



# TROPEX EXPORTS LTD

*Setting the Standard*

## Structural Plywood or Marine Plywood?

In the Pacific Islands **Marine Plywood** is often specified by building designers. **Structural Plywood** is specifically designed for building purposes whereas marine is made for use in boat building.

Structural Plywood made in New Zealand (such as Ecoply) is subject to stringent third party quality control audits by the Plywood Association of Australia (PAA). Product compliance and performance in building (strength, stiffness and durability), is linked through the manufacturing standard. (AS/NZ 2269) to the design standards. (NZS 3603 and AS 1720) and into the Building Code.

No standard of Marine Plywood (e.g. AS/NZS2272:2006) is linked to the New Zealand building code however perceived durability appears to be the main reason architectural designers ask for marine.

Consider both the adhesive and the wood.

### The Adhesive

The glue bond in Structural Plywood to AS/NZS 2269 is the same as that used in high quality marine plywood. The adhesive is phenol formaldehyde (PF) resin that is cured at high temperature and pressure to give a brown coloured glue line with proven exterior performance of over 50 years. Once set, the bond cannot be reversed and will not release free formaldehyde.

Structural plywood therefore has the same so called marine bond. In AS/NZS 2269 This is called the Type A phenolic bond. Hence the glue lines in properly made Marine and Structural plywood have the same durability.

### The Wood

Marine plywood is made from essentially clear veneers throughout the whole plywood sheet to enhance water proofing and performance under localized water pressure. This makes it very expensive, because clear wood is more expensive than knotty wood.

Structural plywood is generally made with a specified A, B, C or D grade face veneers. The other non-visible plies are C or D grade veneer with knots or holes. A and B grade faces are essentially clear, C grade is a filled face with small knots, and D has natural knots and open defects up to a maximum limit. (See photographs on page 4 of Ecoply Structural Plywood brochure for an idea of how they look.) Ecoply AD, BD

and Plygroove are designed for lining applications where a clear or high appearance quality face is desired.

Radiata pine plywood must be preservative treated to at least H3 hazard class for exterior exposure. Most marine plywood is sold untreated. Often the wood in imported marine plywood is hardwood veneer. Not all hardwoods or so called marine plywoods are durable. Some hardwood species are less durable than untreated Radiata pine. For example, Commonly sold Gaboon/Okoume plywood is non-durable, and some lighter Meranti/Lauan woods are only moderately so.

Hardwood plywood from different sources should be carefully checked to ensure the species you think you've got is in fact the one you want. A reported consignment of Asian plywood supposedly of one species when tested by the CSIRO in Melbourne had 10 different veneer species mixed within the panels even though the face veneers were similar. This may not be a problem for visual applications, but the durability and structural design values for plywood not made to AS/NZS 2269 and not subject to the audits of the PAA should be treated with caution.

To summarise in many instances of building construction a structural treated plywood will be the most suitable option and provide the user with superior structural performance, durability at a lower cost than marine plywood.

For more information contact [info@tropex.co.nz](mailto:info@tropex.co.nz)