

GUIDE TO CLEANING RESIN FLOORS





Michigan Specialty Coatings is the leading provider of concrete finishing and floor coatings solutions for industrial and commercial markets.

CONTENTS

1. IMPORTANCE OF MAINTAINING YOUR FLOOR 2
2. CLEANING 3
2.1 General cleaning..... 3
3. TYPICAL CLEANING METHODS..... 4
3.1 Mop and Bucket 4
3.2 Scrubbing - Manual 4
3.3 Scrubbing - mechanical..... 4
3.4 Pressure Washers or Steam Cleaning Equipment..... 5
4. STATIC CONTROLLED FLOORING..... 5
5. CLEANING MATERIALS 5
5.1 General Cleaning Materials 6
6. WASTE DISPOSAL 6
7. MAINTENANCE..... 6
8. DAMAGE..... 7
9. TYPES OF RESIN FLOORING AND TYPICAL CLEANING METHOD..... 8
10. GENERAL TIPS & ADVICE 9

1. IMPORTANCE OF MAINTAINING YOUR FLOOR

Routine, easy-to-follow maintenance extends the life of this significant investment you have made. Clean, bright and shiny floors are a reflection of your brand and a commitment to cleanliness which is why keeping your floors well maintained is important.

- Proper maintenance will prolong the life of your floor coatings
Frequency of maintenance will depend on your work environment and the amount of dirt and soil that accumulates on your floor
Dirt and dust are abrasive and quickly dull the finish and decrease the life of your coating
Harsher environments will require frequent floor cleaning
Implementing a good floor care program will help maintain the appearance of your Tennant coated floor and also help minimize any safety hazards

Michigan Specialty Coatings - 5407 Gratiot Avenue, Saint Clair, Michigan 48079 USA - 1-866-45EPOXY - sales@mscfloors.com

Although care has been taken to ensure, to the best of our knowledge, that all data and information contained herein is accurate to the extent that it relates to either matters of fact or accepted practice or matters of opinion at the time of publication, Michigan Specialty Coatings assumes no responsibility for any errors in or misrepresentation of such data and/or information or any loss or damage arising from or related to its use.

2. CLEANING

Floor cleaning can be thought of as having two components, a mechanical component and chemical component, these two components should work together to mutual advantage.

The mechanical component – energy – may be applied to the floor by hand with a scrubbing motion. Usually the input is by mechanical agitation, a floor scrubber. High energy inputs may also be achieved by using high pressure washers, hot water washers and steam cleaners.

The chemical component, cleaning solution, will dissolve or emulsify the type of soil or contamination present. Once this has taken place the removal of the dirty water and rinsing of the floor are key to successful cleaning. It is important that clean water is used for rinsing.

Resin flooring will not be affected by most generally available special purpose cleaning materials, when these are used in accordance with the Chemical Cleaning Manufacturers' instructions and the floor rinsed properly with clean water. Specific cleaning instructions should also be sought from the resin flooring manufacturer.

A small spot test in an inconspicuous area is a worthwhile precaution before applying any new cleaning product.

The cleaning regime should specify the type of equipment to be used, the type of cleaning chemicals to be used and the frequency of the cleaning.

Each cleaning regime will be specific for a particular set of conditions. Should any of the factors vary e.g. the type of soiling, then a change in the cleaning chemicals may be required. In order that the floor continues to provide the intended performance and meets the hygiene requirements, then it is essential that the user implements the appropriate cleaning regime

2.1 GENERAL CLEANING

Resin floors will not dust. However, dust will settle on the floor from other sources (e.g. dusty beams above, blown from outside, from processes, brought in on goods).



Floors which are kept clean will last longer. Fine particles of dust, dirt, debris, act as abrasives with traffic unless the floor is cleaned regularly. For the pharmaceutical, cosmetic and food industries it is particularly important to maintain hygienic surfaces, proper cleaning techniques are essential. In engineering works, metal shavings are particularly abrasive and if not removed from the floor, can cause damage in a short space of time.

Thus, to maintain a clean, safe and healthy environment, proper management is required including suitable cleaning/vacuum removal and dust control systems (e.g. mats), in addition to routine manual/mechanical sweeping as required.

3. TYPICAL CLEANING METHODS

3.1 MOP AND BUCKET

Over 300,000 cleaners daily in the US still use the mop and bucket

This should be the cleaning method for dealing with spillages, but is not for routinely cleaning the floor. In normal every day usage the mop and bucket may remove heavy soiling but typically the water is changed infrequently with the result that the floor is usually wiped with dirty water and a film of dirt spread uniformly across the floor

3.2 SCRUBBING – MANUAL

- Sweep floor to remove loose debris and accumulations of soil.
- Use the appropriate cleaning agent - detergent, deodorizer, degreaser, emulsifier.

- Apply cleaning agent diluted as required and in accordance with manufacturer’s instructions, and allow it to react on the surface.
 - Agitate by hand using a stiff brush.
- Flood with clean water and scrub.
- Remove dirty water with wet vacuum or squeegee to floor drains.
- Contaminated water may be required to be disposed of as hazardous waste.
 - Observe all regulations, which prohibit introduction of certain chemical cleaners, solvents and wastes into surface water drains, sewer systems, open bodies of water or into the soil.
 Rinse again and remove.

3.3 SCRUBBING - MECHANICAL

This is the preferred method for cleaning resin floors, to ensure:

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



Scrub floors weekly or as often as needed to prolongs the life of your floor coating

- High traffic areas such as aisle ways and areas where oil and grease are frequently used may require daily scrubbing
- Use the correct dilution rate recommended for your scrubbing equipment or detergent
We recommend Tennant Scrubbers: www.tennantco.com

TYPE OF SCRUBBER	DILUTION
Tennant automatic scrubber (National Floor Safety Institute certified - NFSI)	Tennant liquid detergents 1% - 3%
Tennant FaST automatic scrubber (uses >70% less water than conventional scrubbers)	See FaST Selector Guide for proper detergent guidelines
ec (Electrically Activated Water technology scrubber) -H2O	Do not add conventional floor cleaning chemicals to the EAW solution (Ensure scrubber tank should be free of conventional cleaning chemical residue)



Equip your automatic floor scrubber with the correct brush or pad to protect your floor finish

- Use soft nylon brushes and white or red pads
- Do not use stiff brushes or pads, which will dull or scratch your coated surfaces

The choice of using brushes or pads will usually be determined by the profile of the floor and the degree of soiling. Brushes are normally better on floors with raised non slip finish, and floors with a significant texture. However, care should be taken by the operator to raise abrasive pads or brushes off the floor when stationary since permanent ring marks may result when the machine stops in one position.



A wide range of pads are available for specific tasks.



- BLACK** Heavy duty stripping, quickly removes dirt, wax, floor finish and sealers. For use with any stripping agent.
- GREEN** Light stripping and wet scrubbing. Thoroughly removes dirt and scuff marks.
- BLUE** Wet scrubbing or heavy duty spray cleaning. Gives the floor a thorough scrubbing removing dirt and scuffs. Will remove top of surface finish ready for re-coating.
- RED** Use for smooth shiny finish whilst removing light dirt. The typical spray cleaning/buffing pad.
- TAN** Dry polishing/buffing pad. Removes light dirt whilst shining floors. Especially good in light traffic areas.
- WHITE** Supreme fine pad for polishing dry floors. Use with soft finishes for superior polish. Excellent on softly waxed floors. Produces high gloss finish. Also suitable as ultra high speed cleaning pad with exceptional dimensional stability for use with ultra high speed machines. Will remove light dirt whilst maintaining high gloss finish

The above is a general guide only, it is always recommended to seek the manufacturer's specific advice.

3.4 PRESSURE WASHERS OR STEAM CLEANING EQUIPMENT

Care should be taken to select suitable equipment. These pieces of equipment can be extremely powerful, proper training should be given to ensure they are used safely.

- Sweep floor to remove loose debris and accumulations of soil. Pre-wet floor.
- Use the appropriate cleaning agent - detergent, deodorizer, degreaser, emulsifier, bactericide.
- Steam cleaners may require special cleaning agents.
Apply cleaning agent (or combination of agents) diluted as required and allow it to react on surface.
- Using the pressure washer or steam cleaner, work the entire surface of the floor in a planned sequence. This will agitate and loosen hard-to-remove soil or contamination.
- Flood with clean water and work over the floor surface once again.
- Observe all regulations, which prohibit introduction of certain chemical cleaners, solvents and wastes into surface water drains, sewer systems, open bodies of water or into the soil.
- Rinse again and remove.
- For food processing areas reference should be made to the recommendations of CCFRA, (Camden and Chorley Wood Food Research Association)

It should be clearly understood, when steam cleaning or pressure washing, that it is advisable always to check with the contractor/manufacturer as to the suitability of the floor for constant steam cleaning.

4. STATIC CONTROLLED FLOORING

Routine cleaning and wear may alter the electrical properties of flooring. Therefore, routine test methods and frequency of tests should be agreed before completion, as should the agency responsible for these tests. The manufacturer should be contacted for their recommendations regarding cleaning methods, materials, polishes etc. In particular, selection of polishes should be done with care as some may act as insulators. The use of inappropriate cleaning regimes may compromise the antistatic performance of the floor.

5. CLEANING MATERIALS

There is a wide range of materials available in the market-place for the cleaning of floors; many of these are complex blends of chemicals some of which have very specific application requirements

Most cleaning products are formulated to be effective against a range of materials. 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 bio-products which are targeted against specific contaminants such as fats or oils. Similarly, some cleaning materials

may have an adverse effect on a specific surface if used in the wrong concentration, giving rise to etching, softening or other damage to the surface or body of the finish. This can be a one off effect or cumulative as a result of repeated activity. It is therefore recommended to check suitability of cleaning materials with the resin flooring manufacturer or to choose from their recommended range of cleaning products.

5.1 GENERAL CLEANING MATERIALS

Commercial products may contain one or more of the following groups:

Surfactants

Organic molecular materials that are surface active agents, with one end being oleophilic (oil attracting), and are designed to encompass contamination and allow it to be taken into the cleaning water and washed away from the surface.

Acid/Alkali Cleaners

Alkali cleaners are used for grease and film removers for hard surfaces. Acid based cleaners are used for the removal of scale and water deposits.

Conditioning Agents

Materials that modify the wash water such as sequestering agents, pH control agents, water softening or conditioning agents. These move the aqueous environment into the conditions that allow the active materials to work most effectively. This may be in the form of acid or alkali, complex phosphate or pH buffering mixtures

Specific Additives

These will include either conventional solvents such as iso-propanol or more specialized materials such as citrus oils and pine oils that have multifunctional benefits by providing both solvency and also perfume to the product. Enzymes can also be added which are designed to attack some specific materials or contaminants Colorants and synthetic perfumes and re-odorants are also added to products.

Biologically Based Products

There are also ranges of products in the market place based on a wide variety of materials some of which are labelled as containing or based on natural products, with claims for environmentally friendly properties. These can be derived from natural surfactants, colloidal materials, natural oils and plant extracts and enzymes which are blended together to achieve specific performance.

Specialist Products

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

6. WASTE DISPOSAL

Due consideration should be given to the disposal route for waste water produced during the floor cleaning process. Even though environmentally friendly products may have been used it should not be assumed that the waste water generated is able to be disposed of through the normal drainage system. This will depend on the level and type of contamination present in the solution, the disposal point and the quantities being produced.

7. MAINTENANCE

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

For floors with a high gloss finish it is acceptable practice to lay a sacrificial layer of an acrylic polish, which will keep the high gloss finish, give a hard wearing surface, have the ability to allow for the removal of surface scratches or blemishes, and where carefully selected, will maintain slip resistant characteristics. Once applied, this seal should be maintained using a product designed to clean your floor along with carrying properties to re-enhance and protect the finish.

It may be necessary to occasionally remove the polish and start a fresh. This can be achieved by using a stripping product. This should be selected to ensure removal of any existing polish without detrimental effect upon the flooring system and any slip resistant characteristics

8. SPILL DAMAGE

Liquid spills are safety hazards and should be cleaned up immediately. Wipe, mop or use automated equipment, depending on size of the spill. Mop or scrub the area to remove sticky or greasy residues as soon as possible to prevent accumulation of dust and dirt that can damage floor.

Spills of caustics, acids and solvents should be cleaned immediately and thoroughly. Harsh liquids that remain on the floor may soften, discolor, or remove coating or sealer. Always wear personal protective equipment for chemical spill clean up

8.1 STAIN PREVENTION AND REMOVAL

- Stains can be prevented by cleaning spills immediately
- Most stains can be minimized or removed without further damage to your floor
 - Use mild solution, progressing to stronger removers until the stain disappears
 - Inks, dyes and stains resulting from chemical attack may never be removed
 - Wear rubber gloves and eye protection when working with cleaning chemicals
- For tough stain use your Detergent in diluted form:
 - Pour a small amount on the area and agitate with a soft nylon bristle brush
 - Tough stains may require additional time and scrubbing

8.2 RUBBER MARKS AND BURNS

- Rubber marks are deposits of rubber on or near the surface of the floor coating
 - In most cases, these can be removed by scrubbing with a strong concentration of a solvent-based detergent (orange/yellow) and water
- Rubber burns show on the surface of coating caused by heat and friction from spinning tires
 - In most cases, these cannot be removed
 - Keep floors clean to keep tires from slipping and spinning on your floor
- Tire stains (plasticizer marks aka paw-printing) are caused by tires sitting on top of a coating and an exchange of chemical components between the non-rubber tire and the coating when they are in contact for an extended time
 - These types of markings are impossible to remove
 - Place a barrier between the tires and coatings to prevent this (wax or mats)
 - Recoating of the area is the only way to eliminate these



8.3 SCRATCHES AND GOUGES

- Scratches and gouges can shorten the life of floors when moisture seeps into cracks, resulting in peeling of the coating
- Avoid sliding heavy machinery, pallets, or sharp objects across the floor

9. TYPES OF RESIN FLOORING AND TYPICAL CLEANING METHOD

Type	Name	Description	Duty	Typical thickness	Typical Cleaning
1	Floor seal	Applied in two or more coats. Generally solvent or water borne	LD	Up to 6 mils	Wash and vacuum dry
2	Floor coating	Applied in two or more coats. Generally solvent free.	LD/MD	6 mils to 12 mils	Wash and vacuum dry
3	High build Floor coating	Applied in two or more coats. Generally solvent free.	MD	12 mils to 40 mils	Mechanical scrubber / dryers satisfactory but not with regular use of abrasive pads
4	Multi-layer Flooring	Aggregate dressed systems based on multiple layers of floor coatings or flow-applied floorings, often described as 'troweled systems.	MD/HD	Greater than 80 mils	Requires rotary brush vacuum machine
5	Flow applied Flooring	Often referred to as 'self-smoothing' or 'self-levelling' flooring and having a smooth surface.	MD/HD	80 mils to 118 mils	Gloss – wash & vacuum Matt – scrubber drier
6	Resin screed flooring	Trowel-finished, heavily filled systems, generally incorporating a surface seal coat to minimize porosity.	MD/HD	Greater than 160 mils	Scrubber drier
7	Heavy Duty Flowable flooring	Having a smooth surface.	HD/VHD	160 mils to 240 mils	Scrubber drier
8	Heavy Duty resin flooring	Trowel-finished, aggregate filled systems effectively impervious throughout their thickness.	VHD	Greater than 240 mils	High pressure washer Cleaner / scrubber

Light duty (LD) light foot traffic, occasional rubber tired vehicles
 Medium duty (MD) regular foot traffic, frequent fork lift truck traffic, occasional hard plastic-wheeled trolleys,
 Heavy duty (HD) constant fork lift truck traffic, hard plastic wheeled trolleys, some impact
 Very heavy duty (VHD) severe heavily loaded traffic and impact

10. GENERAL TIPS & ADVICE

DO

- Initial clean before use and take care when installing equipment
- Clean regularly
- 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
- Clean up spillages immediately.
- Remove traces of oil and grease immediately with an aqueous solution of alkaline detergent.
- Ensure that cleaning and maintenance levels are higher in areas subject to accidental contamination by chemicals or bacteriological or radioactive materials.
- If your resin floor has a textured surface - do use brushes - not mops.
- Use the best quality equipment available to you.
- Ensure that cleaning equipment is regularly cleaned.
- Follow the instructions provided by the manufacturers of chemicals and equipment.

DON'T

- Use excess concentrations of cleaning agents - exceeding the manufacturers' recommended dosage is at best pointless and expensive and at worst harmful.
- Mix cleaning chemicals and agents - this can also be harmful.
- Use excessive water.
- Use solvents.
- Use synthetic scrubbing pads on textured resin floor finishes. These industrial finishes will cause rapid destruction of the pads.
- Use phenol based cleaning chemicals -they will cause degradation of resin floor surfaces.

TOP FLOOR MAINTENANCE TIPS

- Sweep floors daily with mechanized sweeping equipment or broom
- Scrub floors at least once a week with proper brush and detergent
- Clean chemical spills immediately before they damage coating
- Place walk off mats at entry ways to minimize dirt and moisture entering the facility
- Protect floor finish with proper mats before sliding heavy machinery, pallets or materials across floor
- Dropping heavy or sharp-edged objects on floors may cause chips/gouges in floor coating
- Use appropriate brushes on high-gloss finishes. Stiff bristles or heavily worn brushes will dull the finish
- Use a general-purpose cleaner for regular cleaning. Caustic cleaning solutions or solvents may dull your floor finish
- Watch for gouges, delamination or peeling. These need to be repaired as soon as possible to prevent further damage