

CLEANING AND MAINTENANCE OF PROTECTIVE COATINGS

PROTECTIVE COATINGS DON'T NEED CLEANING, RIGHT?

Wrong! If you bought a new car today boasting the most expensive, hardwearing, and durable automotive finish available, would you avoid washing or and polishing it for a decade or two? If damage appeared in the coating would you leave it unrepaired? Imagine if an identical car's duco had been regularly maintained – would you expect them to look the same? The same principle applies to any coating system – good maintenance keeps a coating system looking good and functioning well to protect your assets.

Different coating types deteriorate at different rates - for example, two pack polyurethanes generally outperform polysiloxanes, which generally outperform single pack acrylics, which outperform silicone enamels which outperform enamels. Fluoropolymer powder coatings greatly outperform standard polyester powder coatings.

All coatings types, including high performance protective coatings will perform effectively far longer if they are regularly maintained.

Without regular cleaning of externally exposed surfaces, airborne chemicals and dust can accumulate on surfaces and etch glass, powder coatings and protective coatings. Deterioration of your assets reduces asset value and increases maintenance costs later.

Driving rain rarely washes off surfaces to any degree and in fact rainwater can soften and spread deposits.

Mechanical damage to coatings must be promptly repaired to restore the original protection to the substrate.

Cleaning and maintenance must be accomplished in a controlled and planned way.

The document which describes regular inspection, cleaning and repair is called a maintenance schedule or maintenance program.

MAINTENANCE PROGRAM

It is important that maintenance be done on a regular basis. A maintenance program includes a regular cleaning process, followed by an inspection report and repair and maintenance guidelines based on the inspection report.

The maintenance program should be done routinely at, say, a three monthly interval; six months should be considered maximum. More frequent maintenance should be carried out in marine, polluted, chemical or other corrosive environments.



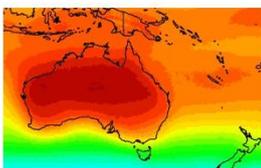
Unwashed and unloved – this car will need panel replacements if not maintained. Signs of rust are already appearing



Regularly washed and waxed, this car's body is likely to outlast the unwashed car's by decades



Without regular cleaning of windows, window frames and facades, acidic pollution can accumulate on surfaces and etch glass, powder coatings and protective coatings. Deterioration of your assets reduces asset value and increases maintenance costs later.



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MAINTENANCE GUIDE

It is important that maintenance be done on a regular basis. A maintenance program includes a regular cleaning process, followed by an inspection report and repair and maintenance guidelines based on the inspection report.

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SUGGESTED CLEANING PROCESS

The following is a guide only; details may vary according to the conditions the surface is subject to and the nature of the coating system. Bore water is no suitable, as minerals in bore water can stain the coating and may cause long term coating failure.

- Wash and degrease the surface in accordance with AS1627.1 with a free-rinsing, alkaline detergent (**Gamlen CA 1**) in strict accordance with the manufacturer's written instructions and all safety warnings. The use of warm water may aid the emulsification of heavy, oily deposits. (Care must be taken not to use excessively hot detergent solution on single pack coatings as this may affect gloss and/or adhesion)
- Persistent deposits may be removed with a soft bristle brush. Do not use abrasive tools on the coating.
- Rinse with fresh potable water and ensure that all soluble salts are removed in accordance with AS 3894.6 methods A&D. Repeat until the surface is clean.
- For deposits resistant to detergents, such as adhesive residues, a solvent can be used effectively to dissolve the deposit. Choice of solvent is critical, however, as certain coatings (particularly single packs) are very sensitive to solvents and will easily lose gloss, or worse still, dissolve. The most benign solvents recommended are methylated spirits, white spirits or isopropanol. Two-pack coatings, however, are generally resistant to most common solvents, so the choice of cleaning agent is much broader.
- A small test area should be checked prior to solvent cleaning to ensure that no softening or colour change will occur. Ensure the contact time for the solvent is minimal, and that the solvent and dissolved residues are thoroughly rinsed from the surface.

All organic finishes are prone to some degradation on outdoor exposure, and after long service some change of colour and gloss or chalking is expected. The integrity of the film and its protective qualities are generally not affected, however, and unless the coating is damaged, and/or shows signs of substrate deterioration, the coating can be left as is. If, however, the coating is in a shopping mall or residential or commercial building façade where aesthetics are important, the coating should be restored to the original appearance.

Maintenance of powder coatings may require only a "clean and polish" to restore shine and depth of colour. The integrity of very old or degraded powder coatings should be checked to establish whether a new coating system should be applied over the powder coating or whether the powder coating needs to be removed.

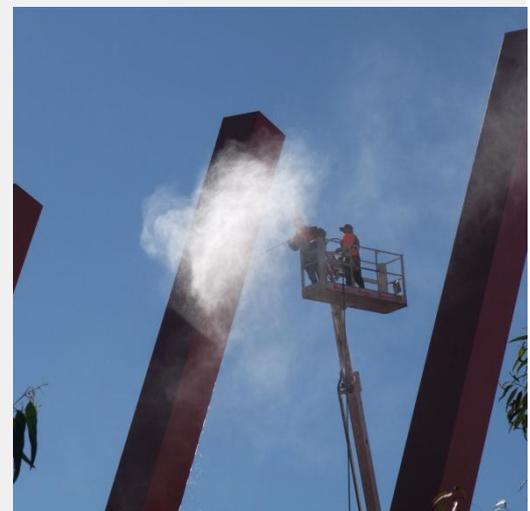
For powder coated aluminium or coil coated metals, refer to Dulux PC Tech Note 4.1.2 Painting over Powder or Coil Coatings.



Rapid response to graffiti reduces graffiti attacks.



MLC Melbourne received a thorough water wash before Surfaceshield® HD anti graffiti surface treatment was applied.



Melbourne's City link Gateway was high pressure water blasted to remove all loose paint prior to application of a protective coating (see next page)

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PREPARATION OF SURFACE FOR RECOATING

Whilst a “clean and polish” certainly can improve aesthetics, the existing coating system must be capable of adequate substrate protection for a reasonable time period.

Where the existing coating has degraded or delaminated to the extent that complete removal and recoating is the most practical solution, this should be accomplished before significant deterioration of the substrate occurs. Given the cost and inconvenience of replacing degraded substrates, complete removal of existing coatings and degraded or corroded substrate, and application of a high performance protective coating system is the best long term solution. In recoating, this process should be followed:

1. 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 relevant sections of AS1627.1 2003 Part 2.
2. Inspect to determine the degree of deterioration of existing coatings and presence of corrosion. Where coating appears sound, check adhesion using the standard cross-hatch test.
3. Mechanically remove all corrosion products. Chalky deposits, such as white rust (zinc corrosion products), may require the use of abrasive nylon pad. All red rust must be removed by power tool cleaning in accordance with AS1627.2 to clean, bright metal. Remove all abrasion products and dust. There are other handy mechanical options available for removing corrosion and deteriorated coatings such as **ultra high pressure water blasting**, **wet abrasive blasting** and bristle blasting.
4. Remove all coatings that are cracking, peeling, flaking or failed adhesion test (step 2) by mechanical abrasion or burning off as appropriate. Where coating is removed back to a well-adhered, hard edge, feather edges of the coating to remove visual ridges.
5. Where existing coating had passed adhesion test, abrade surface using a non-metallic abrasive nylon pad to remove gloss and to provide a uniformly roughened surface for the new coating system to adhere to.
6. Remove all matter resulting from the cleaning and abrading processes.
7. Spot prime any bare metal, if present, immediately and before the surface oxidises or becomes re-contaminated.

SUGGESTED STEEL RECOAT SPECIFICATIONS

One of the most robust coating specifications widely used on steelwork maintenance in many building and infrastructure sectors is the Dulux Protective Coatings specification below:

- Spot Primer: **Dulux Durebild® STE** @ 110 – 210 microns*
 First Coat: **Dulux Durebild® STE** @ 110 – 210 microns*
 Topcoat: **Dulux Weathermax® HBR** @ 75 – 100 microns
 *Film build will depend on substrate and environment

For powder coated aluminium or coil coated metals, refer to Dulux PC Tech Note 4.1.2 Painting over Powder or Coil Coatings.

Application must be done in accordance with the relevant product data sheets, available from www.duluxprotectivecoatings.com.au.

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



*South Morang Potable Water Tank maintained with **Durebild® STE** and **Weathermax® HBR***



*Goliath mobile crane gets a makeover with **Durebild® STE GF** and **Weathermax® HBR** to extend its service life and minimise future downtime*



*Melbourne's City link Gateway was painted in record time – with **Durebild® STE** and **Weathermax® HBR***