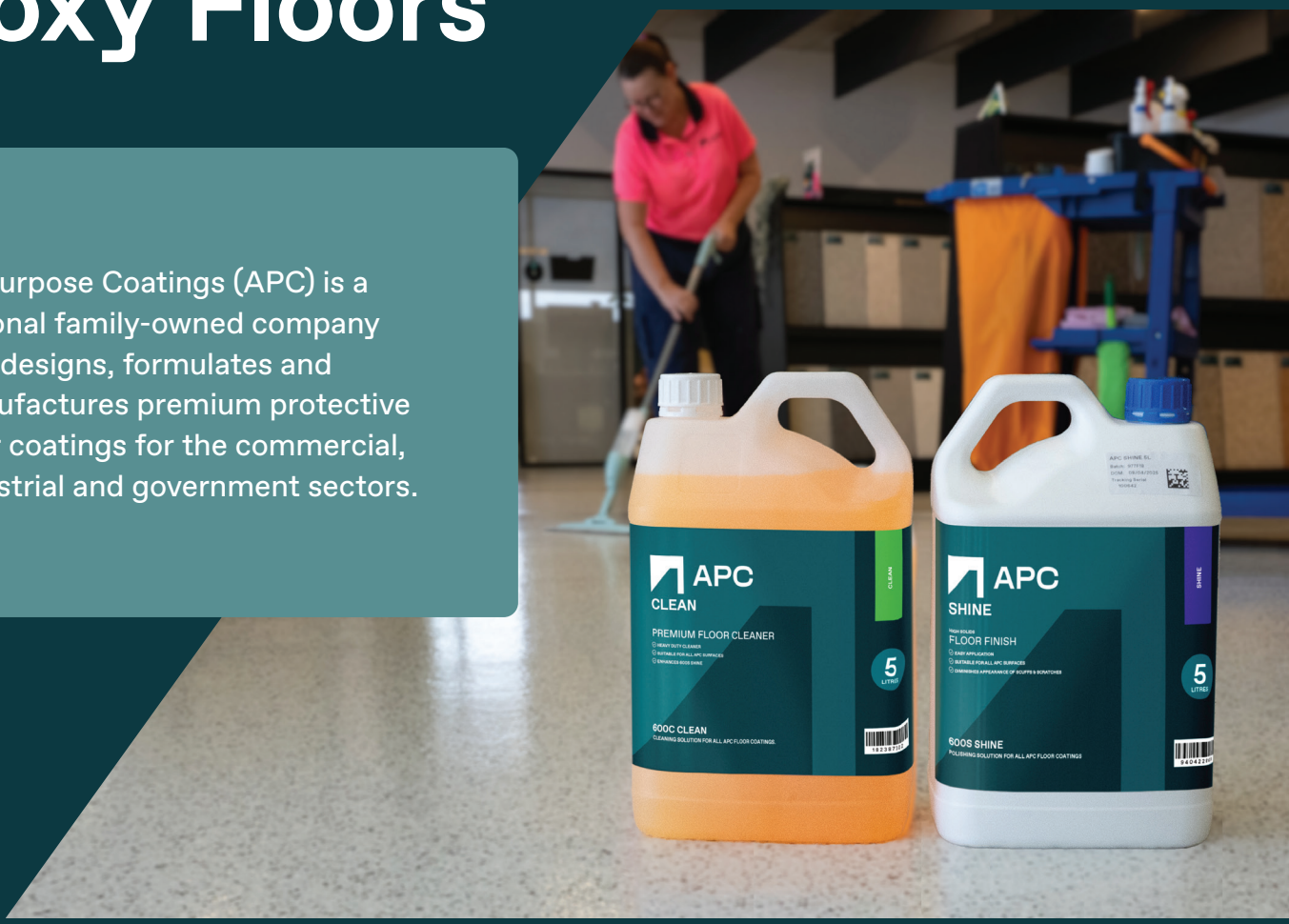
FROM AUSTRALIA'S LEADER IN PREMIUM FLOOR COATINGS

The *Complete* Guide to Commercial Cleaning of Epoxy Floors

All Purpose Coatings (APC) is a national family-owned company that designs, formulates and manufactures premium protective floor coatings for the commercial, industrial and government sectors.



ABOUT APC

Founder and CEO, Charmaine Ashford, along with Managing Director, Christopher Ashford, have an extensive history in the application & manufacturing industry from which they draw their knowledge.

APC products have been designed, developed, and tested in a wide range of conditions, from the small residential garage through to large civil projects, our passionate and driven team has kept pace with the modern market, emerging technologies & continues to redefine the coatings industry.

INTRODUCTION

APC uses a variety of resins to form the binder for their flooring systems. These include epoxy, polyurethane and polyaspartic resins. Each resin type offers different application characteristics, resulting in a different performance and behaviour of the floor coating.

The **Building Code of Australia (BCA)** sets a national standard to minimise risks associated with floor coatings in commercial and industrial settings, particularly in high traffic areas, access and exit points, wet or damp zones, greasy stairs and walkways, platforms, ramps and emergency exits.

It is important to consult with the floor coating to determine the factors that affect the selection of resin for a specific application.

Epoxy resin floors are hard wearing systems. However, maintaining their performance requires a tailored cleaning program agreed upon in advance.

This cleaning program should consider several factors, including the type of epoxy resin system applied, the type and frequency of traffic, the nature and frequency of soiling and any specific hygiene requirements.

Without proper consultation, pedestrians are vulnerable to injury, while employers and building owners may be exposed to costly legal and financial liabilities.

1. AN EFFECTIVE CLEANING PROGRAM

4 Fundamental Components

Protective coating floor cleaning can be considered as having four fundamental components, which should work together to ensure the longevity of the coating.

A cleaning regime should specify the type of equipment to be used, the cleaning chemicals, the frequency of cleaning, and include an appropriate risk assessment along with instructions for the use of PPE.

Each program is tailored to the specific conditions of the floor.

To maintain the intended performance and meet hygiene requirements, it is essential that the user implements the appropriate cleaning regime. The balance of the four components may vary for each system; for example, if the contribution of one parameter is limited, it can often be compensated by increasing the input from the others.

For instance, manual cleaning provides high mechanical action but short contact time, whereas pre-soaking stubborn soiling increases contact time, reducing the need for kinetic energy.

Cleaning costs are often misunderstood as the cost of the cleaning chemicals themselves. In reality, studies suggest that 70% of cleaning costs can be attributed to labour, 12% to equipment and 12% to water, effluent, corrosion and heating with only 6% the cleaning chemicals themselves. Cleaning chemicals are therefore only a relatively small portion of the total cost and price should not be the main focus when specifying products.

Quality products like APC's 600C Clean & 600S Shine will result in a quality outcome.

1.1 Mechanical (Kinetic) Energy

Mechanical energy is used to physically remove soiling through methods such as scraping, brushing, mechanical scrubbing and pressure jet washing. Higher energy inputs may be achieved with high pressure washers, hot water washers or steam cleaners; however, caution is needed on older or worn surfaces. This approach is generally suitable only for thicker epoxy resin flooring systems, such as the Matrix System.

1. AN EFFECTIVE CLEANING PROGRAM

4 Fundamental Components

1.2 Chemical Energy

Chemical energy is applied through detergents that break down the soiling, making it easier to remove and suspend in solution.

The chemical component will dissolve the type of soiling or contamination present.

Successful cleaning also relies on the effective removal of dirty water and thorough rinsing.

Epoxy resin flooring is not affected by most pH-neutral cleaning products when used according to the manufacturer's instructions.

APC's Clean & Shine products are specifically formulated to work directly with APC Systems.

It is important that clean water is used for rinsing.

HINT: A small spot test in an inconspicuous area is recommended before applying any new cleaning product.

1.3 Thermal Energy

Detergency is enhanced by increasing temperature. Higher temperatures can accelerate chemical reactions, increase soil solubility and reduce the bond strength between soiling and the surface. Technical Data Sheets should be consulted for information on temperature tolerances of the materials used.

1.4 Time

For cleaning processes involving mechanical, chemical and thermal energies, the longer the time period applied, the more effective the cleaning process.

Should any of the factors vary e.g. the type of soiling, then a change in cleaning chemicals may be required.

2. GENERAL CLEANING INFORMATION

Epoxy and Urethane floors will not generate dust as concrete surfaces do. However, dust will still settle on the surface from other sources, such as fit-out trades, overhead beams, air movement from outside, internal processes, or goods being brought in.

Floors that are regularly cleaned will last longer, and both slip resistance and appearance can only be maintained with consistent maintenance.

Fine particles of dust, dirt and debris act as abrasives under traffic unless the floor and can damage the floor unless removed.

In industries such as pharmaceuticals, cosmetics and food production, it is particularly important to maintain hygienic surfaces and proper cleaning techniques are essential. In engineering environments, metal swarf is particularly abrasive and if not promptly removed, can cause significant damage in a short period of time. To maintain a clean, safe and healthy environment, proper management is required including suitable cleaning and vacuum removal, dust control systems and routine manual or mechanical sweeping as required.

Entrance matting is recommended, as it reduces cleaning requirements and enhances the longevity of the floor when paired with correct maintenance.

HINT: All cleaning should begin with the removal of gross visible soil or contamination. This can be achieved in several different ways, depending on the level and type of soiling/contamination present e.g. stiff bristled broom, rubber squeegee, dustpan & brush, microfibre mop or vacuum cleaner.

SURFACE SCRATCHING AND POLISHING

Scratches or scuffs may appear over time as part of general wear and tear. These can be minimised, and further scratching reduced, by applying a floor polish. After cleaning your surface, use a floor polish such as APC 600S Shine or equivalent. It is advised to apply one or more coats to provide additional protection.

HIGH GLOSS SURFACE ADVISORIES

High gloss surfaces such as Metallic Marble, Plain Epoxy or Diamond Finish Ultra Flake and Hyper Flake are more susceptible to visible scuffing and scratching due to their reflective appearance and the abrasiveness of grit and dirt. Regular use of APC 600C Clean and APC 600S Shine is recommended to maintain the original high end gloss finish.

It is not recommended to move heavy furniture without mechanical assistance. Rubber or felt furniture feet should be fitted on all moveable furniture, such as dining room chairs and stools, to prevent surface damage.

3. TYPICAL CLEANING METHODS

3.1 Mop & Bucket

Many cleaners still rely on a mop and bucket for daily cleaning. While this method may be suitable for removing liquids, loop or cut-end mops provide very little agitation and are not effective for proper floor cleaning. Flat microfibre mops or mops which include a non-scratch scouring pad to agitate stubborn marks can deliver better results.

Mops are best reserved for spillages and should not be used as the main method of routine floor cleaning.

In everyday use, mop and bucket systems often spread soiling rather than remove it, as the water is changed infrequently. This results in dirty water being reapplied to the surface, leaving behind a film of dirt across the floor.

Mops are particularly unsuitable for textured floors, which should instead be cleaned with mechanical scrubbing equipment or high pressure washing where appropriate.

3.2 Scrubbing - Manual

1. Sweep floor to remove loose debris and accumulations of soil.
2. Select the appropriate cleaning agent (detergent, deodoriser, degreaser, emulsifier, sanitiser).
3. Dilute and apply the cleaning agent in accordance with the manufacturer's instructions, allowing time for it to react with the surface.
4. Agitate the surface by hand using a stiff brush.
5. Flood with clean water and scrub.
6. Remove dirty water with a wet vacuum or squeegee to floor drains.
7. Contaminated water may need to be disposed of as hazardous waste. Always observe regulations, prohibiting the introduction of certain chemical cleaners, solvents or waste into surface water drains, sewer systems, open bodies of water or soil.
8. Rinse the floor again with clean water and remove.

3. TYPICAL CLEANING METHODS

3.3 Scrubbing - Mechanical

This method is preferred for resin and urethane floors as it ensures:

- Controlled application of cleaning agents
- Effective scrubbing action
- Continuous supply of clean water
- Continuous removal of dirty water
- Rapid drying of the floor

Specialist scrubbing machines, such as combined vacuum scrubbers or rotary scrubbers, provide efficient and effective cleaning. There are two main types: Vertical axis scrubbers are ideal for smooth floors and horizontal axis scrubbers are generally preferred for textured or anti-slip surfaces.

1. Sweep the floor to remove loose debris and accumulations of soil.
2. Select an appropriate cleaning agent (detergent, deodoriser, or combination of agents). For routine cleaning, use a lowf foam, pH-netural detergent in the machine's detergent tank.
3. Apply the cleaning agent diluted as required, allowing time for reaction on the surface.
4. Agitate mechanically using the floor scrubber.
5. Remove dirty water with wet vacuum.
6. Always observe regulations, prohibiting the introduction of certain chemical cleaners, solvents or waste into surface water drains, sewer systems, open bodies of water or soil.
7. Rinse and scrub again, then vacuum clean and dry.

The choice of brushes or pads will usually be determined by the profile of the floor and the degree of soiling.

3. TYPICAL CLEANING METHODS

3.3 Scrubbing - Mechanical

Brushes are best suited to floors with a raised anti-slip finish or significant texture. However, care should be taken by the operator to raise abrasive pads or brushes off the floor when stationary, as permanent ring marks may occcur if left in contact with the surface.

HINT: RED coloured pads are generally sufficient for cleaning most floors. Care should be taken when using coarser pads (such as black pads) as they can abrade the surface.

Colour	Purpose	
Black	Stripping	Heavy-duty stripping. Quickly removes dirt, wax, floor finishes and sealers. Use with any stripping agent.
Green	Scrubbing	Light stripping and wet scrubbing. Effictively removes dirt and scuff marks.
Blue	Cleaner	Wet scrubbing or heavy-duty spray cleaning. Provides thorough cleaning, removing dirt and scuffs. Will also remove top of surface finish in preparation for re-coating.
Red	Spray Buff	Use for a smooth, shiny finish while removing light dirt. Typical spray cleaning and buffing pad.
Tan	Polishing	Dry polishing or buffing pad. Removes light dirt while shining floors. Ideal for areas with light traffic.
White	Super Polish	Supreme fine pad for polishing dry floors. Use on soft finishes for superior polish. Excellent on lightly waxed floors. Produces a high gloss finish and is suitable for ultra-high-speed cleaning machines, maintaining surface integrity while removing light dirt.

3. TYPICAL CLEANING METHODS

3.4 Diamond Impregnated Pads (for smooth resin floors)

Pads impregnated with microscopic diamonds are used to clean and maintain resin floors without the need for chemicals. These pads are fitted to rotary cleaning or burnishing machines and can be used either dry or, preferably, with the addition of water.

Pads are available in a range of sizes to fit different machine widths and in several grades, depending on the level of surface contamination and the degree of shine required.

The benefits of diamond pads are as follows:

- Clean and polish floors simultaneously in a hygienic manner.
- Eliminate the need for potentially environmentally unfriendly chemicals, including polishes and waxes.
- Can be used to enhance sheen levels.
- Avoid leaving a slippery chemical residue.
- Washable and reusable.
- Can remove light scratches and staining from resin flooring.

The preferred method of use is as follows:

1. Sweep the floor to remove loose debris to prevent damage to the floor or pad.
2. Fit pad to machine - often simply placing it under the machine, with weight holding it in place.
3. Start the machine.
4. Introduce water. Pads may be used dry, but using water prolongs pad life and improves the floor finish.
5. After use, wash, dry and store pad properly. When maintained correctly, a pad can clean thousands of square metres.

The correct grade of pad should be chosen based on the floor condition and the desired finish. For heavily contaminated, scratched or stained floors, or to achieve a set finish, a staged approach is recommended, starting with the coarsest grade and progressing to finer pads.

HEAVY/DEEP CLEAN

APC supplies pads specifically designed for heavy duty, deep cleaning of epoxy floors.

Important: Using the wrong pad can be ineffective or cause floor damage. Always follow the manufacturer's or supplier's recommendations.

3. TYPICAL CLEANING METHODS

3.5 Pressure Washers & Steam Cleaning Equipment

Care should be taken when selecting equipment, as pressure washers and steam cleaners can be extremely powerful. Proper training is essential to ensure safe operation.

1. Sweep the floor to remove loose debris and accumulations of soil. Pre-wet the surface.
2. Apply the appropriate cleaning agents, such as detergent, deodoriser, degreaser, emulsifier, followed by a bactericide (disinfectant) or sanitiser if required.
3. Steam cleaners may require special cleaning agents. Apply cleaning agent (or combination of agents) diluted as required and allow it to react on surface.
4. Using the pressure washer or steam cleaner, work over the entire surface of the floor in a planned sequence to agitate and loosen hard-to-remove soiling or contamination.
5. Flood the floor with clean water and work the surface again.
6. Observe all regulations which prohibit the introduction of certain chemical cleaners, solvents and waste into surface water drains, sewer systems, open bodies of water or into the soil.
7. Rinse again thoroughly and remove.

For food processing areas, follow the equipment manufacturer's guidelines.

It should be clearly understood, particularly when steam cleaning, that it is always advisable to check with the contractor/manufacturer as to the suitability of the floor for steam cleaning. Care should be taken to ensure the steam lance is not allowed to discharge onto a single area for more than a few seconds, sufficient to remove contamination.

3.6 CLEAN THE CLEANING EQUIPMENT

After use, cleaning equipment should be thoroughly cleaned to prevent it from becoming a potential source of contamination. Inspect the equipment visually for any damage that oculd mark or damage the flooring.

4. STATIC CONTROLLED FLOORING

Routine cleaning and general wear can alter the electrical properties of static controlled flooring. Therefore, routine test methods, the frequency of tests and the agency responsible should be agreed upoin before project completion. The manufacturer should also be consulted for guidance on suitable cleaning methods, materials, polishes and other maintenance products.

Special care should be taken when selecting polishes, as some may act as insulators. Using inappropriate cleaning regimes can compromise the antistatic performance of the floor.

5. CLEANING CHEMICALS & THEIR SELECTION

When selecting cleaning chemicals for protective coating flooring, it is essential that the detergent is compatible with the floor surface and capable of removing the type of soil present without leaving any residue. Cleaning products must always be pH neutral.

It is recommended to clean the surface with 600C Clean first and follow with 600S Shine.

- Cleaning chemicals must always be pH neutral.
- APC 600C Clean is a premium pH neutral cleaning solution designed to be used in conjunction with 600S Shine to reduce the appearance of scuff marks and scratches, leaving your coatings looking brand new.
- 600C Clean may be used as a stripper to remove existing protective cleaning products or heavy contamination.
- The 5L concentrate of 600C Clean allows the user to vary the level of concentrate required.
- 600S Shine is a premium ready-to-use, high solids, water-based floor polishing solution.
- Both 600C Clean and 600S Shine are designed for use with all APC Coating Systems.

5. CLEANING CHEMICALS & THEIR SELECTION

- Both 600C Clean and 600S Shine are available in two sizes, a 750mL spray bottle and a 5L jerry. The spray bottle is ready to use, the 5L will need to be diluted prior to use.
- Using the 'ready to use' spray bottle, 600C Clean can be applied straight to the floor, mop to clean. This will provide a light to medium clean.
- A scrubbing machine or Polivac can be used with these products. If using a Polivac, the black pad is recommended.
- A brush head can be used to scrub.
- 600C Clean can be rinsed.
- 600C Clean is only used to clean and will not polish. 600S Shine should be used after 600C Clean to polish the floor or surface.

Most cleaning products are formulated to be effective against a range of soiling. Some, however, are very specific in terms of the types of contamination that they are designed to remove. This is more often the case with the biological products which are targeted against specific contaminants such as fats or oils.

Some cleaning materials can adversely affect a floor surface if used at the wrong concentration, potentially causing etching, softening, reduction in gloss, or other damage to the coating or its finish.

If APC 600C Clean and 600S Shine are not being used, it is recommended to verify that any alternative detergents are suitable for the flooring type, effective at removing soiling and do not react negatively with the surface.

Specialist cleaning products are available for a variety of applications including the cleaning of antistatic surfaces, and the removal of polishes, chewing gum, tyre marks, stains, oils, fats and greases. In addition, there are products that are designed to have a specific effect such as sterilisation, bactericidal activity and disinfection.

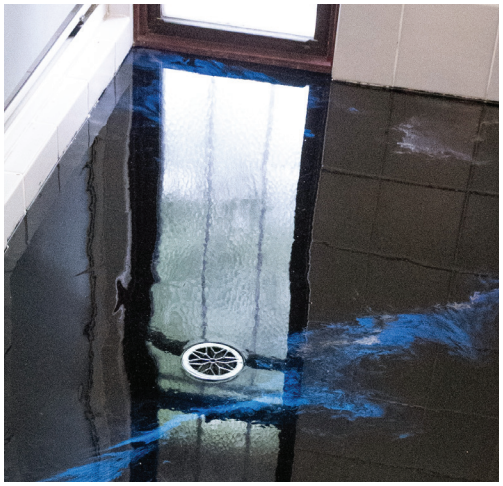
6. HEALTH & SAFETY

A variety of hazardous detergents may be used in the cleaning program. Before use, the safety data sheet should be consulted and an OSH assessment carried out. Employers must provide safe storage facilities for chemicals and appropriate PPE for the operatives handling these chemicals, such as protective eyewear, aprons, gloves and in some cases respiratory protection. Protective footwear with good traction may be necessary, especially if alkaline detergents are used as these can make floors slippery.

7. MAINTENANCE

If the correct cleaning and maintenance schedule is followed, the appearance of your floor can be easily preserved.

For floors with a high gloss finish, such as APC's Showroom Finish or Metallic Marble System, it is recommended to apply a sacrificial layer of an acrylic polish like APC Shine. This will help to maintain the high gloss apperance and provides a hard wearing surface. It also allows for the removal of surface scratches or blemishes and helps preserve slip resistance characteristics.



Once applied, this seal should be maintained using a product like APC's 600S Shine, which cleans the floor while protecting the finish.

Occasionally, it may be necessary to remove the polish using a stripping product and reapply, particularly when excessive scratches or blemishes occur.

8. SPILLAGES

Spillages of any liquids should be wiped up or absorbed and removed as quickly as possible. This not only meets health and safety responsibilities but also helps maintain the floor in good condition. Once the spillage has been cleared, the area should be cleaned as usual with the standard floor cleaner.

If a sacrificial coat has been previously applied, the floor should be inspected to ensure it remains intact. Any damaged coating should be stripped and reapplied. It is also important to note that water left behind from cleaning can create a slippery surface, so appropriate care should be taken.

9. TYPES OF RESIN FLOORING AND TYPICAL CLEANING METHOD

	Name	Duty	Thickness	Cleaning
1	**Floor Seal e.g. Cut & Coat Liquathane®** Applied in two or more coats. Generally solvent or water borne.	Light	Up to 150µm	Wash and vacuum dry
2	**Floor Coating e.g. Plain Coat Epoxy** Applied in two or more coats. Generally solvent free.	Light/ Medium	150µm to 300µm	Wash and vacuum dry
3	**High Build Floor Coating e.g. Hyper Flake® or Ultra Flake® Systems** Applied in two or more coats. Generally solvent free.	Medium	300µm to 1000µm	Mechanical scrubber / dryer satisfactory but not with regular use of abrasive pads
4	**Multi-Layer Flooring e.g. 1-2mm Matrix System** Aggregate dressed systems based on multiple layers of floor coatings or flow-applied floorings, often described as 'sandwich' system.	Medium/ Heavy	> 2mm	Rotary brush / vacuum machine
5	**Flow Applied Flooring e.g. Metallic Marble®** Often referred to as 'self-levelling' flooring and having a smooth surface.	Medium/ Heavy	2mm to 3mm	Gloss - wash and vacuum Matte - scrubber / dryer
6	**Epoxy Screed Flooring e.g. Ceramic Screed** Trowel-finished, heavily filled systems, generally incorporating a surface seal coat to minimise porosity.	Medium/ Heavy	> 4mm	Scrubber / dryer
7	**Heavy Duty Flowable Flooring e.g. Self-level Screed** Having a smooth surface.	Heavy/ Very Heavy	4mm to 6mm	Scrubber / dryer
8	**Heavy Duty Resin Flooring e.g. 6mm Matrix** Trowel-finished, aggregate filled systems effectively impervious throughout their thickness.	Very Heavy	> 6mm	High pressure washer or scrubber / dryer

9. TYPES OF RESIN FLOORING AND TYPICAL CLEANING METHOD

Light Duty	Light foot traffic, occasional rubber tyred vehicles
Medium Duty	Regular foot traffic, frequent forklift truck traffic, occasional hard plastic-wheeled trolleys
Heavy Duty	Constant forklift truck traffic, hard plastic wheeled trolleys, some impact
Very Heavy Duty	Severe heavily loaded traffic and impact

10. GENERAL TIPS & ADVICE

Do	Don't
Consider giving a higher frequency of maintenance to heavily trafficked areas (e.g. entrances) where the levels of grit, dirt and wear are highest. Heavily trafficked areas need more attention	Use excess concentrations of cleaning agents - exceeding the manufacturer's recommended dosage is at best pointless and expensive, and at worst harmful.
Clean regularly	Use excessive water.
Carry out an initial clean before use and take care when installing equipment	Use synthetic scrubbing pads on textured resin floor finishes. These industrial finishes will cause rapid destruction of the pads.
Clean up spillages immediately.	Use solvents.
Remove traces of oil and grease immediately with an aqueous solution of alkaline detergent.	Use phenol-based cleaning chemicals. They will cause degradation of resin floor surfaces.
If the resin floor has a textured surface - do not use mops.	Mix cleaning chemicals and agents - this can also be harmful.
Use the best quality equipment and chemicals available.	
Ensure that cleaning equipment is regularly cleaned.	
Follow the instructions provided by the manufacturers of the flooring, chemicals and cleaning equipment.	

APC acknowledges FeRFA, the Resin Flooring Association in the UK for the information in this guide.

APC

Redefining the coatings industry

More questions?

Please contact us or visit our locations

QLD - VIC - NSW - WA

HQ - 16 Hawkins Crescent, Bundamba QLD 4304

1800 437 699 | ALLPURPOSECOATINGS.COM.AU