AS/NZS 4364:2010

Australian/New Zealand Standard™

Timber—Bond performance of structural adhesives

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TM-004, Glued Laminated Timber Products. It was approved on behalf of the Council of Standards Australia on 27 October 2010 and on behalf of the Council of Standards New Zealand on 29 October 2010.
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The following are represented on Committee TM-004:

A3P
BRANZ
CSIRO
Decorative Wood Veneers Association
Engineered Wood Products Association of Australasia
Forest Industries Association of Tasmania
Forests New South Wales
Glued Laminated Timber Association of Australia
Institution of Professional Engineers New Zealand
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Additional Interests:

Prof Bob Milner

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PREFACE

This Australian/New Zealand Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-004, Glued Laminated Timber Products, to supersede AS/NZS 4364:1996, *Adhesives, phenolic and aminoplastic for load-bearing timber structures—Classification and performance requirements,* and AS/NZS 4364(Int):2007.

The objective of this Australian/New Zealand Standard is to provide requirements for bond performance of adhesives formed in structural finger-jointed timber and glulam products. It is largely based on the Canadian Standards Association document CSA O112.9, *Evaluation of adhesives for structural wood products (exterior exposure)*. Alternative requirements, taken from the European Standards, are also included.

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.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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FOREWORD

This Australian/New Zealand Standard focuses on bondline performance and is directed principally at the evaluation of wood adhesives. When used in this manner the tests and assessments are made against standardized wood species. It is expected that product Standards (e.g., for glulam, laminated veneer lumber, etc.) would insist that selected requirements be met in the establishment of a new production line or the introduction of a new product, new adhesive, new species, etc., on an existing production line as part of qualification procedures.

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Australian/New Zealand Standard
Timber—Bond performance of structural adhesives

1 SCOPE

This Australian/New Zealand Standard specifies performance requirements for adhesives according to their suitability for use in prefabricated timber components for structural use in defined environmental conditions and for such adhesives for the manufacture of structural finger-jointed timber and glulam.

NOTE: This Australian/New Zealand Standard does not cover the performance requirements for adhesive bonds between structural timber components in plywood, LVL, and wood-based panel products; however, the adhesive bond requirements may be applicable to these products.

2 APPLICATION

This Australian/New Zealand Standard is intended to be used primarily by adhesive manufacturers.

The requirements of the adhesive bond are based on the performance of the adhesive as measured by the following properties:

(a) Resistance to biological degradation .....Clause 6.4.

(b) pH of cured adhesive film .....Clause 6.5.

(c) Resistance to shear in the dry and wet states by compression loading .....Clause 6.6.

(d) Hydro-mechanical response or resistance to delamination during exposure to wetting and drying .....Clause 6.7.

(e) Resistance to creep under static shear loading during exposure to high humidity, heat and combined heat and moisture .....Clause 6.8.

Either Method A or Method B shall be chosen for testing resistance to shear, resistance to delamination, and resistance to creep (Section 7). There shall be no mixing of Methods A and B (for example, Method A for shear resistance and Method B for delamination) nor shall retesting of the same adhesive be permitted once the choice of the test method family (A or B) is made.

NOTES:

1 In the case of resistance to shear in the dry and wet states, resistance to delamination during exposure to wetting and drying, and resistance to creep static shear loading during exposure to high humidity, heat and combined heat and moisture, two alternative requirements are provided. Method A is based on CSA O112.9 and Method B is based on EN test methods (see Clause 3).

2 The current product Standards refer to Type I and II adhesives, which prescribe requirements for use in Service Classes 1, 2, 3, as defined in Table 6.1.1.

3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

AS/NZS
1080 Timber—Methods of test
1080.1 Method 1: Moisture content
1080.3 Method 3: Density

4491 Timber—Glossary of terms in timber-related Standards