

Australian/New Zealand Standard™

Structural laminated veneer lumber

Part 0: Specifications



AS/NZS 4357.0:2005

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TM-008, Plywood Timber Products. It was approved on behalf of the Council of Standards Australia on 26 April 2005 and on behalf of the Council of Standards New Zealand on 6 May 2005. This Standard was published on 8 August 2005.

The following are represented on Committee TM-008:

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CSIRO Forestry and Forest Products
Engineers Australia
Forests NSW
Housing Industry Association
New Zealand Forest Research Institute
New Zealand Plywood Manufacturers Association
Plywood Association of Australasia
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Mr Kevin Lyngcoln

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This Standard was issued in draft form for comment as DR 04394.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION
OF
AS/NZS 4357.0:2005
Structural laminated veneer lumber
Part 0: Specifications

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Technical Committee TM-011 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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NOTES

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-008, Plywood Timber Products, to supersede [AS/NZS 4357:1995](#), *Structural Laminated Veneer Lumber*.

The objective of this Standard 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 requirements for the testing and labelling of structural LVL for formaldehyde emission. Three formaldehyde emission classes, E_0 , E_1 and E_2 have been specified.

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 Standard has been prepared to cover the manufacture and characterization of LVL intended for structural use only, and called structural LVL. It does not attempt to describe requirements for LVL intended for non-structural uses.

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

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

- (i) Manufacture of structural LVL to a specification that identifies and sets limits upon all controlling process variables.
- (ii) Testing and evaluation of in-grade manufactured structural LVL in order to derive reliable engineering design properties.
- (iii) 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.

This Standard is revised to form Part 0 of the [AS/NZS 4357](#) series, *Structural laminated veneer lumber*, which comprises the following parts:

[AS/NZS](#)

- [4357](#) Structural laminated veneer lumber
- [4357.0](#) Part 0: Specifications (this Standard)
- [4357.1](#) Part 1: Method of test for measurement of dimensions and shape (to supersede AS/NZS 2098.10:1995, *Methods of test for veneer and plywood*, Method 10: *Measurement of dimensions and shape for structural Laminated Veneer Lumber*)
- [4357.4](#) Part 4: Determination of formaldehyde emission

This Committee is currently developing companion Standards in relation to testing and evaluation of structural LVL, as follows:

- Part 2: Determination of structural properties—Test methods
- Part 3: Determination of Structural Properties—Evaluation methods

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard 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](#).

Design information specific to structural LVL is included in [AS 1720.1](#).

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

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| 1199 | Sampling procedures and tables for inspection by attributes |
| 1199.0 | Part 0: Introduction to the ISO 2859 attribute sampling system |
| 1199.1 | Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection |
| 1604 | Specification for preservative treatment |
| 1604.1 | Part 1: Sawn and round timber |
| 1649 | Timber—Methods of test for mechanical fasteners and connectors—Basic working loads and characteristic strength |
| 1720 | Timber structures |
| 1720.1 | Part 1: Design methods |
| 2754 | Adhesives for timber and timber products |
| 2754.1 | Part 1: Adhesives for plywood manufacture |

AS/NZS

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| 1604 | Specification for preservative treatment |
| 1604.4 | Part 4: Laminated veneer lumber (LVL) |
| 2098 | Methods of test for veneer and plywood |
| 2098.1 | Method 1: Moisture content of veneer and plywood |
| 2098.2 | Method 2: Bond quality of plywood (chisel test) |
| 2269 | Plywood—Structural |
| 4063 | Timber—Stress-graded—In-grade strength and stiffness evaluation |
| 4357 | Structural laminated veneer lumber |
| 4357.1 | Part 1: Method of test for measurement of dimensions and shape |
| 4357.4 | Part 4: Determination of formaldehyde emission |
| 4491 | Timber—Glossary of terms in timber-related Standards |