied by analytical methods for their determination, which are incorporated in the AS/NZS 1605 series.

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Australian/New Zealand Standard**Methods for sampling and analysing timber preservatives and preservative-treated timber****Part 2: Determination of preservative penetration by spot test**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out the method for determining the penetration of preservative into preservative-treated wood products. It deals with the preparation of material for testing and the methods for determining the penetration of creosote, boron, copper in copper-based preservatives, pentachlorophenol, tin, zinc and fluorine.

1.2 APPLICATION

This Standard should be read in conjunction with—

- (a) the AS/NZS 1604 series, NZS 3640 or the relevant Standard to which timber is claimed to have been treated; and
- (b) AS/NZS 1605.1.

Methods for sampling and analysing timber preservatives and preservative-treated timber are categorized into the following parts of the AS/NZS 1605 series, according to the general nature of the tests:

- (i) Sampling preservative liquids and preservative-treated timber Part 1.
- (ii) Determination of the presence of sapwood and heartwood Part 1.
- (iii) Determination of preservative penetration by spot tests..... Part 2.
- (iv) Analysis of preservative retention..... Part 3.
- (v) Analysis of preservative solution concentration Part 4.

1.3 REFERENCED AND RELATED DOCUMENTS**1.3.1 Referenced documents**

The following documents are referred to in this Standard:

AS/NZS

1604	Specification for preservative treatment (all parts)
1605	Methods for sampling and analysing timber preservatives and preservative-treated timber
1605.1	Part 1: General requirements, sampling, and determination of sapwood and heartwood presence
1605.3	Part 3: Analysis methods for determination of preservative retention
1605.4	Part 4: Analysis methods for determination of preservative solution concentration
4491	Timber—Glossary of terms in timber-related Standards

NZS
3640 Chemical preservation of round and sawn timber

1.3.2 Related document

Attention is drawn to the following related document:

Kerner, G. Colour reactions for the detection and determination of the depth of penetration of preservatives in wood. *Holzindustrie*. 1969, vol. 22, no. 9, pp. 275–278.

1.4 DEFINITIONS

Refer to AS/NZS 1605.1 for applicable definitions.

1.5 PREPARATION OF TEST PIECES FROM TEST SPECIMEN

One test piece shall be cut from each test specimen, which has been prepared in accordance with AS/NZS 1605.1.

Test pieces shall be prepared to enable examination of the full cross section of the test specimen and so that contamination of the freshly prepared surface is minimized.

WARNING: WHERE TEST PIECES HAVE A ROUGH SURFACE, IT IS UNLIKELY THAT AN ACCURATE ASSESSMENT OF PRESERVATIVE PENETRATION CAN BE MADE. BETTER TEST RESULTS WILL BE OBTAINED WHEN THE SURFACE BEING TESTED IS DRIED AND THEN SANDED SMOOTH, OR CUT WITH A FINE-TOOTHED SAW.

1.6 RECOGNITION OF PENETRATION

1.6.1 Method of recognition

The depth and pattern of preservative shall be identified either visually or by the appropriate colorimetric test.

NOTE: For analytical methods, see AS/NZS 1605.3, Clause 1.6.

1.6.2 Colorimetric test interference

In some instances, naturally occurring substances may interfere with colorimetric tests. In such cases, analytical methods shall be used.

1.7 EVALUATION OF PENETRATION

1.7.1 Distribution of preservative

Where a colorimetric test is available, the penetration pattern as described in AS/NZS1604 series or NZS3640 shall apply.

For sawn and round timber, where the distribution is not considered to be continuous over the penetration zone for a given hazard, or for veneers treated prior to gluing where there is no evidence of preservative penetration in the penetration zone, the sample will be deemed to have failed the penetration requirements of the AS/NZS 1604 series, NZS 3640 or the relevant Standard. Chemical tests for retention compliance with the AS/NZS 1604 series, NZS 3640 or the relevant Standard need not be carried out.

1.7.2 Interpretation of penetration tests

Preservative penetration tests will only indicate the location of one or more of the preservative components. No inference can be made as to whether or not the test piece passes the retention requirements of the AS/NZS 1604 series, NZS 3640 or the relevant Standard.