AS 6669:2016

Plywood—Formwork

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- Australian Building Codes Board
- Australian Forest Products Association
- Australian Timber Importers Federation
- Australian Wood Panels Association
- Engineered Wood Products Association of Australasia
- Forest and Wood Products Australia
- Furntech-AFRDI
- Glued Laminated Timber Association of Australia
- Master Builders Australia
- Monash University
- Timber Design Society

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee TM-011, Engineered Timber Products, to supersede AS 6669—2007. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide minimum performance requirements and specifications for the manufacture and application of plywood for use in the specific application of concrete formwork in Australia.

This Standard describes formwork plywood products, either overlaid or non-overlaid, that are suitable, subject to correct installation and design of the formwork, for providing a concrete surface finish meeting Classes 2, 3, 4 and 5 off-form finishes as specified in AS 3610.1, *Formwork for concrete*. Attention is drawn to the mandatory requirements of AS 3610.1 for the need to undertake test pours where colour control or surface finishes of Class 2 or better are specified.

Significant changes in this 2016 edition include:

(a) The alignment of characteristic structural properties for stress-grades with AS/NZS 2269.0:2012, *Plywood—Structural*, Part 0: *Specifications*.

(b) The alignment of the specified methods for the determination of stress-grades with AS/NZS 2269.0:2012, *Plywood—Structural*, Part 0: *Specifications*.

(c) Inclusion of new standard constructions to reflect latest product development and manufacturing practices.

(d) The inclusion of formaldehyde emission classes for formwork plywood.

Notes used in this Standard are of an advisory nature only and are used to give explanation or guidance to the user on recommended considerations or technical procedures, or to provide an informative cross-reference to other documents or publications. Notes to clauses in this Standard do not form a mandatory part for compliance with this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard 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.

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FOREWORD

This Standard is for formwork plywood at the point of manufacture, intended to deliver concrete surface classes in accordance with AS 3610.1. In addition to this Standard, subsequent factors after the point of manufacture, such as on-site handling and use, environmental exposure, storage, design and number of reuses, etc. will influence the resultant class of surface finish.

Guidance can be sought from industry bodies on the correct use, application and design of formwork plywood.

The plywood may be of either hardwood or softwood veneers, or a combination of both. The quality of veneers and surface quality is judged in the finished panel.

The quality of impregnated overlay papers is described using the paper/total weight ratio method.

Three veneer qualities, F, C, D are prescribed as follows:

(a) F—a non-appearance grade, which is a suitable substrate for the bonding of overlay papers.

(b) C—a non-appearance grade with a solid surface.

(c) D—a non-appearance grade with permitted open imperfections.

Additionally, two veneer qualities U2 and U3 are recommended for use as underlay veneer, as follows:

(i) U2—a non-appearance grade, suitable for use as an underlay veneer immediately beneath the face veneer in formwork plywood intended for a Class 2 surface finish. This grade permits solid defects but restricts the size of open imperfections, which may impair the surface quality meeting Class 2 surface requirements.

(ii) U3—a non-appearance grade, suitable for use as an underlay veneer immediately beneath the face veneer in formwork plywood intended for a Class 3 surface finish. This grade permits solid defects but restricts the size of open imperfections, which may impair the surface quality meeting Class 3 surface requirements.

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

(A) Mechanical E-grading of formwork plywood panels.

(B) In-grade testing of formwork plywood panels.

Two bond types, A and B, are incorporated in the Standard to cover a range of bond durability requirements for formwork plywood across a range of applications and re-use conditions.

STANDARDS AUSTRALIA

Australian Standard
Plywood—Formwork

S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies requirements for the manufacture, grading, finishing and branding of plywood used specifically in formwork, with a maximum length of 3100 mm and width of 1500 mm, intended to meet off-form surface finish requirements of Classes 2, 3, 4 and 5 as specified in AS 3610.1.

This Standard does not include specifications for formwork plywood intended to meet off-form surface finish Class 1.

Specifications for stress and surface grades, overlays, veneer qualities, bond quality, standard lay-up construction, dimensional tolerances, joints, moisture content and characteristic strength and stiffness values for the nominated F-grades are provided.

The following alternative methods for the determination of stress grades for formwork plywood are specified:

(a) Mechanical F-grading of the finished sheet of formwork plywood.

(b) In-grade testing of finished formwork plywood panels.

Three outer veneer grades, based on the veneer quality of the face and back veneers; F, C and D are prescribed, and four surface quality grades Classes 2, 3, 4 and 5 are described.

Two bond types, A and B, are specified.

Formwork plywood is usually a multiple-use product subject to on-site handling and use, environmental exposure, storage, design and number of re-uses, etc. The physical and structural characteristics of formwork plywood products, as branded and specified in this Standard, are appropriate for the products as manufactured. Inspection of the product is required at all stages including but not limited to, before and after each use, to ensure ongoing required performance across all characteristics.

NOTE: Structural adjustment factors for multiple uses are specified in AS 3610.1.

1.2 APPLICATION

The specification for any grade of formwork plywood shall comply with the requirements of the following Sections:

(a) General requirements ..... Section 1.

(b) Requirements for veneers ..... Section 2.

(c) Requirements for surface quality ..... Section 3.

(d) Manufacturing requirements ..... Section 4.

(e) Application of stress grades and mechanical properties ..... Section 5.

Relevant requirements are also specified in the following normative Appendices:

(i) Section properties ..... Appendix B.

(ii) Method for mechanically F-grading formwork plywood panels ..... Appendix C.

