



INDUSTRY PLANT CONSULTATIVE COMMITTEE SAFETY ALERT

PLYWOOD USED IN FORMWORK

ISSUE

The adequacy of plywood used in formwork systems. WorkCover NSW has become aware of plywood being imported into Australia that has no markings indicating its structural strength. If this plywood is used in formwork, it is likely to fail, with potentially serious consequences.

BACKGROUND

Plywood used as formwork in decking, soffits and walls/columns, commonly known as “formply”, is exposed to substantial forces. These are largely dead loads from the weight of reinforcing steel and concrete, and can be increased considerably by live loads such as those generated by persons working on the decking, plant used during the concrete pour, and wind loads. The plywood must be strong enough to withstand these forces.

The *Occupational Health and Safety Regulation 2001* requires employers to ensure that formwork comply with AS 3610 *Formwork for concrete*. This standard specifies that plywood complies with AS/NZS 2269 *Structural plywood* for structural properties and, depending on its type, either AS/NZS 2269 or AS/NZS 2271 *Plywood and blockboard for exterior use* for its bond quality. It also states that components, including plywood, used in the formwork assembly must be of the specified type and material grade, and where they do not meet the criteria, they be rejected. It further states that where it is not possible to identify materials as being of the type and grade which is specified on the formwork documentation, they are not used in the construction of the formwork.

AS/NZS 2269 specifies testing requirements that are used to determine the strength, or “stress grade”, of the plywood, which is designated an “F-value”, where a higher the F-value indicates stronger plywood. Typically, plywood used as formply has a stress-grade of F11 to F27, with F17 being the most common grade. The standard requires that each sheet of plywood be marked to indicate that it complies with the requirements of the standard and to show its stress grade.

Some plywood recently imported into Australia has been found with no markings on it that identify its stress grade or indicates its compliance with the relevant Australian Standard. Independent testing on samples of this plywood shows that it possess properties equivalent to plywood with an F8 grade, and that the glue bond was not durable as it failed to meet the requirements of AS/NZS 2269 or AS/NZS 2271. This plywood should not be used as formply; if it is, it could fail with severe consequences.

WHAT SHOULD BE DONE?

Employers:

Employers must ensure that formwork complies with AS 3610. For plywood, this means that employers must ensure it complies with AS/NZS 2269 and the appropriate part of either AS/NZS 2269 or AS/NZS 2271 as applicable, and be of the appropriate stress grade for the formwork assembly. For new batches of plywood sheets, this should be readily discernible as each sheet must be marked to indicate compliance with the relevant standard and its stress grading.

Plywood Suppliers:

Persons supplying plywood claiming compliance with the relevant part of AS/NZS 2269 and/or AS/NZS 2271 must ensure that such claims can be authenticated. Each plywood sheet must be appropriately marked with the information required by the standard, including its stress grade. Consideration should be given to using a method of marking that is durable enough to enable the plywood be identified throughout its anticipated usage, including reuse.

Note: Plywood produced under a JAS-ANZ accredited product certification scheme provides reliable independent verification of product compliance.

Formwork Suppliers:

Formwork suppliers must ensure that the plywood used in the formwork assembly complies with the relevant part of AS/NZS 2269 or AS/NZS 2271, and be of the appropriate grade. Each new sheet of plywood must be marked with the information required by the standards, including compliance with the standard and its stress grade. Where necessary, consideration should be given to applying additional marking that is durable enough to enable the plywood be identified in subsequent usage. If plywood cannot be identified as meeting the necessary specifications for the formwork assembly, it must not be used.

Failure to ensure the adequacy of plywood used as formply could result in a serious accident.