

AS/NZS 4357.0:2022



Australian/New Zealand Standard™

# Structural laminated veneer lumber

Part 0: Specifications



AS/NZS 4357.0:2022

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- Australian Wood Panels Association
- Building Research Association of New Zealand
- Engineered Wood Products Association of Australasia
- Forest and Wood Products Australia
- Glued Laminated Timber Association of Australia
- New Zealand Plywood Manufacturers Association
- New Zealand Timber Industry Federation
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## Part 0: Specifications

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## Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-011, Engineered Timber Products, to supersede AS/NZS 4357.0:2005.

The objective of this document is to specify requirements for the manufacture, structural characterization, and structural verification of laminated veneer lumber (LVL) intended for structural applications.

The objective of this revision is to reflect the advances in the industry and developments in manufacturing and utilization technologies.

This revision includes the removal of normalization of the statistical evaluation of strength properties to align with current characteristic properties evaluation methods and national design standards.

This document, written in performance terms, seeks to ensure reliability and predictability of performance in all aspects, by requiring the following:

- (a) Manufacture of structural LVL to a specification that identifies and sets limits upon all controlling process variables.
- (b) Testing and evaluation of in-grade manufactured structural LVL in order to derive reliable engineering design properties.
- (c) Continuous monitoring of the mechanical properties of structural LVL as it is produced, in order to verify and validate continued use of stated design properties.

A list of all parts in the AS/NZS 4357 series can be found in the Standards Australia online catalogue.

The terms “normative” and “informative” are used in Standards to define the application of the appendices 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

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| <b>Preface</b>                                                               | <b>ii</b> |
| <b>Introduction</b>                                                          | <b>v</b>  |
| <b>Section 1 Scope and general</b>                                           | <b>1</b>  |
| 1.1 Scope                                                                    | 1         |
| 1.2 Normative references                                                     | 1         |
| 1.3 Terms and definitions                                                    | 1         |
| 1.4 Dimensions and shape                                                     | 2         |
| 1.4.1 Dimensions                                                             | 2         |
| 1.4.2 Straightness                                                           | 3         |
| 1.4.3 Twist                                                                  | 3         |
| 1.4.4 Squareness of section                                                  | 3         |
| 1.4.5 Cupping                                                                | 3         |
| 1.5 Moisture content                                                         | 3         |
| 1.6 Preservative and chemical treatments                                     | 4         |
| 1.6.1 Preservative treatment of lyctid-susceptible sapwood                   | 4         |
| 1.7 Publication of characteristic properties or data                         | 4         |
| 1.8 Branding                                                                 | 4         |
| <b>Section 2 Manufacture</b>                                                 | <b>5</b>  |
| 2.1 General                                                                  | 5         |
| 2.2 Manufacturing specification                                              | 5         |
| 2.3 Veneer                                                                   | 5         |
| 2.3.1 General                                                                | 5         |
| 2.3.2 Veneer quality                                                         | 5         |
| 2.3.3 Veneer thickness                                                       | 6         |
| 2.3.4 Veneer length                                                          | 6         |
| 2.4 Assembly                                                                 | 6         |
| 2.4.1 General                                                                | 6         |
| 2.4.2 Construction                                                           | 6         |
| 2.4.3 Veneer joints                                                          | 6         |
| 2.5 Bonding between veneers                                                  | 7         |
| 2.6 Manufacturing process                                                    | 7         |
| 2.7 Formaldehyde                                                             | 7         |
| 2.7.1 Test method                                                            | 7         |
| 2.7.2 Formaldehyde emission classes                                          | 7         |
| 2.8 Storage and handling                                                     | 7         |
| <b>Section 3 Structural properties</b>                                       | <b>8</b>  |
| 3.1 General                                                                  | 8         |
| 3.2 Properties required to be determined                                     | 8         |
| 3.2.1 General                                                                | 8         |
| 3.2.2 Characteristic values for shear                                        | 10        |
| 3.3 Methods for determination of structural properties                       | 10        |
| 3.3.1 Strength and stiffness                                                 | 10        |
| 3.3.2 Joint strength                                                         | 10        |
| 3.4 Adoption of F-grade                                                      | 11        |
| 3.5 Adoption of joint group for nails, screws and bolts                      | 11        |
| 3.6 Adoption of characteristic density for use with the European Yield Model | 11        |
| 3.7 Structural design                                                        | 11        |
| 3.7.1 General                                                                | 11        |
| 3.7.2 Section properties                                                     | 12        |
| 3.7.3 Longitudinal sawing or machining to reduce thickness                   | 12        |
| 3.7.4 Taper or curve cut LVL                                                 | 12        |
| <b>Section 4 Structural verification</b>                                     | <b>13</b> |
| 4.1 General                                                                  | 13        |

4.2 Continuous validation of structural properties..... 13

4.3 Re-evaluation of structural properties ..... 13

**Appendix A (informative) Storage and handling of structural LVL..... 14**

**Appendix B (informative) Example procedures for continuous acceptance criteria of structural properties for LVL based on testing of bending stiffness and strength ..... 15**

**Bibliography ..... 19**

## Introduction

LVL is an internationally used generic descriptor for an assembly of veneers laminated with adhesive, in which the grain direction of the outer veneers and most other veneers is in the longitudinal direction.

LVL is used for a wide variety of purposes, including structural and non-structural applications as follows:

- (a) Structural applications include continuous length LVL as beams and columns for houses, wide span buildings and bridges; formwork; truss chords; I-beam flanges; short length LVL jointed together with nail plates to form beams; scaffold planks and structural decking or soffits, usually incorporating two or more cross-band veneers for stability.
- (b) Non-structural applications include joinery, furniture and fitments where appearance or machining qualities, or both, are important but structural reliability and bond durability are relatively less important. LVL for these applications is sometimes curve-formed or covered with decorative overlays, or encased in other materials.

This document sets requirements for structural LVL. Appearance requirements for structural LVL are not specified. Only phenolic, Type A bonds are included on the basis that, currently, only that bond type has known long-term durability, suitable for structural applications.

This document is only concerned with the LVL component of assemblies such as trusses, nail plate jointed beams and I-beams, but not the assemblies themselves.

## NOTES

# Australian/New Zealand Standard

## Structural laminated veneer lumber

### Part 0: Specifications

#### Section 1 Scope and general

##### 1.1 Scope

This document specifies manufacturing, in-grade structural characterization and structural verification requirements for structural laminated veneer lumber (LVL) as a continuously glued assembly of veneers and for which structural design is performed in accordance with AS 1720.1 or NZS 3603. This document does not attempt to describe requirements for LVL intended for non-structural uses.

Design information specific to structural LVL is included in AS 1720.1.

##### 1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1649, *Timber—Methods of test for mechanical fasteners and connectors—Basic working loads and characteristic strengths*

AS 1720.1, *Timber structures, Part 1: Design methods*

AS/NZS 2098.1, *Methods of test for veneer and plywood, Method 1: Moisture content of veneer and plywood*

AS/NZS 2098.2, *Methods of test for veneer and plywood, Method 2: Bond quality of plywood (chisel test)*

AS/NZS 2269.0, *Plywood—Structural, Part 0: Specifications*

AS/NZS 2754.1, *Adhesives for timber and timber products, Part 1: Adhesives for manufacture of plywood and laminated veneer lumber (LVL)*

AS/NZS 4063.1, *Characterization of structural timber, Part 1: Test methods*

AS/NZS 4063.2, *Characterization of structural timber, Part 2: Determination of characteristic values*

AS/NZS 4357.1, *Structural laminated veneer lumber, Part 1: Method of test for measurement of dimensions and shape*

AS/NZS 4357.2, *Structural laminated veneer lumber (LVL), Part 2: Determination of structural properties—Test methods*

AS/NZS 4357.4, *Structural laminated veneer lumber, Part 4: Determination of formaldehyde emission*

AS/NZS 4491, *Timber—Glossary of terms in timber-related Standards*

NZS 3603, *Timber Structures Standard*

ISO 10984-2, *Timber structures — Dowel-type fasteners, Part 2: Determination of embedding strength*

##### 1.3 Terms and definitions

For the purposes of this document, the definitions given in AS/NZS 4491 and those below apply.