




Finishing PVC Permanent Formwork

A Practical Guide for Architects and Specifiers



Introduction

Dincel Structural Walling was the first PVC permanent formwork system invented and manufactured in Australia. Over the last 19 years, Dincel has not only supplied large-scale projects nationwide but also played a central role in educating the industry about finishing requirements. Painting, rendering or cladding PVC surfaces is a well-established practice. Dincel has demonstrated these methods at scale, backed by warranties and technical guidance, giving architects and specifiers confidence in both compliance and long-term performance.

Unlike traditional formwork systems, PVC permanent formwork remains in place after the pour, avoiding the removal process and reducing waste on site. The panels are lightweight and easy to handle, which can lower labour requirements and streamline construction programs. By resisting deterioration mechanisms such as rot, rust and cracking, PVC provides a consistent substrate that supports long-term structural integrity. These properties have made it an attractive alternative where speed of installation, material longevity, and reduced maintenance are central to design and specification decisions.

For architects and specifiers, it is important to recognise that PVC permanent formwork systems such as Dincel can be finished in multiple ways, including painted, rendered, clad or left exposed, depending on the project's performance and aesthetic requirements. The key lies in selecting compatible finishing systems that accommodate the material's properties, ensuring durability, compliance and design flexibility.



Finishing formwork: The basics

Purpose

In the context of PVC permanent formwork, finishing refers to the application of surface treatments, such as paint, render, cladding or sealants, after the structural concrete core has been poured and cured. These treatments serve two key roles:

- **Functionally**, finishes improve performance by enhancing weather resistance, supporting acoustic and fire ratings or enabling compliance with non-combustibility provisions where required.
- **Aesthetically**, finishes provide design flexibility, allowing architects to achieve desired colours, textures and architectural styles while integrating the formwork into the broader project context.

Finishing options

Cladding: Mechanical or adhesive-fixed cladding systems can be applied directly to PVC permanent formwork to provide both protection and design variation. This option allows specifiers to select from a wide range of materials and profiles while maintaining durability. Correct fixing methods and compatible adhesives are essential to prevent detachment or differential movement over time.

Painting and rendering: Surface coatings remain a common approach for both internal and external applications. Flexible polymer-modified or acrylic renders are recommended because they can accommodate minor thermal or structural movement, reducing the risk of surface cracking. For painted finishes, UV-resistant exterior paints combined with primers designed for non-porous substrates ensure long-term adhesion and colour stability.

Leaving the formwork bare: In certain non-architectural spaces, such as basement walls and stairwells, it may be advantageous to leave PVC permanent formwork bare. This approach leverages the material's inherent moisture resistance and durability, offering a low-maintenance and cost-efficient outcome where visual presentation is secondary to function.

Cladding PVC formwork

General

The application of cladding to PVC permanent formwork provides a secondary protective layer that can significantly extend the system's performance. From a design perspective, cladding enables greater architectural expression by aligning the appearance of PVC formwork walls with surrounding facade materials.

Cladding materials

A variety of cladding materials can be successfully integrated with PVC permanent formwork, including:

- timber and engineered timber cladding;
- composite panels;
- brick veneer systems;
- fibre cement panels; and
- metal cladding

Fixing methods

Adhesive fixings: Adhesive-based fixing systems allow for a flush, seamless finish with no visible fasteners. This method is typically suitable for low- to moderate-wind regions, provided adhesives are selected for compatibility with PVC substrates and are tested for long-term UV and weather resistance. Careful product selection is critical, as inappropriate adhesives can compromise durability and bond integrity.

Mechanical fixings: Mechanical fastening becomes essential in higher wind regions, specifically Regions C and D under AS/NZS 1170.2, or where the cladding is

subject to movement, impact or higher structural demands. Corrosion-resistant fixings should be specified to withstand environmental exposure. Mechanical systems also offer the advantage of allowing cladding panels to be removed or replaced more readily during maintenance cycles.

Design and compliance notes

Several technical considerations must be addressed when specifying cladding on PVC formwork:

- **Wind and impact resistance:** Fixing systems and cladding materials must be selected and tested in accordance with AS/NZS 1170.2 to ensure performance under regional wind loads and serviceability conditions.
- **Fire safety and non-combustibility:** Materials must comply with NCC 2022 fire performance provisions (Section C) and, where applicable, AS 1530 testing requirements.
- **Moisture management:** Junctions and penetrations must be detailed to prevent water ingress behind the cladding system. Refer to Section F of the NCC 2022.
- **Thermal movement:** Allowance should be made for differential expansion between PVC formwork and cladding materials, particularly in high-temperature or solar-exposed zones, to mitigate risks of buckling or cracking.



Finishes provide design flexibility, allowing architects to achieve desired colours, textures and architectural styles while integrating the formwork into the broader project context.



Painting PVC formwork

General

Painting PVC permanent formwork enables the surface to be finished with a desired colour, texture or sheen, enhancing the architectural expression of the building. Beyond visual appeal, painting provides an additional protective barrier against fire, UV degradation, airborne pollutants and moisture exposure.

Surface priming

Due to the non-porous nature of PVC, proper surface preparation and priming are essential to achieving coating durability. Specialist adhesion primers designed for plastics should be used to establish a reliable bond. Surfaces must be thoroughly cleaned and degreased, with light abrasion carried out if recommended by the primer manufacturer. Priming reduces the risk of peeling, blistering or flaking over the service life of the wall. In coastal or industrial zones, it is advisable to wash down surfaces to remove salts or contaminants before priming to prevent adhesion failure.

Paint selection

For exterior applications, the choice of coating system is critical.

- **UV-resistant coatings:** In high-UV regions such as Queensland, the Northern Territory, and Western Australia, elastomeric acrylic or polyurethane coatings provide long-term protection, maintaining colour and gloss under harsh solar exposure.
- **Exterior-grade systems:** Paint systems must comply with AS/NZS 2311:2017 (Guide to the Painting of Buildings) to ensure suitability for exterior performance.

Design and compliance notes

- **Colour selection:** Dark colours accelerate heat gain, increasing thermal movement in PVC substrates and affecting dimensional stability.
- **Bushfire:** In bushfire-prone regions, coating systems must be confirmed as suitable for the relevant BAL rating under AS 3959:2018.
- **Abrasion resistance:** In areas with high windborne dust or industrial pollutants (e.g., mining regions), specify abrasion-resistant coatings to maintain finish performance.
- **Non-combustibility:** Where non-combustible construction is required, compliance must be demonstrated for the complete wall system under NCC 2022 Section C.



Rendering PVC formwork

General

Rendering provides PVC permanent formwork with a decorative finish that can be textured or coloured to suit design intent, while also offering added resistance to moisture, UV and impact. In the case of Dincel, the hydrophobic polymer surface and CSIRO-tested joints prevent moisture ingress, meaning render functions primarily as an aesthetic finish rather than a protective barrier. This reduces the risk of issues such as mould growth or structural degradation if coatings fail.

Surface priming

PVC's smooth, non-porous surface requires thorough cleaning and the use of specialist primers or bonding agents formulated for plastics. Light abrasion may be specified to improve adhesion. In coastal or industrial areas, surfaces must be washed to remove salts or contaminants prior to priming.

Material selection

Polymer-modified or 100% acrylic renders are recommended for their flexibility and crack resistance, meeting AS/NZS 4548.5:1999 durability requirements. Dincel specifically recommends acrylic renders with polystyrene aggregates to allow for thicker application (10–15 mm) in one coat and improving insulation performance.

Practical guidance from Dincel

Experience with Dincel Structural Walling highlights several practical measures to achieve durable, crack-free rendered finishes:

- **Render thickness:** Minimum 10 mm render is recommended. Additional thickness may be required to correct misalignments or out-of-plumb walls.

- **Accredited applicators:** Only accredited applicators should be engaged to ensure correct workmanship and compliance with manufacturer specifications.
- **Dark colours:** Dark-coloured renders significantly increase surface temperatures (up to 88°C on western-facing walls), which amplifies thermal stresses and moisture-related pressures. Where dark colours are unavoidable, render thickness should be increased (≥ 14 mm), reflective topcoats applied and joints introduced at closer centres (≤ 5 m).
- **Moisture control:** Rendered Dincel walls must have their tops capped or sealed for a minimum of four weeks prior to application to prevent water ingress. Failure to do so can result in vapour pressure buildup and visible ridging at joints.
- **Crack resistance:** Conventional masonry substrates absorb and release moisture, leading to shrinkage, expansion and eventual cracking of applied renders. Dincel's hydrophobic polymer face and CSIRO-tested waterproof joints eliminate this moisture movement, providing a more stable base for finishing systems. As a result, render on Dincel significantly reduces the likelihood of cracking often seen with porous wall systems.

Compliance notes

- **Fire:** Render/mesh must meet AS 1530.1/3 for Type A/B construction.
- **Bushfire:** Confirm BAL compatibility under AS 3959:2018.
- **Cyclone regions:** Ensure render is supported to resist wind pressures.
- **Coastal zones:** Specify salt-resistant binders and regular washing.



Leaving the formwork bare

In certain settings, PVC permanent formwork systems such as **Dincel** can be left unfinished, providing a durable, low-maintenance surface without the need for additional coatings or cladding. This approach is particularly suitable in non-architectural or service areas, basements, car parks, plant rooms and utility spaces, where function takes priority over appearance and cost efficiency is a key consideration.

Specifiers must address moisture resistance, particularly in below-ground or exposed applications, by sealing junctions and penetrations with membranes compliant with AS 4858:2004 (Wet area membranes) and maintaining drainage and flashing in line with NCC 2022 moisture

management provisions. Fire performance requirements under the NCC must also be reviewed.

One of Dincel's key differentiators is the assurance that bare walls remain durable over time. CSIRO testing has verified the waterproof integrity of panel joints, meaning no additional waterproofing membranes are required. This performance underpins Dincel's ability to provide warranties of up to 50 years for basement applications, giving specifiers confidence that even in below-ground conditions, the system will maintain its integrity without reliance on applied finishes.



Finishing with confidence: Dincel Structural Walling

PVC permanent formwork has established itself as a reliable and versatile walling system, suitable for applications from basements to mid-rise construction. While finishing is often perceived as complex, the reality is that PVC surfaces can be painted, rendered, clad or left bare using established techniques and materials already familiar to the industry. The key lies in correct detailing, surface preparation and specification in line with standards and NCC provisions.

As the first company to invent and manufacture PVC structural walling in Australia, Dincel has played a central role in both product development and industry education over the last 19 years. A range of recommended manufacturers provide finishing solutions for Dincel Structural Walling with a minimum 15-year warranty against delamination. What further distinguishes Dincel is its CSIRO-tested and confirmed waterproof panel joints, which eliminate the need for additional waterproofing, and the depth of technical support provided to ensure correct installation and long-term finish performance.

The durability of the system is underscored by the Dincel Waterproof Warranty for up to 50-years of zero leakage for basement walls, a level of assurance not commonly found in the market. Combined with its local manufacturing base, large-scale production capacity and proven record of compliance with NCC durability, moisture management and fire safety provisions, Dincel provides architects with confidence in both structure and finish.

Ultimately, regardless of the finish, Dincel offers a stable substrate, industry-backed warranties and the technical expertise necessary to ensure that finishing is straightforward, durable and fully compliant.



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All information provided correct as of October 2025