

Australian/New Zealand Standard™

**Plywood—Structural**



## **AS/NZS 2269:2004**

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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 13 May 2004 and on behalf of the Council of Standards New Zealand on 23 December 2003.

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The following are represented on Committee TM-008:

Australian Building Codes Board  
CSIRO Forestry and Forest Products  
Engineers Australia  
Housing Industry Association  
New Zealand Forest Research  
New Zealand Plywood Manufacturers Association  
Plywood Association of Australasia  
State Forests of New South Wales  
Timber Development Association (NSW)

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# Australian/New Zealand Standard™

## Plywood—Structural

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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 2269:1994.

*This Standard incorporates Amendment No. 1 (March 2006). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure, or part thereof affected.*

The objective of this Standard is to provide minimum performance requirements and specifications in the manufacture and application of structural plywood, acceptable to users, specifiers, manufacturers, and building authorities in Australia and New Zealand. Plywood manufactured to this Standard is suitable for use in permanent structures. The plywood may be of either hardwood or softwood veneers, or a combination of both. The quality of veneers is judged in the finished panel.

The objective of this revision is to meet the industry's prudential responsibility for reliable structural characterisation with an ever-changing forest resource availability and marketplace expectation. Based upon an ongoing testing and evaluation program carried out on production samples from Australian and New Zealand plywood producers over the past two years, it has been proved that two existing methods that allow stress grades and therefore characteristic strength and stiffness properties to be applied to structural plywood on the basis of species or density and veneer quality are no longer valid. The two inaccurate methods for species identification and density determination have been deleted from this revision.

Five standard veneer qualities, A, S, B, C and D, are prescribed, as follows:

- A—a high quality appearance grade, suitable for clear finishing.
- S—an appearance grade, which permits characteristics as a decorative feature.
- B—an appearance grade suitable for high quality paint finishing.
- C—a non-appearance grade with a solid surface.
- D—a non-appearance grade with permitted open imperfections.

The surface grade of the plywood is determined by the quality of the face and back veneers.

Three methods for determining the stress grade for the plywood are described using the following bases:

- (a) Veneers of determined stiffness.
- (b) Mechanical stress grading of plywood panels.
- (c) In-grade testing of plywood panels.

A1 | Four formaldehyde emission classes, E0, E1, E2, and E3, are included.

For the design of structures or elements incorporating the use of plywood specified in this Standard, the structural grades will have characteristic strength and stiffness values as detailed in Table 4.1. These characteristic properties are to be applied in accordance with the requirements of AS 1720.1, *Timber structures*, Part 1: *Design methods*, and NZS 3603, *Code of practice for timber design*.

This Standard covers the basic structural plywood product. Particular end uses may require additional processing, preservative treatment or surface finishing. Structural plywood that is exposed long term to wet or damp conditions, or full weather exposure will need preservative treatment in accordance with AS/NZS1604.3, *Specification for preservative treatment*, Part 3: *Plywood*. Under these exposure conditions the surface of the plywood will need adequate protection.

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.

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SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard specifies requirements for the manufacture, grading, finishing and branding of structural plywood. Specifications for both stress and surface grades are also provided. The Standard also specifies veneer quality, bond quality, standard lay-up construction, dimensional tolerances, joints, moisture content and characteristic strength and stiffness values for the nominated stress grades.

The following alternative methods for the determination of stress grades for structural plywood, are also provided:

- (a) Veneer stiffness determination.
- (b) Mechanical stress grading of the finished sheet of plywood.
- (c) In-grade testing of finished plywood panels.

Five surface grades, based on the veneer quality of the face and back veneers, A, S, B, C and D and one bond quality, Type A bond, are prescribed.

**1.2 APPLICATION**

The specification for any grade of structural plywood shall consist of the general requirements given in this Section together with the requirements for veneers given in Section 2, the manufacturing requirements given in Section 3, and the application of stress grades and mechanical properties given in Section 4.

**1.3 REFERENCED DOCUMENTS**

The following documents are referred to in this Standard:

AS

- 1604 Specification for preservative treatment
- 1604.1 Part 1: Sawn and round timber
- 1720 Timber structures
- 1720.1 Part 1: Design methods
- 2193 Calibration and classification of force-measuring systems
- 2754 Adhesives for timber and timber products
- 2754.1 Part 1: Adhesives for plywood manufacture

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- 1604 Specification for preservative treatment
- 1604.3 Part 3: Plywood
- 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)
- 2098.3 Method 3: Bond quality and strength of scarf joints in plywood
- 2098.4 Method 4: Measurement of dimensions of sheets for veneer and plywood