Nutech Paint
For a perfect finish!

Nutech Concrete Sealer & Coating Handbook

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Forward

This Hand Book provides the reader with a general guide to the selection, preparation and application of a range of Nutech sealers and coatings which combines many years' experience in the decorative and protective concrete coatings and sealer industry, ideally to better understand some of the technical and practical aspects of sealing and coating different types of concrete surfaces commonly used throughout the industry, utilising the range of Nutech high performance products available.
The information contained within this Hand Book is of a general nature. As every project is unique, should there be any doubt, individual advice should be sought through Nutech Paint specific to you requirements

It is recommended that an appropriate on site assessment should be conducted prior to commencement of any works. This includes but is not limited to; the condition of the concrete surface, type of concrete finish, concrete porosity, efflorescence and if pre coated, the type composition of the existing coating, whether the existing coating is in good serviceable condition or whether the coating should be removed. Details of which are outlined in this Hand Book.

When using any Nutech product, the user should first refer to all technical information that is available in the Nutech Technical Data Sheets (TDS), Safety Data Sheets (SDS) and Product Label directions and Application Guidelines and or Hand Books available on the Nutech Paint Website www.nutechpaint.com.au in the Resources tab, under Product Data.

If you are ever in doubt about a particular requirement, specialist advice can be obtained direct from Nutech Paint.

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Introduction

The use of clear and coloured coatings and sealers on plain and decorative concrete has become very popular over the years. It is a simple, attractive and cost effective way of decorating, enhancing and protecting concrete paving, driveways, garages, warehouses and factory floors. The purpose of coating concrete includes;

- Colouring plain concrete
- Enhance the appearance of decorative and patterned concrete finishes
- Protect oxide colours, dyes and pigments in the surface from weathering
- Seal the surface and provide resistance to chemicals, oil & grease staining and discolouration
- Prevent dusting of the concrete surface
- Assist curing of the concrete through 'same day' application on green concrete
- Provide slip resistance on smooth concrete by incorporating a particle texture
- Improve ease of cleaning

Nutech Paint is an Australian owned, developer, manufacturer and supplier of superior, high performance concrete sealers and coatings since 1972. Our range of concrete sealers and coatings have been developed to suit the wide and varied conditions Australia has to offer.

Correct surface preparation guidelines, product properties, ease of application, re-coatability, wear resistance, external durability and chemical resistance all play important roles in your customer selection process.
It is important to state at this point, even the best sealers and coating systems will fail if the manufacturer's preparation, dilution, mixing, application and recoat and drying recommendations are assumed or ignored.
It is therefore vitally important to understand that the role of the Concreter/Applicator to ensure the concrete surface is tested for suitability, is properly prepared and the correct sealer or coating is applied in accordance with the in service requirements and conditions. Observing Nutech product recommendations and preparation guidelines have been developed to eliminate issues during application or longer term, in service.

Performance and Application of Nutech Concrete Coatings

All Nutech concrete sealers and coatings provide exceptional long term durability and performance. They have been developed and tested to a wide range of concrete surface applications with all relevant preparation, application and performance criteria outlined in the relevant Technical Data Sheets (TDS), subject to correct preparation and application procedures.

For example when applied correctly, Nutech solvent based PaveCoat and low VOC water based PaveCoat H_2O acrylic sealers are durable, non-yellowing and long lasting. However, depending on the end use application, they may be subject to mechanical and chemical damage if incorrectly specified.
Depending on the end use requirements of the end user, Nutech offers a range of solvent based or low VOC water based EPiC 2 pack coatings which provide a much higher level of durability and performance. EPiC 2 pack coating systems are available in either isocyanate free, that addresses OH&S issues if sprayed, or Isocyanate containing systems. ***Refer to section 3, page 5*** for further details on the differences between single pack and 2 pack coatings.

Long term coating or sealer performance will be subject to their environment over time. They inevitably wear, lose flexibility, become brittle and potentially lose adhesion properties with age.
Regular care and maintenance will prolong durability and maintain the aesthetic quality of the surface finish. It is important that you or your client implement regular maintenance regimes. As a reference point, details are outlined in this guide on ***pages 35 & 36*** and are available from Nutech Paint.
At some point in the future, all concrete sealers and coatings will require re-finishing. Nutech Paint can also provide specific recommendations for refinishing previously coated surfaces. ***Refer Section 12 & 13 pages 24 - 25***.

Safety & Product Information
When handling paint product always ensure there is a safe area to mix products and observe all Occupational Health and Safety (OH&S) precautions. Where applicable. refer to the relevant Technical Data Sheets (TDS) and Safety Data Sheets (SDS) for product specific and safety related information.

Observe all relevant disposal directions and consult with local councils on the appropriate disposal of left over paint and equipment. For further information and support: **Nutech Paint 03 9770 3000**

1. CONCRETE SEALER & COATING PRODUCT OVERVIEW

Nutech Concrete Coatings and Sealers Note

Nutech concrete sealers and coatings have been specifically designed to bond to the surface without the need in most cases, for a primer. It is this unique benefit of Nutech concrete coatings and sealers that sets us apart from the competition. Hence, it is vitally important to follow substrate preparation and dilution recommendations as outlined in our Technical Data Sheets and Application Guides.

1.1. Intermixing Different Manufacturer's Products

This practice IS NOT recommended and may ultimately lead to catastrophic coating system failure. All Nutech Paint preparation, application and complete system recommendations are derived from exhaustive testing and many years of "real time" practical experience. Introducing another suppliers' product into this process which has not been tested can compromise application or performance criteria. Following all technical advice and system recommendations will always assure you of long lasting, in service performance for all Nutech Paint products and system. If you are ever in doubt, contact Nutech Paint for advice and support.

2. The Difference Between Concrete Sealers & Concrete Coatings

Often a topic of great conjecture, understanding the subtle differences between a concrete sealers and concrete coatings needs to be clearly understood. Outlined below, will clarify the subject;

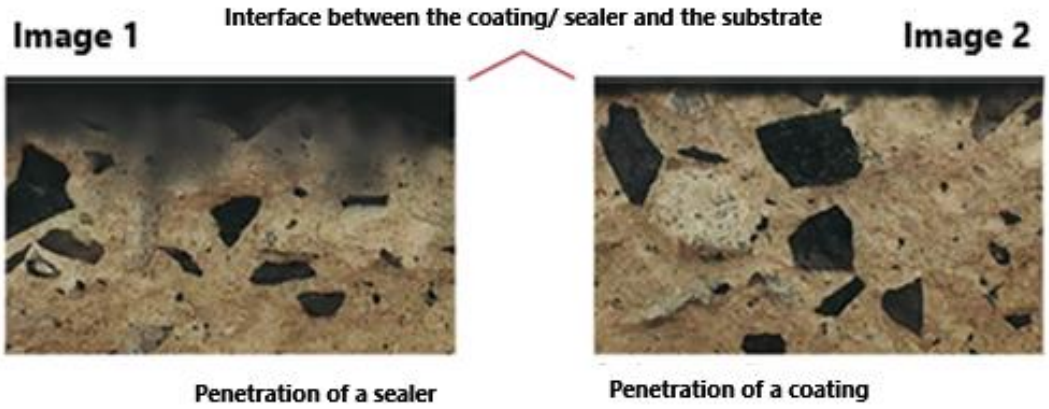
2.1. Concrete Sealers:

Or "penetrating concrete sealers" are typically single pack systems and are quite thin in viscosity. Sealers are designed protect the concrete by penetrating deep into the pores creating a penetrative bond rather than relying on a mechanical "key" to provide adhesion to the substrate. (See image 1) This leaves a thinner, deeper penetrating film that mirrors the roughness of substrate providing a unique, pigmented appearance. Nutech offers a range of solvent based or water based sealers suitable for a range of end use requirements.

2.2. Concrete Coatings:

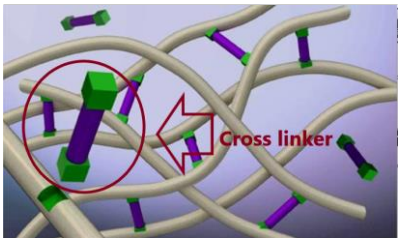
Typically are higher in viscosity which provide a much thicker coating build to that of concrete sealers. Coatings effectively cover and fill as well as partially penetrate into the concrete substrate providing a smoother surface. (See Image 2)
The Nutech EPiC range consists of concrete coatings that are available in either single pack or 2 pack systems in either solvent based or water based systems suitable for a range of end use requirements.

Difference between concrete sealers and concrete coatings



3. The Difference Between Single Pack and 2 Pack Systems

There are typically 2 types of coating systems, referred to as thermoplastic or thermoset.
The easiest way to understand the difference between the two is think of a bowl of spaghetti…

Thermoplastic Coatings	Thermoset Coating
Thermoplastic coatings are comprised of single strand polymer chains, just like a bowl of spaghetti. They can either be water or solvent based and require an element of evaporation to assist with drying and do not use a curing agent or hardener to fully cure.  As their name suggests, thermoplastic resins will soften when exposed to low level heat, they typically become pliable or "plastic." Thermoplastics generally offer GOOD overall exterior & mechanical performance with GOOD flexibility. Chemical, heat and water permeability resistance, however, offer AVERAGE performance.	Thermoset coatings can also be water or solvent based however, Thermoset coating require a cross linker or hardener to cure. The crosslinker (or part B) effectively binds the polymer chain (Part A) providing a tough and resilient coating, ultimately joining up all the individual polymer strands providing greater strength and heat resistance.  This reaction (thermoset) between part A and Part B is exothermic, this means a small amount of heat is generated during the reaction in order to "harden" the paint. 2 pack systems offer EXCELLENT mechanical and chemical resistance performance and EXCELLENT permeability resistance. They also offer GOOD flexibility

3.1. Nutech Single Pack Sealer Systems – PAVECOAT

3.1.1. Pavecoat Sealer System Summary:

System	Properties	Durability
PaveCoat Clear	Solvent based, incorporates UV inhibitors to enhance durability designed to penetrate deep within the concrete. It is available in clear and coloured sealers and is ideal for sealing a range of standard concrete surfaces.	**Interior/ Exterior**
Pavecoat Cure & Seal Clear	Solvent based, developed to assists in moisture retention to improve the concrete curing process PROVIDING THAT the concrete surface is firm and resistant to light foot traffic. Ensure the surface is clean, and not saturated with moisture. This product is not recommended for next day sealing. If same day sealing is not practical, Nutech Paint recommends allowing the new concrete surface a minimum 7 days cure prior to application	**Interior/ Exterior**
Pavecoat High Gloss Clear & Colour	Solvent Based, provides an enhanced 'wet look' appearance	**Interior/ Exterior**
Pavecoat Low Sheen Clear & Matt Clear	Solvent based, offers a natural and contemporary low gloss appearance	**Interior/ Exterior**

Pavecoat Colours	Solvent based, fully pigmented, solid colour	**Interior/ Exterior**
PaveCoat PR	Solvent based, heavy duty sealer developed specifically to resist solvent exposure such as petroleum and some chemicals. This makes it an ideal choice for automotive/ mechanical workshops and garage floors.	**Interior/ Exterior**
PaveCoat H_2O Clear	Formulated from water based acrylic resins that offer a low VOC, low odour option. It is available in clear a sealer and is ideal for sealing a range of standard concrete surface applications.	**Interior/ Exterior**

3.2. Nutech EPiC 2 Pack Coating Systems

The key benefits of these highly crosslinked EPiC 2 pack solvent or water base coatings is they are less affected by mechanical and chemical damage when compared to single pack sealers.
This makes the EPiC range of 2 pack systems ideal for commercial applications and offer excellent application properties for brush, roller or airless spray application.
NOTE: It is important to understand that some specific EPiC 2 pack coatings are best specified for internal or external applications. Understanding this is critical to long term performance which is outlined in the summary table below.
If you are ever in doubt about electing the best product for your customer's performance requirements, please contact Nutech Paint for advice.

3.2.1. EPiC 2 Pack System Summary:

System	Properties	Durability
Epic Epoxy 500	Solvent based epoxy offering excellent interior durability, adhesion and chemical resistance	**Internal use only**
Epoxy 100 clear and coloured	Solvent free two pack epoxy resin for ultimate interior durability, adhesion, chemical resistance and high film build properties	**Internal use only**
EPiC Polycryl	Solvent based, functional Acrylic offering durability, adhesion and good chemical resistance	**Exterior & Interior**
Aqua Epoxy Clear & Colours	Water based, low VOC epoxy for ultimate interior durability, adhesion, chemical resistance	**Internal use only**
EPiC AquaFloor Clear & Colours	Water based, low VOC, free from isocyanate polyurethane for ultimate durability, adhesion, chemical resistance – contains isocyanate	**Exterior & Interior**

3.2.2. EPiC 2 Pack System Hardeners

All Nutech 2 Pack Systems are supplied in kit form in the correct quantities for addition per paint pail. This is referenced as Part A (the paint) and Part B (the hardener). It is important to observe the mixing ratio outlined in the product label directions and TDS'. Incorrect additions will result in insufficient cure of the coating and ultimately resulting in the coatings' inability to "harden" or dry leading on to performance failures.

Once part B is added to Part A observe all recommendations for mechanical or drill mixing as hand stirring will not ensure a complete and homogeneous mix. Once both parts are mixed, **observe pot life recommendations to avoid equipment damage**. This detail is outlined in the relevant TDS.

3.2.3. SAFETY NOTE - EPiC 2 Pack System Hardeners:
It is important to understand that some (Part B) curing agents, such as Isocyanate are extremely harmful in spray form, therefore the overspray can be harmful. Whilst Nutech prides itself on offering a range of 2 pack paint systems that are free from isocyanate curing agents, products such as AquaFloor does contain Isocyanate. As a general rule of thumb, regardless of the curing agent, if air atomised or airless spraying of 2 pack paint systems is required, appropriate OH&S precautions should be observed in the general work area and an appropriate Work Safe Approved respirator should be worn. Always refer to the SDS and TDS for further recommendations.

4. Longer Term Performance of Sealers and Coatings

In order to prolong the long term performance of coated concrete surfaces and maintain the aesthetic quality, regular care and maintenance is recommended. ***Refer pages 34 & 35.***

However it is also important to understand at some point in the future, all coatings lose flexibility, become brittle and potentially lose some adhesion properties with age. Influencing factors such as general/excessive wear and tear, exposure to weather conditions, and other factors such as chemical exposure can all take their toll. At such point it may be necessary to repaint the surface. ***Refer Sections 12 & 13, pages 24 - 29***

5. Anti-Slip Products and Performance

Coating or sealing any concrete floors or paving surfaces will always create a risk of slip hazard for vehicles and pedestrians. This point is especially critical on very smooth, sloping or inclined surfaces, particularly when the surface is wet.
Sealing or coating on steep slopes or inclines is without consideration for anti-slip not recommended.
The use of an Anti-Slip products to increase slip resistance will improve the situation.
Testing is always recommended prior to application in order to confirm satisfactory results.

Note: Due to variations in surface texture, pattern and slope for every individual project, specific guidelines to assist applicators cannot be provided. ***It is the applicator's sole responsibility to ensure that pedestrian and vehicle safety is not compromised. The manufacturer and supplier cannot be on-site to assist in this decision making process and will not accept any legal or other responsibility in this regard.***

5.1. Anti-Slip Products:

Nutech Paint has a range of anti-slip additives. It must be understood that different sealer and coating systems require differing anti-slip products to ensure optimal performance.

5.1.1. Anti-Slip Mix In: Developed specifically for **Pavecoat Sealers**. This "mix in" additive is to be added as the name suggests, mixed in to the second coat of sealer and is naturally suspended within the sealer. Refer to the relevant TDS for further recommendations.

5.1.2. Anti-Slip Cast On: Due to the rheological nature of the EPiC 2 pack systems, anti-slip products will ultimately settle prior to application when dispersed. This product has been specifically developed to be evenly broadcast onto the first wet coat of any **EPiC 2 pack system**, with the second coat applied to "lock in" the anti-slip aggregate. Refer to the relevant TDS for further recommendations.

5.2. Anti-Slip Performance

In order to provide industry best practice recommendations, Nutech Paint has conducted a series of standardised tests to determine the correct type of coating to be specified and the amount of anti-slip aggregate required, in order to meet the specified Australian Standards outlined in HB198:2014 "Guide Book for specifiers, manufacturers and suppliers in the application of AS4586 and AS4663".

These standards are as outlined and must meet specific test criteria and results;

- *AS4586 Slip resistance classification of new pedestrian surface materials*
- *AS4663 Slip resistance measurement of existing pedestrian surfaces*

Nutech also supply Anti-Slip products in predetermined quantities (400gm) to ensure the correct surface is resistance is achieved

Anti-Slip Product / Quantity per 20L	Nutech Coating System	Pendulum Classification
AntiSlip Mix In - 1x400gm Jar per 20L	**Single Pack Sealers** Pavecoat Pavecoat H2O	Wet P2
AntiSlip Mix In - 2x400gm Jar (800gm) Per 20L	**Single Pack Sealers & Coatings** Pavecoat Petrol Resistant Pavecoat H2O EPiC Industrial Enamel	Wet P3
Note: For a higher degree of slip resistance or for steep inclines and gradients greater than 1 in 14, a P5 or R12 rating will be required. Where appropriate, Nutech recommends **EPiC 2 Pack Systems** with **AntiSlip Cast On .**		
AntiSlip Cast On Fine Broadcast at 2-5m^2/kg onto wet surface. Must be top coated to encapsulate.	**2 Pack System Coatings** EPiC Epoxy 500 EPiC Polycryl	Wet P4
AntiSlip Cast On Coarse Broadcast at 2-5m^2/kg onto wet surface. Must be top coated to encapsulate.	**2 Pack System Coatings** EPiC Epoxy 500 EPiC Polycryl	Wet P5

For further information Anti-Slip refer to the Nutech Anti-Skid Test Fact Sheet.

5.2.1. Australian Standards for Slip Resistance

As the standards are copywrite protected, copies of the Australian Standards AS4586 and AS4663 can be purchased direct from;
Standards Australia https://www.standards.org.au/ or SAI Global https://www.saiglobal.com/online/

6. Understanding Concrete Surfaces

Before applying a concrete sealer, a number of factors and variables that should be carefully considered and understood. They include, but are not limited to the following;

Factors	Variables
Surface conditions	Smooth steel trowelled or rough float finished concrete
Existing surface treatment	Hardened, stone dust, coloured topping etc
Decorative finish & requirements	Plain, coloured, pattern impression, stencil, slate look, spray-on,
Weather conditions	Hot, cold, wet, night or condensation
Age of concrete	New green uncured & partially cured or fully cured concrete
Surface conditions and preparations	Type of contamination; oil, grease, fats, salts, laitance and concrete powder. Degreaser, grinding or etching
Application factors	Roller, brush or spray application
Existing surface coating	Acrylic, silicon, enamel, polyurethane, epoxy, fluorosilicate etc.

Therefore it is important to understand the nature of various concrete paving and floor types, to ensure the appropriate surface preparation and the correct coating selection is made and application procedures are followed.
Equally as important is the correct product selection, as this element is critical when coating industrial or factory floors.

6.1. Types of Concrete and Concrete Paving Surfaces

Different types of concrete paving require different preparation and sealing practices. Outlined in this section provides you with an overview.

6.1.1. Smooth Steel Troweled or Float Finished Concrete:

This finish is created when a steel hand trowel or machine is used by the cement mason to close or smooth the exposed concrete surface of the project. Typically, smooth steel troweled concrete can be found on garage floors, basement floors, warehouse & factory floors and covered front porches. This substrate may be raw or coloured using a liquid or powder additive. It may also be coloured with hand cast topping powders (usually containing coloured oxides, curing agents (topping hardeners), cement or stone dust and casting/ texture aids such as sand) trowelled into the surface.
More labor and time is required to produce the smooth steel troweled or float finish as the concrete needs to be hard enough for the cement finisher to walk, kneel on, ride or walk behind a mechanical finish trowel machine. Once the concrete becomes hard enough to perform these actions, there is a limited window of time the finisher has to 'close the surface' before the concrete hardens beyond being able to be sufficiently worked. *A range of Nutech concrete sealers and coatings are recommended for this surface dependent on end use requirements.*

6.1.2. Broom or Stippled Finished Concrete

Similar to Plain Troweled or Float Finished Concrete, both contain the same ingredients. Prior to the completion of the surface specialty broom attachment is pulled across the surface to create a distinct rough stipple texture effect. This method does not require the finisher close the surface by hand. *A range of Nutech concrete sealers and coatings are recommended for this surface dependent on end use requirements.*

6.1.3. Exposed Aggregate Concrete

This finish utilises a different aggregate to than that of plain troweled or broom finished concrete. It offers a more rustic/ aesthetic appearance and comes in a variety of colours and aggregate types. This concrete finish is a multi -step process that utilises a retarding compound (usually left overnight) and is high pressure water washed the following day to reveal the aggregate below. ***Nutech Agreseal*** *has been specifically formulated to provide protection and durability to this surface.*

6.1.4. Stamped Concrete, Impression or Pattern Paving

Designed to mimic stone, brick, wood and many other materials and is available in a variety of colors that can

be placed into the concrete as dyes and pigments along with the release agents that assist the stamps from not sticking to the concrete. The process for finishing Stamped Concrete, Impression or Pattern Paving is very similar to Plain Troweled or Float Finished Concrete. The concrete will be hand worked by a finisher as before and then the stamping will take place.
If there is to be a color in the concrete, it will be added at the concrete plant or on the job site.
Generally, the concrete will also contain a smaller aggregate to ensure uniform consistency throughout the stamp and allow for the aggregate to not be pushed too far below the surface by the stamp.
The stamping (large and heavy rubber mats with the stamp effect) are placed in a pattern after the release agent has been spread across the surface. The mold creates the desired effect in the surface of the concrete. This process continues until the entire surface has been stamped.
Control joints are saw cut into the surface of the concrete patio and then power washed to remove any extra release agent from the surface of the concrete before concrete sealer can be applied after allowed to dry. *The **Nutech Pavecoat Range** of sealers are recommended to protect and beautify this surface.*

6.1.5. In-Situ Stencil Concrete - Coloured Brick or Tile Pattern

Plain Troweled or Float Finished, while the concrete is still wet, the application of a paper or plastic stencil simulating brick or tile patterns. Powder topping colours containing hardeners and texture sands are hand cast on the wet concrete surface and trowel finished. Often a second coat of topping is added and wood floated creating a rough pattern surface.
The stencil is removed after partial curing of the surface leaving a slightly raised brick or tile pattern and an uncoloured recessed grey concrete imitation mortar joint. The surface can have a rough finish to imitate a brick or a smooth steel trowelled finish similar to a tile. *The **Nutech Pavecoat Range** of sealers are recommended to protect and beautify this surface.*

6.1.6. Salt finish

Generally a specialised requirement and not often used, this type of concrete finish utilises the application of rock salt and is applied to the wet (uncured) concrete surface. The concrete is then allowed to cure then the rock salt is simply pressure washed away leaving pit marks and a finely textured, non-slip surface. Care must be taken to ensure all the rock salt is *thoroughly flushed* from the surface prior to sealing. *The **Nutech Pavecoat Range** of sealers are recommended to protect and beautify this surface.*

6.1.7. Coloured/ Pigmented Plain Concrete

Typically this concrete can be smooth steel troweled, float, broom or stippled finished.
There several different methods to colour plain concrete which consist of the following;
- Integral Colouring: The most popular method is to pre-mix iron oxides evenly into the concrete mix. Typically blended off site at a batching plant and transported to site for pouring
- Colour Hardened or Shake on Colouring: A pigmented powder with additives is evenly broadcast once the concrete has been poured, finished and is still wet.
- Water Based Dyes: Typically blended off site at a batching plant and transported to site for pouring

7. When to Apply Concrete Sealers & Coatings

7.1. New Concrete Surfaces

Concrete cure time can have a detrimental effect on the long term performance of the sealer or coating. The type of product specified will determine the correct cure or "dwell" time of the concrete prior to application. If inadequately allowed to cure, moisture trapped within the concrete may ultimately lead to blistering and coating adhesion failure. Therefore, concreters who apply sealers on new concrete, not observing the recommended dwell time will take a risk that future adhesion problems may develop. This is often very difficult to predict and explains why concreters become frustrated when they typically seal next day, with unpredictable results.

As a guideline, depending on the type of coating specified, the most appropriate period of time allowed to ensure suitable coating performance is achieved, recommended by Nutech Paint is outlined as follows;

7.2. Recommended New Concrete Cure Times for Application of Sealers & Coatings

Single Pack Concrete Sealers	**Cure Period**
Pavecoat, Pavecoat H_2O, Pavecoat Petrol Resistant	**7 Days**
EPiC 2 Pack Concrete Coatings	**Cure Period**
EPiC Epoxy 500, EPiC Epoxy 100, EPiC Aquafloor, EPiC Polycryl, EPiC AquaEpoxy	**28 Days**

Note: The only exception to this recommendation is **Nutech Cure and Seal** which has been developed for "same day" application to "green cured" concrete.

7.3. Same Day Sealers (PaveCoat Cure & Seal)

It is fair to state a common myth in the building and construction industry is a "same day sealer" can be applied the following day or several days later. Whilst a logical assumption, it is believed that the concrete should be dry. Unfortunately, this assumption is incorrect.

When new concrete (including insitu stencil concrete) is poured, machine or hand finished until it is firm and resistant to light foot traffic, it is possible to apply a "same day sealer". **Pavecoat Cure & Seal** is a "wet on wet" same day sealer which assists in moisture retention to improve the concrete curing process PROVIDING THAT the concrete is warm, absorbent, no liquid water is present on the surface and has no concrete dust, efflorescent salts, oil or other contamination.
Observing this criterion will ensure good adhesion and durability.

On the second day (or next morning) after pouring, the concrete is usually too damp, cold and typically not absorbent. There is also a possibility that the surface is affected by efflorescent salts, powder and dirt. The concrete at this stage is regarded as too "green" to acid etch or high-pressure wash, therefore additional surface preparation to increase porosity, remove efflorescence salts or contamination cannot be undertaken. Using PaveCoat Cure & Seal the next day/morning after the concrete has been poured IS NOT RECOMMENDED. At this point it is advised that the concrete is allowed to cure commensurate with the cure recommendation guidelines specific to the sealer or coating technology.

7.4. Cold and Hot Application Conditions

Cold Conditions: Newly poured concrete will cure much slower in cold conditions. The concrete is typically too wet on the day to allow for same day sealing.
If the surface is inadequately cured, it will prevent high pressure water blasting or acid washing.
During cooler times, there is also a higher occurrence of efflorescent, if left untreated, potential adhesion may occur.

During cool conditions, it is recommended that the concrete has had sufficient time to cure and a moisture content test is conducted to assess suitability. For suitable concrete cure dwell times ***Refer section 7.2 page 12.***
Conversely, application and drying time can be affected in cooler conditions. Failure to observe these recommendations may result in poor performance and/or surface blooming.

Hot conditions: As a result from fast evaporation of solvents, sealer penetration into the concrete can be compromised. Rapid drying of the sealer surface can also lead to “skinning” where the surface of the coating or sealer dries faster than the underlying sealer or coating. This traps solvent and air which may cause bubbling, often referred to as “gassing” or “cissing.”

Failure to observe the ambient conditions of the day and take weather conditions into consideration will result in coating system issues, typically blooming, peeling, flaking or bubbling.

Outlined in every TDS, are the recommended minimum and maximum application temperature recommendations. These details have been outlined to provide optimal application performance. Should you have any questions, please contact Nutech Paint.

8. Surface Preparation

8.1. Overview

This section covers the most appropriate preparation products, methods and systems for a range of surfaces suitable for Nutech concrete sealers and coatings.
It is vitally important to understand the need for correct surface preparation on any surface to be painted. Working through a systematic approach to preparation is always good practice. Taking the time and performing this task correctly now will make the difference between an average or an outstanding result, ensuring all facets of preparation are covered which includes;

- Identifying the most appropriate sealer or coating for the end use application
- Identify and observe any site safety restrictions
- Ensure you have all the relevant technical information at hand
- Identify anti-slip requirements and where they need to be applied
- Determine the most appropriate start point and finish point
- General removal of any surface contaminants such as dirt, dust, debris, food scraps, laitance, efflorescence, oil, grease etc.
- Degreasing the surface
- Assessing concrete porosity and taking appropriate measures such as etching or grinding
- Assessing the moisture content of the concrete prior to application

It is what you do at this point as to what will make the difference between doing a job once or having to come back, strip and refinish job again, only this time at your expense.

8.2. Nutech Surface Preparation Product Summary

Nutech Paint have developed and exhaustively tested a range of concrete preparation solutions designed as a complete preparation system for all Nutech Paint concrete sealer & coating systems. Nutech's recommendations and specifications come from many years' experience in the concrete coatings industry, it is recommended to avoid intermixing different suppliers' products where ever possible.

Nu-EcoSafe Degreaser : Water based super concentrated, heavy duty water based cleaner and degreaser that is an ideal and biodegradable alternative to traditional solvent based degreasers and cleaners.

Nu-EcoSafe Etch : Water based environmentally friendly, easy to use concrete surface etching solution designed specifically for etching rough and slightly porous bare concrete to improve adhesion of the Nutech range of sealer & concrete coating products.

Nu-EcoSafe Ultra Etch : The next level of environmentally friendly, biodegradable, high performance and easy to use concrete surface etching solution. Designed specifically for etching rough and slightly porous bare concrete to improve adhesion of the Nutech range of sealer & concrete coating products.

8.3. New and Old Bare Concrete Surface Preparation

Often, it is incorrectly assumed that new, cured concrete does not require preparation prior to coating or sealing. Preparation of all cured, new or old concrete surfaces must be degreased and high pressure water cleaned to remove any residual salts, laitance, concrete powder, dirt and contamination.

Note: Once a concrete surface is correctly cleaned and prepared, the first coat should partially penetrate the surface. To ascertain the most appropriate surface porosity and moisture content; ***Refer section 8.8.3 page 18.*** First coat penetration will leave a patchy appearance (With the exception of cementitious/polymer coated concrete) to the surface.

It is important to be aware that new concrete floors in factories and warehouses may well get contaminated by oil and grease from work vehicles such as forklifts and scissor lifts, foot traffic soiling, food scraps and excess sealants and adhesives. Conversely, commercial factories such as vehicle or engineering workshops may be exposed continuously to grease and oil etc. It is important the coater remains vigilant buy identifying areas and degreasing them as recommended in the **Nu-EcoSafe Degreaser** TDS, is essential prior to concrete preparation in readiness for etching and coating.

SURFACE PREP. NOTE 1: Brooming the surface, rinsing with a garden hose (with or without clip on attachments) or using a fire hose IS NOT a substitute for high pressure cleaning.
SURFACE PREP. NOTE 2: Floor grinding or etching solution WILL NOT adequately remove contaminants such as oils, fats and grease**.**
SURFACE PREP. NOTE 3. Identification of the contaminant is sometimes impossible, these small areas mat potentially result in localised adhesion issues in the future.

8.4 Concrete Surface Grinding Note
It is acceptable to mechanically grind the concrete surface in order to prepare it for sealer or coating application however, grinding the concrete surface will not remove oil, grease or fat contamination from the surface. In this instance Degreasing the surface prior to grinding is recommended.

Remove any dust and debris as required to ensure a suitably cleaned surface.

Etching ground concrete is generally not required as grinding will generally expose the pores of the concrete allowing for good sealer or coating penetration. However, as good a practice, a concrete porosity check should be performed. ***Refer section 8.8.3 page 18.***

8.5. Preparation Process Overview:

Step1. General clean up
- Prior to degreasing, where practical, remove any objects from the general work area. Brush and vacuum to remove any dust, dirt, debris, sealant, food scraps and other loose surface contamination. ***Refer section 8.7 page 17.***

Step 2. Degrease
- Degreasers and floor cleaning detergents are required to remove these contaminants prior to acid etching. The use of **Nu-EcoSafe Degreaser** is recommended as outlined in the relevant TDS and allow for the surface to dry thoroughly. ***Refer section 8.7 page 17.***

Step 3. Etch
It is essential that smooth steel trowelled and topping hardened surfaces are etched prior to applying any sealer. This recommendation is applicable to new or old concrete surfaces. ***Refer section 8.8 page 18.***

There are two exceptions to this requirement where acid etching is not recommended;
(i) Rough wood floated stencil concrete
(ii) Spray on cementitious/polymer coated concrete

With the exception of the above, etching improves the surface porosity of the concrete helping the sealer or coating penetrate into the surface significantly improving adhesion. This method of preparation is ideal on old hard concrete, new and old smooth steel trowelled concrete, polished concrete and surface hardened concrete. As outlined in the relevant TDS, the surface must be thoroughly pressure washed (minimum 2500 psi) with clean water to remove the etching solution. Refer to the Nu-EcoSafe Etch or Ultra Etch TDS

Step 4. Test Surface porosity
- Recommended to assess how the sealer or coating will penetrate the concrete. ***Refer section 8.8.2 page 18.***

Step 5. Test Concrete Moisture Content
- Recommended to assess how wet the concrete is prior to sealing or coating. ***Refer section 8.8.3 page 18.***

8.6. Preparation of Old Pre – Coloured/ Pigmented Concrete

Often a topic of great conjecture as to what preparation is required prior to sealing or coating. As a general rule of thumb, preparation of this substrate should be commensurate with plain concrete and the type of concrete surface finish. Therefore etching or grinding are suitable providing that a porosity check is performed prior to application of the sealer or coating.

NOTE: If ***clear sealing*** of the pre-coloured concrete is being considered, DO NOT Etch.
Etching this surface may cause staining, discolouration or colour removal which will be highlighted through the clear sealer. A thorough degrease using **NU-EcoSafe Degreaser** and rinse should be performed with a test patch identified for sealer suitability. A porosity check is also recommended. The customer should be advised if less than suitable sealer penetration is observed as longer term adhesion failure can be expected. In this instance the customer should be advised of other options available. In this instance ***colour sealing*** is recommended following the etching recommendations of this section.

8.7. Surface Preparation and Degreasing (Detailed)

Prior to any etching, sealing or painting it is important to ensure the surface to finished is as clean as possible. This process is essential as etching or grinding will not remove general surface contaminants.

All concrete surfaces will have some residual contaminants on the surface. Depending on the environment, dust, dirt, general debris, food, fats, oils, grease, release agents and silicones, if left untreated can compromise surface adhesion and the appearance of the freshly finished floor.

Remove any loose material such as dust dirt, food scraps etc. with a scraper and general, loose debris by broom and/ or vacuum.

For best results, follow the dilution recommendations and application directions outlined in the **Nu-EcoSafe Degreaser** TDS, high pressure water rinse and allow for the surface to dry prior to etching.

Nutech Tip: A leaf blower is also an effective tool for removing lose dust, dirt and debris, ensuring all material is blown in a suitable direction and where applicable, following the direction of the wind. A leaf blower is also useful to assist in drying the surface after rinsing.

Note: After every step of preparation, ensure all work areas are appropriately blocked off to prevent pedestrian and vehicle access from further surface contamination. Ensure all work shoes are clean and free from dirt, mud and debris as further thorough surface cleaning will be required!

8.8 Etching the Bare Concrete

8.8.1 In Accordance To Surface Profile

It is important to etch the concrete surface in accordance with the surface profile. Nutech Paint recommends the use of Nu-EcoSafe Etch or Nu-EcoSafe Ultra Etch as outlined;

> **Nutech Tip:** When mixing **Nu-EcoSafe Etch** or **Nu-EcoSafe UltraEtch**, use a plastic watering can to mix and apply the etch as outlined in the TDS and always add the etch in the recommended ratio to water.

Concrete Finish	Etch Solution Ratios
Rough stipple finished concrete	1 part **Nu-EcoSafe Etch** or **Nu-EcoSafe UltraEtch** to 15 parts clean water
Smooth steel trowelled concrete surfaces	1 part **Nu-EcoSafe Etch** or **Nu-EcoSafe UltraEtch** to 10 parts clean water
Hardened or High MPa Concrete	1 part **Nu-EcoSafe Etch** or **Nu-EcoSafe UltraEtch** to 5 parts clean water
Rough float finished surfaces	Generally require minimal preparation before sealing due to the naturally porous nature of the surface. NOTE: Refer Porosity check prior to commencement of works.

- Apply the **Nu-EcoSafe Etch** or **Nu-EcoSafe UltraEtch** solution as outlined in the TDS and allow to activate on the surface for 15 minutes
- After 15 minutes, high pressure clean with a minimum water pressure of 2500psi
- Allow the concrete surface to dry thoroughly

8.8.2. Test for Porosity – New or Old Raw Concrete

As a unique benefit of Nutech Sealers and Coatings generally, no primer is required. However, to ensure long term performance and adhesion to the substrate it is imperative to ensure the concrete is porous to ensure suitable penetration.

- Measure 1 cup of fresh water and pour onto the dry surface
- Observe water absorption noting absorption within 30 seconds
- If water pools or is slow to be absorbed, a second stronger solution of etch will be required. (Refer Etch mix rations and follow directions for Hardened or High MPa Concrete)
- Repeat process for determining porosity

8.8.3. Test for Moisture Content– New or Old Raw Concrete:

- The concrete should have less than 5% moisture content prior to sealing or coating.
- A calibrated moisture test meter should be used to assess the percentage of moisture present prior to application.

> **Nutech Tip:** If there is no access to a moisture test meter, tape a plastic sheet onto the concrete surface and leave for 30 minutes. After 30 minutes, lift the plastic sheet. If no moisture or condensation is present under the sheet, the concrete is dry enough to apply the sealer or coating. This can be a simple and cost effective method that can tested simultaneously in different areas of the job.

9. Sealer and Coating Recommendations for Different Concrete Types

9.1 Smooth Trowelled and Rough Stippled Surfaces

If the concrete is finished with a heavy stipple or broom finish, the strength of the concrete surface should be taken into consideration. If the stipple can be easily broken off the concrete, the surface is weak. Applying a coloured sealer is not recommended without special surface preparation. Refer to Nutech for further details.

9.1.1 Sealers

Always observe the correct concrete cure time requirements prior to preparation and coating.
Pavecoat sealers require a minimum 7 days prior to application

PaveCoat Clear or Coloured Sealers are commonly recommended on these cured surfaces providing the concrete surface is properly prepared. Appropriately thinned Pavecoat sealers will provide excellent first coat penetration of the surface. Dilution and application recommendations are outlined in the relevant Pavecoat TDS.

9.1.2 PaveCoat Cure & Seal may be applied to "green" uncured concrete providing the surface is not wet and the weather conditions are favourable. If the surface is not sealed on the same day, it is recommended to wait until the concrete surface has started to whiten as this indicates adequate surface curing which will allow preparation of the surface for sealing. In winter or cooler conditions 'same day' sealing may not always be possible. As such, the concrete will require a minimum 7 days to fully cure. In this instance, Pavecoat Clear or Coloured sealer should be used.

9.1.3. Pavecoat Sealer Dilution Recommendations To Suit Surface Profile

1st Coat Dilution Observe first coat dilution ratio as outlined below and in the relevant TDS

- **Hardened, Topping Coloured or Smooth Steel Trowelled concrete surfaces:**

  Dilute & Mix: By 50% PaveCoat Thinners to PaveCoat Sealer

- **Rough stipple finished concrete surfaces:**

  Dilute & Mix: By 20% PaveCoat Thinners to PaveCoat Sealer

- **Reactivated, Previously Sealed Concrete surfaces:**

  Dilute & Mix: Typically, no dilution or by up to 10% PaveCoat Thinners to PaveCoat Sealer

2nd Coat Dilution
Generally, dilution is not required
Note: In hot conditions, the addition of 10% thinners to the second coat may reduce the formation of surface bubbles.

Pavecoat H_2O can be diluted with clean fresh water to a maximum 20% on bare concrete to assist surface penetration. No dilution is required for the 2nd coat.

NOTE: Always refer to the relevant TDS for appropriate application rates and cure times.
DO NOT DRIVE OR PARK VEHICLES ON FRESHLY SEALED SURFACE FOR A MINIUM OF 7 DAYS.

9.1.4. EPiC 2 Pack Systems:

Always observe the correct concrete cure time requirements prior to preparation and coating.
EPiC 2 Pack systems require a minimum 28 days prior to application

Providing the concrete surface is properly prepared, EPiC 2 Pack Systems will provide partial penetration of the surface. (With the exception of cementitious/polymer coated concrete).
Cementitious/Polymer Coated Concrete NOTE: Dilution of the first coat of sealer is not required as it will increase any surface softening and retard the curing process.

- Depending on the end use application, correct selection of 2 pack system must be considered.
    - **For INTERIOR applications: EPiC Epoxy 500, Epic Epoxy 100, Epic AquaEpoxy** are recommended on these surfaces.
    - **For EXTERIOR Applications: Epic PolyCryl or Epic Aquafloor** are recommended

9.1.5. EPiC 2 Pack System Dilution Rates

1st Coat Dilution:
Observe Dilution rates, mix ratios and thinner types as these items may differ between the range of EPiC 2 Pack Systems. It is recommended that you refer to your relevant TDS for further detail.
Dilution for spray-on cementitious/polymer coated concrete is not required as it will increase surface softening and retard the curing process.

2nd Coat Dilution:
Generally, dilution is not required

EPiC AquaEpoxy and EPiC Aquafloor are water based 2 Pack Systems and can be diluted or thinned with clean fresh water as outlined in the relevant TDS.

NOTE: Always refer to the relevant TDS for appropriate application rates and cure times.
DO NOT DRIVE OR PARK VEHICLES ON FRESHLY COATED SURFACE FOR A MINIUM OF 7 DAYS.

9.2. In-Situ Stencil Concrete - Coloured Brick or Tile Pattern

The surface can have a rough finish to imitate a brick or a smooth steel trowelled finish similar to a tile.
A rough float finished surface requires minimal preparation before sealing, due to the naturally porous nature of the surface. Generally, acid etching is not required, never the less, a porosity check should be performed to assess whether further preparation is required.
To protect the coloured surface, two coats of **PaveCoat Clear** are recommended.

1st Coat Dilution:
10% Thinners

2nd Coat Dilution:
Generally, dilution is not required **Note:** In hot conditions, adding 10% thinners to the second coat can reduce the possibility of surface bubbles forming.

Anti-Slip Additive is usually not required on rough surfaces although each case must be assessed individually.

Specific preparation is required on smooth steel trowelled surfaces which should be treated similar to stamped concrete or other smooth hardened concrete surfaces.

- Degreased & high pressure water cleaned
- Etched – 1 Part Nu-EcoSafe Etch or Ultra Etch to 15 Parts Water
- High pressure water cleaned (Min. 2500psi)

In some cases, a “hit and miss” finish is applied. This leaves partly rough and very smooth surfaces in the brick patterns. In this case, acid etching is always required to guarantee sealer adhesion.

On smooth steel trowelled surfaces two coats of sealer should be applied in accordance with the TDS;

1st Coat Dilution:
1 Part Pavecoat Thinners to 1 Part Pavecoat

2nd Coat Dilution:
Generally, dilution is not required **Note:** In hot conditions, adding 10% thinners to the second coat can reduce the possibility of surface bubbles forming.

Where required, Anti-Slip Additive is included in the final coat on all smooth surfaces.
PaveCoat Cure & Seal Same-Day Sealer may be used on rough or smooth stencil surfaces in accordance with the relevant TDS and Nutech application recommendations, followed by second coats as specified. The use of

PaveCoat High Gloss Clear Sealer, **PaveCoat**, **Pavecoat H_2O** and **Epic Polycryl** are suitable on stencil concrete surfaces and should be applied in accordance with the relevant TDS.

9.3. Spray-On Stencil - Refinishing System for New or Old Surfaces

Typically, these systems are an acrylic modified cementitious spray applied system. A number of commercial spray-on systems are available including Cova-Crete, Duratex, Ad-Tex, Decorative Concrete Concepts, Australian Slate Crete and Bescon.
The new or old concrete surface is prepared by high pressure water blasting and acid etching -subject to adequate surface hardness.
An acrylic polymer surface primer is sometimes used to seal the surface, then a coloured or neutral grey Base Coat of acrylic modified cementitious coating is spray applied with a hopper gun over the entire surface.
A self-adhesive stencil is then applied on the surface which leaves an exposed brick or tile pattern.
A single or multi coloured polymer modified cementitious topcoat is then spray applied with a hopper gun over the stencil and then removed prior to the full cure of the coating.

The use of **Pavecoat Spray On Clear Sealer** is recommended to provide protection and durability and the product is supplied ready for use - no thinning is required. There is no specific surface preparation required to ensure surface adhesion, however a thorough clean and degrease using Nu-EcoSafe Degreaser is recommended.
One coat of **Pavecoat Spray On Clear Sealer** is applied same day to prevent concrete efflorescence and to protect the coloured oxide surface. A second coat is recommended for durability. Refer to the relevant Technical data sheet for further information.

Note: **Pavecoat Spray On Clear Sealer** may soften new spray-on stencil coatings which are not fully cured. It is necessary to prevent pedestrian and vehicle traffic for a minimum of 7 days, until the surface is sufficiently hardened.
On fully cured spray on stencil surfaces, PaveCoat Clear, Pavecoat H_2O, High Gloss sealers and EPiC Polycryl 2 pack system is also recommended. Recoating with **Pavecoat Spray On Clear Sealer** and any of these products is suitable.

9.4. Slate Impression, Stamped Colour Concrete

Whilst offering an attractive decorative effect, sloping surfaces can be very slippery when wet. This type of surface is regarded as unsuitable for steep driveways.

Problems encountered with sealing and resealing slate impression paving are now widely recognised within the industry. Typically, concreters leave an excess of coloured release agent to colour the deep cracks and grooves in the surface to provide a natural slate appearance. The release agent is a water proofing material designed to prevent the rubber mould sticking to the concrete during the stamping process. When excess release agent is left a concrete sealer cannot penetrate into the surface and adhesion problems usually develop in 1 or 2 years. Hot car tyres or (tyre pick up) is a major problem on poorly sealed surfaces which will result in the removal of patches of sealer and colour.

Most sealer problems can be attributed to inadequate surface preparation, application procedure and variables in the concrete including porosity, surface hardness and excess release agent.
Factors, which must be taken into consideration when resealing slate impression paving include;

- Has the original coat of sealer been applied correctly?
- Was the surface correctly prepared?
- Is there excessive release agent under the sealer?
- Is the original sealer delaminating or flaking leaving a silvery white appearance?
- Is the original sealer weathered leaving a powdery white surface?

- Is there a salt efflorescence problem with fluffy white salt powder or hard yellow calcium deposits?

More specific recommendations for sealing and resealing this surface are referenced in the Nutech Seal Repair Solution TDS.

2 coats of **Pavecoat** is generally recommended for this surface. Should Anti Slip properties be required, this can be done in the 2nd coat. Following the relevant recommendations outlined in the relevant TDS.

Note: In some states and territories of Australia, release agents cannot be washed into drains. Any excess material must be swept up vacuumed up and disposed of accordingly. Always check with you local authorities prior to commencement of works.

9.5. Stamp or Pressed Bluestone Patterned Concrete

Stamp concrete is similar to plain coloured concrete. Usually metal stamps are applied to the wet concrete during construction to leave a bluestone pattern and effect in the surface.
The surface can be coloured with liquid concrete colours which generally fade extensively within 12 months or coloured oxides which are less prone to fading.
Pavecoat Clear or **Pavecoat Coloured Sealers** are recommended for this surface.
Preparation of this surface is the same as plain concrete and refer to the relevant TDS for further information.

Care should be taken to avoid an excess sealer build-up in the deep grooves. If this occurs, large bubbles and moisture affected sealer may result.

Note: The top of the pattern can become slippery when wet, particularly if very smooth. The use of **Anti-Slip Additive** in the second coat may improve grip.

10. Warehouses, Factories, Vehicle Repair Workshops Floors and External Refuelling Stations

Understanding the end use of a factory/ warehouse is of paramount importance.
These building can be subjected to each, or a combination of the following factors which may compromise long term coating performance;

- Chemical storage or use - Acid or Alkali
- Exposure to aggressive chemicals
- Exposure to light machine oils
- Petrochemicals

Determining these factors will assist in the correct product being selected to provide long term performance. Utilising products that have excellent mechanical and chemical resistance properties will be detrimental to the long term performance of the coating .

Factory/ warehouse concrete floors are usually steel float finished and can be extremely hard and non-porous. Preparation recommendations for these surfaces are as outlined;

- Degrease **Nu-EcoSafe Degreaser**
- Etch **Nu-EcoSafe** typically follow the TDS guidelines for hardened MpA Concrete

10.1 Areas of Heavy contamination

If the surface has been heavily contaminated with oils grease or chemicals, thorough cleaning and degreasing of the surface prior to etching is imperative. Refer **Nu-EcoSafe Degreaser** TDS.

Note: Depending on the level of exposure to the contamination the concrete has been subjected to and absorbed over time, effective cleaning of the contamination may never be entirely removed. The customer must be made aware and accept that less than ideal long-term performance on these areas of the floor can only be achieved.

10.2. Product Recommendations

PaveCoat Clear and Coloured sealers may seem a cost effective surface treatment and are easily applied and recoated. They are however, easily damaged by forklift tyres, pallets and other mechanical influences.
As a general rule of thumb, for high wear activity factories and warehouses, mechanical and engineering workshops or facilities exposed to chemicals, a more durable finishing system is required.
Typically the **EPiC Epoxy 500, EPiC Epoxy 100, EPiC AquaEpoxy** are best suited for these INTERNAL environments. Whilst these products typically have excellent chemical and mechanical performance characteristics, exterior durability is poor.

For Refuelling service stations exposed to EXTERIOR environments, **Pavecoat PR** petrol resistant sealer or **EPiC Polycryl** should be used.
For areas that are in constant contact with liquids, it is advisable to also use Anti-Slip additives for extra grip.

11. Removal of an Existing, Sealed or 2 Pack Coated Concrete Surface

Generally the preferred method of surface refinishing, complete removal of the existing surface is recommended. By removing the old, worn finish eliminates any previous poor preparation or underlying adhesion issues. This can be performed in one of 2 ways;

- Mechanical Abrade
- Chemical Strip

Both systems have their advantages and disadvantages

System	Advantage	Disadvantage
Mechanical Abrade	Relatively easy to perform	Labour intensive
	Contractors generally have equipment	Capital expense
	Once abraded, generally no etch required however, surface porosity must be assessed	Significant dust dirt and debris
		Cost of consumables
		Not suitable to remove oil/ grease
		Loud process
Chemical Strip	Ease of access to products	Often harmful and noxious chemicals
	Application into tight areas	Labour intensive
		Not suitable to remove oil/ grease
		Will require Concrete Etch
Nu-EcoSafe Strip Range	Nutech offer environmentally friendly, EcoSafe Strippers in 3 levels of effectiveness	Ensure the solution does not dry out
	Cost effective solution	
	Residue can be neutralised, shovelled up and disposed.	
	Low odour	

Nu-EcoSafe Strip is a user friendly range of water-based, biodegradable paint removers available in 3 strength levels; **Architectural**, **High Performance** or **Industrial**.
Developed specifically for the removal of a range of existing coatings from a range of substrates, including concrete they are an ideal, cost effective alternative to mechanical abrading or abrasive blasting.
Product recommendations and application instructions can be found in the relevant TDS.

12. Recoating of Existing, Sealed or 2 Pack Concrete Surface (overview)

This section covers the most appropriate preparation and in the case of sealers, rectification of potential sealer related issues. The reader must understand that preparation and rectification of sealers and 2 pack coating systems are quite different, with the most appropriate recommendations presented in this section.

In most instances, providing that the existing sealer or coating is in good physical condition and free from flaking and delamination, exposure to oils or chemicals or unless the composition of the original coating is known, Nutech recommends avoiding recoating an existing coated concrete surface as underlying poor preparation and contamination of the concrete may well have been a contributing factor to the initial issues encountered.
For enduring results, a complete removal of the old existing surface is recommended.
Outlined in the following sections Nutech will provide you with a guide to identifying and refinishing existing surfaces.

Note: Whilst complete removal of the existing coating is not always ideal, Nutech recognises this may not be practical however, the end user must accept that in some instances, less than optimal performance will be achieved. In any event, a small area should be tested for suitability prior to commencement of works.

12.1. Identifying The Composition of an Existing Coating

Determining the composition of a pre painted surface prior to purchase of any coating products, preparation and application is vitally important to the long term performance of the top coat system, to ensure the most appropriate top coat selection and intercoat adhesion performance of system to be applied. Incorrect identification of the existing surface can lead to incompatibility and ultimately, coating system failure. This guide provides you with an overview on how to identify and determine what coating will be best suited for re-application.

Test Area

Where practical, test on an inconspicuous even, flat surface where the existing coating appears to be in a stable condition.

Nutech Tip: To ensure consistency of the results, test in 3 or 4 separate areas.

- Apply the Coating Test Kit solvent to the pre painted surface in a 50mm diameter area
- Allow the solvent to activate on the surface for 3 minutes
- During the activation time, observe the test area for any significant reactions or changes
- Wipe the surface with a clean, lint free cloth and observe the results outlined

12.2. Coating Composition Test Results

Coating Composition Assessment Results			
Sticky or tacky and rehardens Similar product to: - Solvent Based Acrylic - Chlorinated Rubber	**Wrinkling and/ or removal** Similar product to: - Quick Dry Enamel	**Gritty or gums up** Similar product to: Typical water based Product	**No reaction /clean surface** Similar product to: Typical 2 Pack Product
Nutech Products: - Pavecoat - NuPool Chlorinated Rubber	**Nutech Products:** - EPiC Quick Dry Enamel - EPiC Industrial Enamel	**Nutech Products:** - Pavecoat H_2O/ Solvent based Testing Pavecoat on this coating is recommended as a precaution.	**Nutech Products:** - Polycryl - EPiC Epoxy 500 - NuPool Epoxy

After determining the composition of the existing finish, making sure the correct preparation procedure specific to that sealed or coated surface is followed.

Prior to commencing the refinishing procedure, it is advisable to thoroughly clean the existing surface. Remove any loose or flaking coating or sealer, remove any food scraps, sealant, debris, oil and or grease and thoroughly degrease and rinse the surface following the recommendations outlined in the **Nu-EcoSafe Degreaser** TDS and allow the surface to dry thoroughly.

12.3. Etching of Old Seal or Old Coated Surfaces

Contrary to common assumptions, acid etching of the sealed or coated surface **SHOULD NOT** be performed prior to recoating. Some sealing and coating systems do not offer very good chemical resistance and as a consequence, may ultimately result in breaking down the sealer or coating to a point where intercoat adhesion failures may result. Always follow the recommended recoating procedures outlined by Nutech Paint.

12.4. Preparation of an Existing Sealer or Coated Surfaces

Typically, over many years most sealed or coated surfaces are exposed to each or a combination of surface contaminants such as, but not limited to;
Oil, grease, food, silicone sealants and silicone sprays (from the application to vehicle tyres). All of which will compromise the intercoat adhesion between the original sealer or coating to the new top coat.
During application of a second coat of sealer, the first coat may be easily damaged, and often a roller will easily pull up a first coat. Conversely, during application you may notice the top coat is “pulling away” or “fish eyeing” on the surface. This is typically due to a contaminant such as an oil or grease or silicone based contaminant. ***These issues always indicate poor surface preparation.***

Typical example of surface contamination

Contamination issues caused from insufficient surface preparation can result in a less than perfect finish. This image is typical of silicone or oil contamination on the original surface.

The surface tension of the sealer or coating is compromised inhibiting flow, resulting in a “fish eyeing” effect.

Note: This coating must be completely stripped, properly prepared and recoated.

Applying a thick/ heavy second coat may disguise some immediate surface coating defects, however it will not resolve the adhesion problem caused by inadequate surface preparation.

In order to minimise or eliminate these issues, Nutech recommends thoroughly degreasing the surface following the recommendations outlined in the **Nu-EcoSafe Degreaser** TDS.

12.5. Sealants & Jointing Compounds

Sealers and Coatings generally, will not adhere to silicone based jointing compounds or sealants. Removal of the compound and thoroughly degreasing the area will be required prior to resealing or recoating.
Once sealed or coated and cured sufficiently, replacing the joint compound with a flexible moisture cure polyurethane such as Sika 15LM or Bostik Seal'n'Flex is recommended.

Nutech Tip: After the removal of the silicone sealant or jointing compound, residual or stubborn material can be removed by using a clean rag and a solvent based preparation solvent or “Prepsol”. Always follow the manufacturer’s recommendations and observe ventilation requirements where applicable. Wipe the surface clean with a clean dry cloth to ensure a smooth and contaminant free surface.

13. Refinishing an Existing Surface

13.1. Compatible Single Pack Acrylic Sealer

Once the existing finish is identified as a single pack acrylic sealer, it is possible to re-activate the existing sealer in order to prepare and improve intercoat adhesion with the top coat. This is possible using **Nutech Reactivating Solvent**, a powerful solvent-based product developed as an effective means to soften or "re-activate" old, acrylic concrete floor sealer prior to refinishing.
Reactivating Solvent is a more efficient way to prepare old acrylic sealed surfaces than conventional solvent based paint thinners that are not designed for this purpose.

NOTE: *Reactivating the surface **cannot guarantee success**. Flaking sealer may require stripping and require appropriate surface preparation prior to re-sealing.*

Nutech Tip: Perform a test patch as outlined in the ***Procedure*** in the relevant TDS and allow to weather for approximately 4-6 weeks to assess performance. If the new sealer fails in the test patch during this period, Nutech Paint recommends stripping the old surface completely.

14. Specific Issues encountered With Refinishing Sealers

14.1. Sealer Delamination

Usually exhibiting a silvery white patchy effect across the surface of a clear sealer, delamination is typically caused from age and UV exposure as the original sealer breaks down and loses flexibility. The effect is caused by air trapped between the concrete surface and the sealer. Often, when the surface is wet, the white appearance disappears temporarily as the trapped air under the sealer is displaced by moisture. The silvery white appearance reappears once the surface has dried.

14.2. Issues Encountered From Resealing Old Finishes

This creates a complex situation as resealing will often accelerate delamination of the old sealer and cause widespread failure of both the new and old coats of sealer.
Delaminating due to resealing typically results in silvery white patches spreading over clear sealed surfaces fully exposed to weather and sun within 4 to 6 weeks of resealing and is why Nutech recommends testing a patch and observing the result after this time period.

14.3. Sealed Slate Impression Paving

In this particular case, the sealer relies on surface adhesion rather than a penetrative key to the concrete. Surface adhesion is typically quite good as the surface is either slightly rough due to finishing technique or partial acid etching.
The surface can often be re-sealed several times over several years without any issues however, after several attempts to reseal, the sealer can begin to delaminate due to excessive solvent absorption.
Typically the sealer may begin to show signs of adhesion failure after only weeks or months after the original application or alternatively, issues may be observed over a longer period of time after which, the sealer loses flexibility and becomes brittle, as outlined in the Sealer Delamination section of this document.

14.4. Seal Repair Solution

Solvent washing, reactivating or resealing will usually only temporarily restore the original appearance, and the delamination problem may reappear in the future.
Nutech Seal Repair Solution is a cost effective means to temporarily rectify and reinvigorate an old and damaged solvent based acrylic sealed concrete floors.
This is subject to technical criteria outlined in the Seal Repair Solution TDS (Test Patch & Assessment).

14.5. Coloured Sealers

The most commonly observed issues with coloured sealer is either a worn dull surface or flaking.
A worn dull surface can easily be restored simply by thoroughly cleaning, reactivating with **Reactivation Solvent** and recoating.
A flaking sealer requires additional preparation by observing the recommendations outlined in the **Seal Repair Solution** TDS.

14.6. Multiple, Thick Coats of Sealer

After many coats of clear or coloured sealer the appearance of a decorative concrete finish usually degrades. This is a very subjective matter and must be individually assessed. To restore the original appearance, **Seal Repair Solution** may extend the aesthetic life of the old sealer, but ultimately stripping will be required. Coloured sealers usually do not require stripping unless adhesion issues develop.

14.7. Damaged Sealer Surfaces

Petrol, brake fluid, mower fuel, acids and many household chemicals and cleaners can damage clear and coloured sealers. Sealers can also be physically damaged by scratching or mechanical wear such as hard plastic wheeled toys and dragging outdoor furniture etc. across the surface. Sealers which are easily damaged can also indicate other problems such as a soft concrete surface or poor surface preparation and application. Cleaning and stripping damaged areas followed by resealing may be required to disguise damaged areas.

14.8. Application of the Sealer

Follow the details outlined in the respective **Pavecoat**, **Pavecoat PR** or **Pavecoat H_2O** TDS.
For properly prepared existing surfaces, thinning is generally not required. 2 coats should be applied.
Observe recoat and dry times as stated in the relevant TDS.

15. Refinishing an Existing, Compatible 2 Pack System

2 pack coatings are regarded as very tough, chemical resistant and hard wearing coated surfaces. Depending on the system selected, excellent exterior durability is also achievable. Years of neglect, mechanical and environmental degradation, wear to the surface and general wear and tear in high traffic areas all take their toll.
At some point all of these factors will wear the coating which will affect the aesthetic quality of the finish. A suitable refinishing process will ultimately be required.

As noted in this section's overview, in order to provide optimum performance and results, Nutech recommends stripping the original surface. However, providing that the existing coating is in good general condition and is free from delamination, flaking or any other damage, the coating can be refinished.

> **Note:** At this point it is important to understand 2 pack coating systems are generally impervious to chemical softening, therefore the use of Seal Repair Solution or Reactivating Solvent will offer no benefit in the preparation of this surface.

15.1. Preparation of an Existing 2 Pack System

Once the composition of the 2 pack system has been identified or is previously known, prior to any surface treatment, a thorough clean and degrease is required. Remove any traces of food, sealant and any other light surface contaminants and degrease and rinse the entire surface, following the recommendations outlined in the **Nu-EcoSafe Degreaser** TDS.

To ensure an optimum surface key for adhesion is achieved, a thorough mechanical abrasion of the surface (Using P80 – P120 grit sanding discs) is recommended.

Remove all remaining dust, dirt and debris, degrease, rinse and allow the surface to thoroughly dry, as outlined in the **Nu-EcoSafe Degreaser** TDS.

15.2. Application of the 2 Pack System

Follow the details outlined in the respective **EPiC Epoxy 100**, **EPiC Epoxy 500**, **EPiC PolyCryl**, **EPiC AquaEpoxy** or **EPiC Aquafloor** TDS.
Observe hardener addition requirements and drill mix for 5 minutes.
For prefinished surfaces, thinning is generally not required and 2 coats should be applied.

Observe recoat and dry times as stated in the relevant TDS.

Note: If the second coat is not applied within the recommended timelines, the first coat must be abraded.

16. Common Problems Encountered with Concrete Sealers and Coatings

The details outlined in this section will highlight some of the most common issues often encountered with sealers and coatings. Often, there are multiple issues that are contributing to the problem observed. We have done our best to outline as many common issues as possible, but the reader must understand that there are numerous variables that cannot be accounted for. Therefore it is advisable as "good practice" when coating a project to record and keep the data outlined in **Section 16.2** specific to the project.

16.1. Faulty Sealer or Coating

Nutech Paint develops and tests our range of concrete sealers and coatings to a wide range of application and performance criteria, develop over may years' experience. We manufacture large batches of concrete sealers and coatings which are done so in accordance to strict quality control processes and guidelines. The likelihood of a single drum being faulty is highly unlikely but not impossible.

Typically, the cause of a fault will most likely occur due to, but not limited to individual or a combination of issues;

- Intermixing another suppliers' product
- Not following Nutech Technical information
- Incorrect thinners
- Incorrect use of a particular sealer or coating
- Incorrect addition of hardener (2 Pack Systems)
- Incorrect application conditions – too hot, too cold too wet etc.
- Insufficient dry film build
- Water ingress
- Insufficient preparation
- Insufficient time to complete the project
- Incorrect addition or use of anti-slip

These are just a few of the many issues to be encountered. Should an issue arise, contact Nutech Paint for further advice and support.

16.2 In the Event of an Issue

Understanding the problem that is encountered is critical. In order for Nutech Paint to assist you as efficiently as possible, we will always ask you for the following information;

- Project Location/ Address
- Copy of the sales invoice
- Preparation and application guidelines adhered to (TDS, Product labels and application guides)
- Time and day of application
- Climatic conditions on the day
- Type of concrete & surface – New/ Old
- Condition of the Surface
- Preparation process
- Mixing and dilution ratios
- Number of drums affected
- Batch number(s) of the product(s) used
- Photo evidence of the issues

Further details can be provided by contacting Nutech Paint direct (03) 9770 3000 and email images and the above information to: www.nutechpaint.com.au

16.3. Inadequate Surface Preparation

The most common issues encountered when coating concrete are generally related to poor surface preparation. The most common of this is relating to delamination, silver/white patches or spots, loss of colour, poor durability, hardness of the coating, bubbling of the surface, staining, efflorescence, moisture content and so on. It is vitally important to read and follow all recommended product and application directions as specified on the product labels, TDS' and Application Guidelines. In some instances, a small inconspicuous test area is recommended to assess the performance of the system (a good example is Seal Repair Solution or Reactivating Solvent) and to give an indication of how long it could possibly take to complete the project. If the coater is in any doubt, prior to commencing a project, contact Nutech Paint for the most appropriate recommendations.

16.4. Poor Application – Insufficient Coating Thickness

It is important to understand that application or spread rates outlined in any Nutech product TDS are set for a specific reason. All testing and mechanical performance properties have been established based on the film thickness of each of the Nutech Sealers and Coatings. The specific requirements of a sealer or coating may be compromised if the application rates and film thicknesses are not followed. Failure to observe this recommendation will result in poor long term performance and durability.

16.5. Delamination of the Coating or Sealer

There can be several issues relating to delamination. Poor surface preparation is most typical and usually has resulted from an unstable substrate surface. Dust, dirt, grease, oil and silicone, just to note a few, are usually the key issues relating to this issue. However, failure to observe first coat dilution rates can also contribute to this problem. All Nutech technical recommendations outline the need for first coat dilution in-order to penetrate the surface. Ensuring surface adequate porosity and observing first coat dilution rates on bare, uncoated concrete is imperative.

It should also be observed that very old sealers and coatings, over time may lose flexibility, crack and delaminate or due to other external influencing factors.

16.6. First Coat Failure

Problems associated with this issue can relate to poor surface reparation that may prevent the first diluted coat of sealer or coating from penetrating the surface. Other issues could be efflorescence or the application conditions such as hot weather. In hot conditions, failing to observe the ambient condition recommendations in the TDS may result in the first coat drying too quickly and prevent it form penetrating the surface of the bare concrete.

16.7. Milky Whiteness in a Sealer

If a sealer is affected by moisture during curing it can appear milky or hazy. If weather conditions are favourable, reactivating the sealer with **Reactivating Solvent** may allow the moisture to evaporate from the sealer as it redries. If this issue has appeared within the few first days of application, it is important to rectify during the first 7 days. If the sealer is not reactivated within this time frame the milky appearance may not disappear. The only course of action is to strip and reseal the surface.

16.8. Silvery White and Flaking Appearance in a Sealer

If the surface presents a silvery white appearance and is flaking, it is highly likely the issue is due to poor surface adhesion, most likely from poor preparation of the substrate. This can be tested by scratching the surface of sealer and observing any flaking or powdery residue.
A short term remedy is to use **Seal Repair Solution** and resealing, however the final result may not be satisfactory. Ultimately, stripping the surface may be the course of action as this will give the coater the opportunity to prepare the substrate correctly.

16.9. Efflorescence

Efflorescence is typically composed of calcium carbonate or soluble salts. It is quite a common issue observed on the surface of concrete slabs, concrete walls, concrete and clay pavers and bricks.

Calcium Deposits

Crystalline Salt Deposits

Efflorescence can occur when water vapor carrying either calcium hydroxide or soluble salts migrate to the surface of substrate. In the instance of calcium carbonate, it can form by the hydration reaction (becoming calcium hydroxide) between Portland Cement and water.
When the calcium hydroxide reaches the surface of the concrete, it combines with carbon dioxide in the air to produce calcium carbonate or efflorescence. Conversely, soluble and non-soluble salts are leached from the earth in ground water. Both of which are observed as a dusty white, pale grey, pale yellow or even a green powder deposit or stain (depending on the type of salts present), it can appear immediately after the concrete has hardened or sometimes, in a matter of days or weeks.
Water is the key to triggering the issue, be it the migration of salts or calcium carbonate to the surface.
Calcium carbonate deposits may be caused by a range of factors such as; excessive water in the concrete/ mortar mix, water thrown on the surface to assist trowelling, rain on the surface or moist cool temperatures.

16.10. High Concentrations of Ground Water

This is often observed adjacent to garden beds or in situations where there is poor drainage or hydrostatic pressure. This is typically due to water runoff, incline, level differences or underlying ground water. In areas of high levels of ground water, a yellow efflorescence salt is often observed. In this instance, resealing may be required.
Efflorescence can continually appear over a period of years, highlighting underlying drainage or ground water issues. Often this problem can only be resolved with additional site drainage/ rectification works. Professional advice should be sought to remedy this issue prior to application.

16.11. Primary & Secondary Efflorescence

There are 2 main types of efflorescence that can occur;

Primary Efflorescence - Typically occurs when salts present in concrete or clay substrates are dissolved and migrate by capillary action to the surface as water evaporates. Primary Efflorescence can typically occur for a period up to 2 – 3 years and will naturally disappear as the salts within the substrate are depleted.

Secondary Efflorescence – Typically occurs from salts in ground water or from another source and migrate to the surface by hydrostatic pressure. Hydrostatic pressure occurs when ground water travels under a building, the downward pressure from the building's weight forces water through the substrate to the surface. Naturally occurring soluble and non-soluble salts can be leached from the ground water and are eventually deposited on the surface. Left untreated, this issue may never be resolved.

16.12. Why Does the Sealed Surface Exhibit Efflorescence?

The main reason for this is single pack acrylic sealers are moisture vapour permeable. This means soluble salts can permeate through the sealer to the surface.
It has been observed that three or more coats of Pavecoat will block salts in most cases, providing that the first coat has adequate penetration and adhesion.
Otherwise a less water permeable finishes such as the **EPiC 2 Pack Systems** may be advantageous in order to allow any residual efflorescence to diffuse to the surface.

16.13. Dealing with Efflorescence

Underlying issues associated with efflorescence can cause instability underneath sealers and coatings and can delaminate if these issues are not treated accordingly.
Identifying if there is a ground water source or drainage issue is of paramount importance prior to preparation. It is recommended that a professional advice is sought to identify and rectify the issue prior to preparation and application.

Best results are achieved by mixing in a plastic watering can a solution of;

- 1 part hydrochloric acid to 100 parts water (1:100) OR - 100ml hydrochloric acid to 10 Litres water
- Apply to the affected area and firmly scrub with a stiff bristled broom.
- Flush the area thoroughly after acid washing with clean fresh water
- Allow the surface to dry thoroughly

16.14. Patchy Coloured Sealer

Exposure to moisture and dew can cause discolouration and gloss variation in a newly applied colour sealer. This can be impacted by the environmental conditions of the day of application. Following the directions outlined in the relevant TDS with **Nutech Reactivating Solvent** in more favourable ambient conditions when the weather is more suitable, can remove the patchy appearance.

16.15. Concrete Colour Variation

When clear sealing uncoloured concrete can highlight natural colour variations in the surface, leaving a patchy or blotchy appearance. This cannot be fixed without stripping the sealer or colour sealing.
Colour variation may occur in topping coloured concrete due to a number of factors;
weather, different oxide colours, different concrete pours, etc.
Clear sealing this surface can highlight and exaggerate these colour variations.
This variation can be minimised by the addition of a colour to the sealer.

Adding 1 or 2 litres of appropriately coloured sealer to 20 litres of clear sealer creates a transparent stain which can disguise colour variation. In order To prevent colour inconsistency during application, care must be taken to prevent;

- runs in the sealer during application (likely on steep concrete), and
- application inconsistencies such as broom sweeps.
- colouring of plain pointing in stencil concrete

16.16. Concrete Sealer Incompatibility

There have been cases where an old sealer is prepared correctly and a coat of a different brand of sealer is applied in accordance with the manufacturers' specification. The two resin systems and the solvent may react adversely and problems such as blistering and delaminating can result. The problem is observed more in summer than in winter and is probably temperature related.
Reactivating the damaged surface with thinners allowing several days prior to recoating has been observed to repair a damaged surface adequately.

16.17. White/ Silver Spots in Clear Sealer

The appearance of small opaque white/ silvery spots in the clear sealer can usually be attributed one of two factors. Both of which relate to poor surface adhesion of the sealer at the time of application.

1. Salt crystallisation: Although quite uncommon, delamination generally does not occur. However, if there is an adhesion issue, efflorescence salt crystals may form underneath the sealer, causing the effect.

2. Typically related to a sand or glass based anti-slip additive in the sealer. Sand and glass are not flexible and expand and contract at different rates to the sealer and concrete. If a sealer is exhibiting poor surface

adhesion, often the expansion and contraction of the sealer may cause delamination around the anti-slip particle, resulting in an opaque white spot.

These cases can usually be resolved by fixing the sealer adhesion problem. This may require the application of **Nutech Seal Repair Solution**, following the recommendations outlined in the TDS, or ultimately, stripping the surface and properly preparing the surface prior to resealing.

16.18. Blushing or Blooming of Clear Coatings in Cold Conditions

Clear coatings can blush or bloom in cold weather if the application conditions are unfavourable. The effect normally looks like a milky white haze either across or in patchy areas on the coated surface. This can be particularly prevalent in two pack epoxy and polyurethane coatings.
To avoid blushing or blooming with these coatings observe the minimum application temperature recommendations outlined in the relevant TDS and typically arise in ambient conditions below 15°C.
If the application of these technologies in internal low temperature conditions is unavoidable the use of mobile heaters to increase the ambient temperature is recommended. For external environments two pack system components can also be heated in hot water baths to 20°C to improve curing time, although pot life will be affected.

16.19. Osmotic Bubbling

Typically observed in freshly applied, water resistant epoxy or polyurethane coatings, where higher than recommended levels of moisture is trapped within the concrete. Often, the issue is caused by hydrostatic pressure forcing the moisture to the surface.
As the top coat starts to form a 'skin', moisture is unable to escape and a bubble is formed.
Often, the only solution is to strip the coating and start again.

To reduce or eliminate this issue, the use of plastic membranes under the concrete and testing for moisture content(below 5%) is recommended. Consult Nutech for specialist information.

16.20. Black Tyre Marks

16.20.1. - Sealers:
Single pack acrylic concrete sealers are comprised of thermoplastic resins which, when exposed to heat, will soften. Skidding or spinning rubber vehicle tyres will generate heat friction leaving unsightly black marks. These marks cannot be easily removed as the rubber and sealer become imbedded in the surface.
To remove black tyre marks apply **PaveCoat Thinners** or **Reactivating Solvent** and scrub to dissolve the sealer. Remove the sealer and burnt rubber with a clean lint-free rag and spot re-apply sealer.

16.20.2.- 2 Pack Systems:
Are thermoset,2 pack systems such as polyurethane and epoxy coatings and are typically more robust when exposed to friction and heat from vehicle tyres.
Tyre marks can generally be easily removed or washed off. Mild detergent may remove light marks and for more stubborn marks **PaveCoat Thinners** will assist this process.
NOTE: Care must be taken when using **PaveCoat Thinners** due to flammability. Observe details outlined in the TDS and SDS.

16.21. Tyre Imprints and Tyre Pick Up on Single Pack Sealers
Vehicle tyres become hot when driven due to friction generated from rolling resistance. As acrylic sealers are thermoplastic, hot tyres can partly vulcanise to the surface of the sealer.
Conversely, a vehicle may have been parked on the sealer or coating before it has had adequate time to cure.

There can be several other issues associated with this particular problem and are as outlined;

- Some vehicle tyre compounds may be affected by the solvent in the sealer which will continue to evaporate over several months. In rare cases particularly during hot weather, this may be more prevalent.

- Due to inadequate surface preparation, the first coat does not penetrate into the concrete, adhesion problems may occur.
- Hot tyres are parked on the coated surface of a sealer. This effect may also be amplified if the ground surface is wet.
- On slate impression where excess coloured release agent under the sealer is also removed.

Patch restoring the damage may not prevent reoccurring issues. In some cases, tyres may stick for the first few weeks, after which the problem does not reoccur for several years. This is usually when a sealer becomes less flexible due to age and adhesion problems develop.

To restore a tyre print in a sealed surface, reactivate the surrounding sealer using **PaveCoat Thinners** or **Reactivating Solvent**. Spread the liquid sealer over the print to disguise the damage.
Resealing the area may also be required. This recommendation will not resolve the underlying adhesion issue which ultimately, stripping and properly preparing the concrete surface may be required.

Foot Note: It has been observed that the addition of anti-slip in the topcoat will reduce the problem of tyre pick up. Applying a new coat containing Anti Slip may assist in reducing the issue.

Care & Maintenance

Floor Coating Systems

Protecting your Investment

Regular care and maintenance will ensure the long term aesthetic and serviceability of your Nutech coated concrete floor and minimise the need to recoat the surface less frequently.

This guide has been developed to provide care and maintenance recommendations for a variety of Nutech Paint sealed or coated concrete surfaces. Whilst all endeavours have been taken to provide best practice industry information for all aspects of preparation, application and maintenance of our products, the user must understand that all coated concrete surfaces are unique and not every situation will be covered in this guide.

For further technical recommendations and advice, please contact Nutech Paint.

These recommended regimes should commence once the coated finish is fully cured and in a serviceable state.

Prior to Commencement of works:

Observe all Occupational Health and Safety (OH&S) precautions.

Refer to the relevant Technical Data Sheets (TDS) and Safety Data Sheets (SDS) for product specific and safety related information. For further information and support: **Nutech Paint 03 9770 3000**

www.nutechpaint.com.au

Interior finished flooring systems

Sweep or vacuum floors daily.

If abrasive particles are present, vacuum debris or following the recommended dilution rates, mop using a mild detergent or cleaner suitable for coated concrete floors.

In the event of spills on the coated surface:

Any chemical spills should be promptly cleaned up and thoroughly rinsed off and observing safety guidelines in accordance with the relevant product manufacturer's recommendations.

Remove any oil, grease using **Nu-EcoSafe Degreaser**.

Nutech Tip:	Some chemicals may be aggressive to the floor coating surface and may cause damage. It is recommended prior to using such materials, ensure technical and safety information is observed and ensure appropriate spill precautions are in place.

Weekly maintenance:

NOTE: Be sure to test any cleaner (diluted to the manufacturer's recommendations) that has not been exposed to the floor surface previously on a small inconspicuous area to ensure no damage is caused.

All coated floors should be mopped with a mild floor cleaning detergent on a regular basis following the manufacturer's recommended dilution rates.

Mops should be rinsed frequently, and cleaning water and detergent changed regularly.

Stubborn oil, grease and fats can be cleaned using **Nu-EcoSafe Degreaser** in accordance with the Technical Data Sheet.

Anti-Slip finished surfaces: May require the use of a stiff bristled broom to remove any dirt and debris followed by a mild detergent mop and clean.

Oil and Grease contamination can be cleaned using **Nu-EcoSafe Degreaser** in accordance with the TDS.

Exterior finished flooring systems

Sweep floors daily where practical.

If abrasive particles are present, lightly hose debris or following the recommended dilution rates, mop using a mild detergent or cleaner suitable for coated concrete floors.

Moss, Mould or Lichen: Treat using **Nu-EcoSafe MossRid** as recommended in the relevant TDS.

Grease and Oil: Treat using **Nu-EcoSafe Degreaser** as recommended in the relevant TDS.

In the event of spills on the coated surface:

Any chemical spills should be promptly cleaned up and thoroughly rinsed off and observing safety guidelines in accordance with the relevant product manufacturer's recommendations.

Monthly maintenance:
NOTE: Be sure to test any cleaner (diluted to the manufacturer's recommendations) that has not been exposed to the floor surface previously on a small inconspicuous area to ensure no damage is caused.

All coated floors should be mopped with a mild cleaning detergent on a regular basis following the manufacturer's recommended dilution rates.
Mops should be rinsed frequently, and cleaning water and detergent changed regularly.

Anti-Slip finished surfaces: May require the use of a stiff bristled broom to remove any dirt and debris.
Oil and Grease contamination can be cleaned using **Nu-EcoSafe Degreaser**.

Stubborn Stains (Interior and Exterior):
For areas where pooled oil, grease are difficult to remove, refer to **Nu-EcoSafe Degreaser** TDS and allow a longer dwell time prior to rinsing.
Mould, Moss and Lichen:
Refer to **Nutech Hypo** TDS and pressure wash as recommended.

Black Tyre Marks:
Removal of black tyre marks can be difficult, particularly on acrylic concrete sealers. If the composition or supply of the coating or sealer is unknown, it is recommended that the surface be assessed using the **Nutech Test Kit**.

- **Acrylic sealers:**
  Apply **Reactivating Solvent** and lightly scrub to dissolve the sealer. Remove the sealer and rubber stain with a clean dry cloth. Reapply sealer where applicable.
- **Polyurethane and epoxy surfaces:**
  These types of coatings are generally easier to scrub and wash off. The use of **Nu-EcoSafe Degreaser** is recommended.

Nutech Paint
For a perfect finish!

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