

MANAGEMENT, OPERATION AND MAINTENANCE OF POWDER COATED STEEL CONSTRUCTIONS

First Cleaning and removal of dirt

Cleaning should start at the time the products are installed, ensuring that construction materials such as concrete, plaster and paint splashes are removed before they have a chance to dry. Failure to remove these materials at this early stage will require the use of aggressive cleaning materials and techniques with potential damage to the powder coated surface.

The best method of cleaning is by regular washing of the coating using a solution of warm water and non-abrasive, pH neutral detergent solution. Surfaces should be thoroughly rinsed after cleaning to remove all residues. All surfaces should be cleaned using a soft cloth or sponge or a soft natural bristle brush. Cleaning of powder coated sections can be conveniently carried out at the same time as window cleaning.

Regular Cleaning

Usual maintenance cleaning can be done using water with mild detergent, ammonia containing alkaline washing detergent. For example, Panssipesu of Tikkurila or Peltipesu of Teknos. It should be noted that the use of unsuitable or excessively strong cleaning agents will damage the powder coating. Abrasive cleaning methods must not be used.

The frequency of cleaning depends in part on the standard of appearance that is required and also the requirements to remove deposits that could, during prolonged contact with either the powder film or the metal substrate (if exposed), cause damage.

Rainwater is usually sufficient to keep color coating clean. Impurities, such as stronger dirt should be cleaned off the steel installation once a year. Coating should be cleaned with a soft brush and water or high-pressure water (**<100 bar**). More stubborn dirt can be removed using a cleaning agent suitable for paint coatings. Difficult dirt spots can be removed with a cloth moistened in white spirit. The rinsing should be carried out from the top of the facade downwards after the cleaning agent has taken effect for a few minutes.

In severe environments, such as industrial or marine, the normal frequency of cleaning should be at a maximum of **three month** intervals.

Sheltered areas can be more at risk of coating degradation than exposed areas. This is because wind-blown salt and other pollutants may adhere to the surface and will not be cleaned away with rainfall. These areas should be inspected and cleaned if necessary on a more regular basis.

WARNING: Do not under any circumstances use strong solvents such as contact cleaners, thinners or solutions containing chlorinated hydrocarbons, esters or ketones.

Abrasive cleaners or cutting compounds should not be used. Do not use Acetates, Dulon Thinners, Methyl Ethyl Ketone (MEK) or Petrol products. Highly acidic cleaners are not recommended either.

Powder Coatings recommends the use of nothing stronger than white spirits to assist with stubborn stains. Cleaning with white spirits should be carried out in shade and during cooler temperatures using a soft cloth and gentle wiping only. It is also recommended that a small non-visible area be tested initially to ensure that no color change or damage will occur.

Annual inspection

Powder coated installations must be inspected regularly. If any defects are found in the coating they should be repaired immediately, in order to ensure long life time. The annual inspection should include the following procedures:

Visual inspection

Visual inspection of the coated surfaces should be carried out once a year as a general inspection. A more thorough inspection should be carried out every 5 years during the warranty period. The coated surfaces should then be inspected at a viewing distance of 1.5 meters. After the warranty period has expired, the surface should be inspected every two years.

Cleanliness of horizontal flashings

Check the cleanliness of horizontal flashings. Dirt and soil cause a corrosion risk by keeping the surface of the sheet wet. Dirty horizontal flashings also spoil the appearance.

Identification

Repairs fall into two basic categories, a repair due to lack of cleaning or staining and a repair required after external damage has occurred.

Rectification on site is possible for both small and large areas that may have suffered damage.

Repair and Materials

It is always worthwhile to repair any damage which occurs to the coating as soon as possible. Only paints suitable for repair painting of coatings should be used. If the damage reaches down to the primer coat only (steel material), one coat of paint is sufficient. If, however, the damage reaches down to the

zinc (if construction is galvanized), it is recommended that a second coat of paint be applied after the first coat is dry. When good result is wanted, it is important to take these factors into account:

- The adhesion properties and weather durability of touch-up paint.
- Gloss and color correspondence with powder coatings Most recommended touch-up paints are acrylates, acrylics and polyurethanes. As an example, Tikkurila's PanssariAkva. Recommended gloss is 10-20. Before painting the damaged area, it is recommended to clean the damage area with wet smooth cloth. After it is dried, touch-up painting can be done. It is recommended to use as small brush as possible. If there is more dirt at the scratch, it is recommended to clean with smooth cloth, which is treated with white spirit.

Usually the wet paint systems will be a two-component polyurethane or two component non-isocyanate acrylic based product. Again, to ensure a high quality, long lasting, finish is achieved an experienced and professional coater should be used.