

Exterior Plywood, Mould Growth & Surface Coatings

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What Is Mould

Mould is a natural phenomenon on exterior surfaces, requiring regular washing to remove dirt and surface grime, just as can be observed on windows. Mould or mildew will grow on almost any surface if the conditions are right (e.g. in moist warmer regions). Rough sawn or porous surfaces, such as concrete, provide a good key for dust and wind blown organic matter from which mould finds some of its food.

The rate and level of mould development is very dependent on climate, the type of wood preservative, the type of coating, and the degree of protection offered by design (e.g. with overhanging eaves). Some architects detail buildings or specify unpainted concrete, wood or plywood because they are specifically looking for the grey/black rustic finish associated with these effects.

What Mould Is Not

Mould is not rot. H3 LOSP treated Shadowclad contains preservatives that fill the wood fibres with chemicals that are poisonous to rot fungi.

H3 LOSP contains a temporary mouldicide to limit mould growth prior to painting or staining.

Mould will not damage the plywood structurally but it will discolour surfaces, and may increase natural weathering wear such as face checking.

Recommendations for Plywood

H3 treated smooth faced structural plywood (such as Ecoply) will meet the New Zealand Building Code (NZBC) durability requirements when installed as per manufacturer and NZBC specifications.

However smooth faced plywood when used as an exterior cladding is likely to develop aesthetic issues such as face checking if not regularly maintained

For exterior cladding applications, CHH Woodproducts strongly recommends the use of the bandsawn exterior cladding Shadowclad which is more resistant to appearance related issues than smooth faced plywood.

In relation to mould and plywood claddings and conventional coating systems CHH Woodproducts expects the following.

Refer to current Shadowclad specification literature for specifications relating to achieving 15 and 50 year panel durability levels.

Paints & Film Forming Stains

With good quality acrylic paints and selected film forming stains, the surface coating provides a film on the plywood, and mould or surface deposits can be washed off easily.

Good quality paints and film forming stains should also contain a mouldicide that can partially inhibit mould growth. These systems generally require recoating at five to ten year periods, with more expensive paints lasting around ten years between coats. Light coloured paints provide the best performance with longest recoating intervals. On plywood, oil based paints do not perform as well as acrylic paints. Paint should normally be washed and checked annually or as per coating manufacturing specifications.

Penetrating Stains or Semi-Transparent finishes

Performance depends on the degree of protection offered. Some stains have a surface film that allows easy washing. Penetrating stains require closer cleaning intervals, and recoating every two to four years. Mould growth will depend on the type of stain, mouldicide in the stain, and on the environment. Some linseed oil based stains are very susceptible to mould growth. Do not use CD50 for this reason.

Sites in warmer regions will need closer cleaning intervals to maintain the surface. Surfaces left without cleaning or recoating eventually take on the weathered rustic look of uncoated boards, albeit with a base colour. Stains can be specified to obtain a weathered finish with a base colour.

CHH Woodproducts does not recommend penetrating stains on exterior plywood where a low level of coating maintenance is desired.

Uncoated plywood

CHH Woodproducts does not recommend leaving plywood uncoated for cladding or high appearance exterior applications.

Mouldicides in H3 LOSP treatment solutions offer only short-term protection until adequate paints or stains are applied

Exterior plywood left uncoated for an extended period, without stain or paint (in addition to other appearance related issues); will develop a weathered grey/black rustic surface, with mould growth at a level consistent with the environment and length of exposure.

Uncoated plywood cannot be used as an exterior bracing element- Refer to the NZ Building Code for cladding used as bracing for specifications. CHH Woodproducts strongly insists plywood used as exterior cladding is coated to avoid appearance related issues.

Paint or stain as soon as possible to avoid mould development under the coating. With H3 LOSP treated plywood the solvent should be allowed to evaporate sufficiently before coating. Good quality paints and stains

should be used and should contain a mouldicide to kill residual contamination.

Stains also vary in their effectiveness depending on their formulation, and on the environment. However, they can be washed more easily than uncoated surfaces. Paints offer the best protection, can be washed most easily, and should be maintained in accordance with good practice

What To Do With Mould

There are three possible courses of action:

1. If you want or are happy with a rustic look, do nothing, and accept the finish that some architects are after. Note however that leaving wood unprotected from the weather is hard on the wood. Long term durability will not be as good as for a fully protected surface.

Please read the Carter Holt Harvey Woodproducts Durability Statement.

2. If you expect to paint or stain, then do so as soon as possible after installation, and maintain in accordance with accepted industry practices or manufacturer's instructions regarding washing and eventual recoating.

3. If a surface has mould on it, it should be cleaned before painting or staining. A number of recipes are available. Proprietary mould killers can be used. Other options include:

(a) For lightly affected surfaces (Courtesy Wattyl Paints)

A solution containing 250 ml of chlorine bleach (e.g. Janola), 2 tablespoons detergent and 4 litres water. This weaker solution avoids bleaching wood and lowers risk of contaminating the next paint coat

Apply the solution to the surface, leave a few minutes to allow the ingredient to kill the mould, then scrub and rinse as needed. Repeat, or adjust waiting time if required. Do not use ammonia.

To ensure surfaces are free of residual bleach before recoating, rinse thoroughly and allow to dry.

Further information and instruction on painting

Plywood veneer is solid *Pinus radiata* pine. Many of the practices used with exterior timber are applicable to plywood. For further information and instruction on painting, refer to the following:

"Transparent and semi transparent exterior finishes for timber exposed to the weather", BRANZ Bulletin 296: 1992

"Wood primers", BRANZ Bulletin 315: 1993

"Leave Cedar Alone", Consumer Home and Garden, Winter 1994

"House paints are getting better", Consumer Home and Garden, Summer 1994

"Weatherboards", Ministry of Forestry. Trees and Timber Number 5. 1987

"Radiata pine weatherboards", NZ Journal of Timber Construction June 1991

Paint and stain manufacturer's recommendations.

Limitations

The information contained in this document is current as at August 2011 and is based on data available to CHH Woodproducts at the time of going to print.

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