

PAINTING OVER POWDER OR COIL COATINGS

WHAT IS POWDER COATING?

A powder coating is a 100% solids thermoset coating that is electrostatically charged and applied as a dry powder to a base metal (and other substrates such as medium density fibreboard). The powder-coated metal is then passed through an oven where the powder particles melt and coalesce on the substrate to form a hard, smooth, tightly adhering, continuous film. In many cases there is also a chemical curing reaction which contributes to the coating properties. The powder coated metal products are used for architectural elements such as windows and doors, handrails, balustrades, light poles and fencing.

Dulux® Powder and Industrial Coatings manufactures a broad range of powder coatings in a variety of resin technologies, including polyesters and fluoropolymers to suit virtually every situation.

WHAT IS COIL COATING?

A coil coating is a thermoset coating applied to continuous metal sheet (typically steel or Zinalume®, but may also be aluminium, etc.), which is then passed through an oven where the coating is heat cured. The coated sheet steel is then roll-formed to produce the various profiles that are seen on roofing, fencing, etc. Well-known examples of coil-coated products include Colorbond® and Colorsteel®. These products are used for cladding, decorative effects or as roofing, fencing guttering, etc. The roll-forming process may sometimes leave some residual lubricant on the sheet surface.

Coil-coated steel sheeting is painted on either or both front and back surface with various combinations of factory applied thermosetting anticorrosive primer and backing coats and topcoated with any of a range of technologies including polyesters, silicon modified polyesters, acrylics and fluoropolymers.

WHAT ARE THE ISSUES REGARDING PAINTING OF POWDER AND COIL COATINGS?

Both powder coatings and coil coatings are very smooth and chemically inert; they display excellent dirt shedding properties and may create problems for recoat paint adhesion. They provide neither a mechanical nor chemical key for the new coating. Therefore, both thorough surface preparation, including creating a profile to increase bond area, and choice of primer are essential for adhesion and long-term performance of the new coating system.

Note that there are some types of powder coating or coil coating which, due to their formulation, may not be readily recoatable, no matter what preparation is used. For example, powder coatings formulated for graffiti resistance and high performance powder or coil coatings (typically based on fluoropolymers) may not be recoatable at all. Where possible contact the manufacturer of the original coating to confirm its suitability for overcoating.



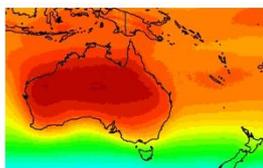
A Beckett Street Apartments feature louvers in 15 made to order Dulux® Duratec® colours



Colorbond® coated sheet steel is available in roofing, downpipes, fencing, pergolas and sheds



Perth Arena's perforated aluminium sections are powdercoated in Dulux® Fluorosef®, a very high durability product that is unlikely to need painting for more than 30 years



PAINTING OVER POWDER OR COIL COATINGS

HOW DO I PAINT POWDER OR COIL COATINGS?

- 1. CLEAN THE SURFACE:** Remove all surface contamination such as oil, grease or dirt by washing with free-rinsing, alkaline degreasing detergent (**Gamlen CA No. 1**), in strict accordance with the data sheet. Rinse with fresh potable water. Repeat until the surface is clean. A clean surface is indicated when the rinsing water wets out the surface instead of beading on the surface. Refer to AS1627.1 2003 Part 2.
- 2. MECHANICALLY REMOVE CORROSION PRODUCTS:** Remove chalky deposits, such as white rust, by abrasive nylon pad. Remove red rust by power tool cleaning in accordance with AS1627.2 to clean, bright metal. Remove all abrasion products and dust.
- 3. CHECK ADHESION OF EXISTING COATING:** Ensure that the coating is tightly adhering to the substrate. It may look sound, but adhesion to the substrate may have deteriorated over time. Perform a crosshatch adhesion test as per AS 1580.408.4-1993: Paints and related materials -Methods of test - Adhesion (cross-cut). If existing powder or coil coating fails the adhesion test, it must be removed.
- 4. ABRASE SURFACE:** Where existing coating had passed adhesion test, abrade using a non-metallic abrasive nylon pad to remove gloss or chalkiness, and to provide a sound, uniform surface for the new coating system to adhere to. Where coating had been removed back to a well-adhered, hard edge, mechanically feather edges of the coating to remove visual ridges. Remove all abrasion products and dust.
- 5. PRIME:** Ensure that the entire surface is completely dry and contaminant-free and then spot prime power-tool cleaned bare steel areas with the recommended primer as soon as practical after preparation before the surface oxidises or becomes re-contaminated, and allow the primer to cure.
- 6. APPLY COATING SYSTEM.** Choice of coating system depends on the end use of the element to be recoated and the substrate.

ORIGINAL COATING	SUBSTRATE	RECOMMENDED PRIMER	RECOMMENDED TOPCOAT
Powder Coating	Aluminium	Luxepoxy [®] 4 White Primer	Weathermax [®] HBR
Powder Coating	Steel	Durebild [®] STE	Weathermax [®] HBR
Coil Coating	Aluminium	Not Required	Weathershield [®]
Coil Coating	Steel	Durebild [®] STE	Weathermax [®] HBR or Weathershield [®]

Powder coatings are generally used in high demand areas, such as louvres, window and door-frames, and are best coated in high-performance two-pack coatings, such as Weathermax[®] HBR.

Coil coatings may be used in areas not likely to be subject to impact or high wear-and-tear, such as roofs and facades, and, in such cases, more cost effective product will suffice, such as Weathershield[®]. Weathershield[®] will offer adequate adhesion without the need for a primer. Where exposure to impact or high wear-and-tear, such as in fencing or curtain walling are expected, a high durability two-pack coating system, such as Durebild[®] STE/Weathermax[®] HBR will offer superior performance.

CAN I USE AN ETCH PRIMER ON POWDER AND COIL COATINGS?

No! Please read Dulux[®] PC Tech Note 3.7.1 Etch Primers.

For more information, please contact the Dulux Protective Coatings Technical Consultant in your state.



Acrylic paint is suitable for sheet steel walls



An acrylic is sprayed directly onto cleaned roofing without primer



Weathermax[®] HBR is ideal for brush application to narrow sections such as door and window frames