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SHADOWCLAD MAINTENANCE

1. INTRODUCTION

All cladding material, including Shadowclad®, requires careful and regular maintenance by the building owner throughout the cladding's normal service life to ensure long term durability and to maintain visual aesthetics.

The amount of maintenance will depend on the age of the cladding as well as environmental conditions and building orientation. This information bulletin has been created to provide further guidance to building owners about the minimum maintenance requirements for Shadowclad products.

2. WHAT IS MAINTENANCE?

Maintenance is the process of completing regular work to keep your building in a good state of repair. Effective maintenance allows the building components to continue to perform their primary function. Maintenance may include, but is not limited to regular cleaning, minor repairs and replacements. Preventative maintenance and repairs will typically prevent small problems turning into larger, more costly problems.

To ensure cladding continues to perform, the exterior envelope of a building as a whole must be maintained. This requires regular inspection, cleaning and maintenance of window and doors as well as sealants and clearance gaps between the cladding and other building elements.

The New Zealand Building Code (NZBC) requires maintenance to form part of ongoing building use. The Acceptable Solutions for External Moisture (E2/AS1) and Durability (B2/AS1) provide some guidance:

- Acceptable Solution E2/AS1, notes that maintenance shall be carried out as necessary to achieve the required durability of materials, components and junctions.
- Acceptable Solution B2/AS1, Section 2.0 Maintenance, provides further guidance around considerations of both Normal Maintenance, and Scheduled Maintenance.

3. MAINTENANCE RESPONSIBILITY

Maintenance is the responsibility of the building owner. It is recommended that the owner retains a written record, or logbook of what maintenance is carried out to the building including the type of maintenance, date and by whom.

CHH Plywood is not responsible for any issues arising from a failure to carry out required maintenance in accordance with this information bulletin.

4. ENVIRONMENTAL CONDITIONS AND LANDSCAPING

It is important for building owners to consider the effects of environmental conditions and landscaping in the maintenance of the cladding. Consideration should also be given to providing access for maintenance when making additions, such as decks, to existing Shadowclad buildings.

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a. Environmental Conditions

Consideration of environmental conditions needs to take into account factors such as building orientation and other local atmospheric conditions, often referred to as "microclimates". These conditions can result in dirt, grime and salt build up which may shorten the service life of claddings.

In New Zealand, North and West facing walls are subject to more damaging UV rays than South facing walls, and South facing walls may be more subject to dampness. This may require a more frequent maintenance schedule and influence the requirement to clean surface mould and repaint.

On-site factors associated with harsh microclimates may include mildly corrosive atmospheres that can easily transform into an aggressive environment due to microclimatic effects. Significant acceleration of the corrosion rate of structural fasteners and fixings beyond what could be expected from the geological location can occur in situations where there may be use of agricultural chemical or fertilisers, geothermal hotspots or coastal areas with high risk of wind-blown sea-spray salt deposits¹. Claddings subjected to these types of harsh microclimatic conditions will require more frequent washing and inspection.

b. Landscaping

Landscaping forms part of most buildings' aesthetics. It is important that foliage be maintained such that it does not adversely affect the cladding and cause moisture build up on the cladding face. Foliage should be maintained in a way that it does not rest against the cladding and free flowing air is allowed to circulate between the cladding and foliage.

It is also important that any landscaping, including (but not limited to) the addition of paved areas, decks and garden beds, does not affect the minimum clearances required, as detailed in the Shadowclad Specification and Installation Guide. Required ground clearances may be breached in soft landscaped areas due to the growth of vegetation and the introduction of additional material over time such as compost and fertilisers. Checking ground clearances as part of routine inspections will enable you to remedy any clearance breach at the earliest available opportunity.

c. Additions and Alterations

When designing and constructing additions to buildings consideration must be given to ensuring access for future maintenance. For example, clearance between decks and painted claddings must be adequate to enable maintenance of the paint coating and eventual repainting. For further information regarding Additions and Alterations please consult the Shadowclad Additions and Alterations Information Bulletin.

5. PAINTING

Painted Shadowclad sheets need to be cleaned and recoated regularly to maintain a weather-resistant exterior. The amount of recoating, or time to recoat, is dependent on a number of factors, such as:

- Quality of surface preparation;

¹This is a non-exhaustive list of possible Microclimatic atmospheric conditions

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- Quality and condition of previous painting – new paint will last longer if the old paint is still in reasonably sound condition when repainted;
- Quality of paint;
- Amount of sun (UV) exposure;
- Microclimatic conditions;
- Colour – lighter colours tend to last longer than darker colours;
- Number of coats applied;
- Underlying colour – applying a dark colour directly over a light colour can sometimes cause a previously sound paint to lose adhesion because of the higher surface temperatures.

Chalking (i.e. where a fine powder is forming on the painted surface), blistering, peeling, and flaking of paint is an absolute sign that the paint coating needs maintenance. Where localised coating failure has occurred, it is important to establish the cause, remediate the areas, prime and repaint.

The selection, application and maintenance of coatings is the responsibility of building owners and the professionals that they engage.

When recoating, it is important to ensure that:

- Any loose, flaking or unsound coatings are removed.
- The surface is thoroughly prepared and cleaned prior to the application of the paint.
- Coatings should be applied by brush and care taken to ensure adequate coating film build is achieved - application by roller or spray is not recommended, as this will not achieve adequate coating film build on the rough sawn face of the Shadowclad.
- A minimum film build of 30 micron thickness per re-coat is achieved.
- Coatings are applied to edges and bottoms of sheet joints as applicable.

CHH Plywood recommends two top coats of a good quality, 100% acrylic paint system with a light reflectance value (LRV) of 50% or greater (i.e. light colours). This is likely to require the least amount of coating maintenance over the service life of the cladding (subject to application over a soundly prepared surface).

Always refer to the coating manufacturer prior to application for detailed advice on surface preparation, coating product suitability and general coating practice and maintenance.

Where penetrating stains have been applied, sheets are likely to require additional coating maintenance during the service life to maintain an acceptable visual appearance. CHH Plywood's advice is to follow the requirements and advice of your stain manufacturer on maintenance and recoating.

6. WALL CLADDING MAINTENANCE

As a minimum, Shadowclad should be maintained by:

- Regularly washing it down (at least annually, more frequently in areas with harsh microclimates) with a mild detergent or solution to remove surface dirt, moss, mould, and sea spray. Do not use water blasters to wash down the cladding as this will damage the surface of the Shadowclad.

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- Inspecting the cladding annually paying particular attention to sheet joints, corners and the base of sheets.
- Keeping dirt, soil or leaf build-up at least 150mm away from the base of sheets.
- Cleaning spouting and downpipes as required, so that stormwater is not overflowing onto the cladding.
- Repainting as soon as the first sign of coating deterioration is identified, in accordance with the coating manufacturer's specifications (including edges and sheet bottoms).
- Should face checking occur re-coat your cladding in accordance with the coating manufacturer's instructions thoroughly working the coating into the face checks with a paint brush.
- Sheet re-coating requirements may vary depending on climate, orientation to the sun, coating type and coating colour selected.
- Maintaining the exterior envelope and connections including joints, penetrations, flashings, heat pumps, and sealants that may provide a means of moisture entry beyond the exterior cladding to comply with the requirements of the NZBC Clause E2 - External Moisture.
- Pruning back foliage which is close to or touching the building as well as ensuring the NZBC ground clearance requirements are maintained especially where gardens are concerned.

7. FLASHING MAINTENANCE

Aluminium and stainless-steel flashings require periodic maintenance. In some instances, it may require a more frequent maintenance schedule as a result of microclimatic conditions. As a minimum, Shadowclad flashings should be maintained by:

- Periodically cleaning them on a similar basis to the glass in windows.
- Cleaning the Shadowclad® flashings with a diluted solution of mild liquid detergent avoiding excessively hot solutions. Use a soft bristle brush. Do not use abrasive tools or cleaners on the coating.
- It is strongly recommended that a small test area be checked first, to ensure that no damage will occur to the whole area.
- After cleaning, rinse thoroughly with fresh water. Do not use strong solvent type cleaners. Where the use of solvents is required, such as cleaning paint spills, use nothing other than methylated spirits. Ensure contact time is as short as possible and rinse the solvent cleaner thoroughly from the surface with copious amounts of water that is of drinking quality.
- Where cavity base closures are installed, ensure that drainage holes are kept clear.

8. REFERENCES

- New Zealand Building Code (NZBC).
- NZS 3602:2003 "Timber and Wood-Based Products for use in Buildings".
- NZBC Clause E2 External Moisture.
- NZBC Acceptable Solution, E2/AS1.
- NZBC Clause B2 Durability.
- NZBC Acceptable Solution, B2/AS1.
- Product Technical Statement. – Shadowclad® for Cavity Construction.
- Shadowclad® Specification & Installation Guide for Cavity Construction.
- CHH Plywood technical notes – downloadable from chhply.co.nz/librarytools.
- Window Association of New Zealand (www.wanz.org.nz).
- BRANZ Recommendations for Building Maintenance.
- Dulux Technical Advice, Care and Maintenance of Powder Coated Surfaces.