The PeterFell System

General Information

PeterFell

SPECIALISTS IN COLOURED CONCRETE

The information contained in this document is true and accurate to the best knowledge of Peter Fell Ltd. We cannot however anticipate all conditions under which this information and our products may be used. Peter Fell Ltd therefore accepts no responsibility and offers no warranty with respect to results obtained by the application of our products, their suitability, or for their safe use. Peter Fell Ltd offers our products for sale subject to, and 'The Customer' and all users are deemed to have accepted, our Terms and Condition of Trade. Peter Fell Ltd warrants our products to be free of manufacturing defects. If the product when purchased was defective and was within recommended storage life when used, Peter Fell Ltd will replace the defective product with new product without charge to the purchaser. Peter Fell Ltd makes no other warranty, either expressed or implied, concerning our products.

version 1.0

Introduction

Since 1992 Peter Fell has been inspiring people with possibilities of decorative concrete. He has successfully destroyed the myth that concrete is grey, cold, and dull by developing the PeterFell System - a tool box of options that utilises coloured concrete and associated products to create beautiful, durable and unique flooring solutions. Within these pages you too will find the options to create the perfect concrete element for your new project and realise that your imagination is the only limit to the possibilities. To see where this journey has taken some of our other customers, we invite you to visit our galleries on our website at www.peterfell.co.nz.

Concrete is the most widely used construction material on earth with documented use from 7000 BC - with many of these ancient structures still functional today. This proven durability coupled with its unparalleled versatility, thermal efficiency, and very low maintenance makes concrete the perfect building material for all residential and commercial applications. The PeterFell System provides the tools to allow owners and designers to transform this ubiquitous medium into a truly unique solution.

The PeterFell System is an integral colour system, where a liquid colour is mixed through the concrete. This results in the permanent colouring of the concrete which, unlike surface coatings, will not chip off or wear away. The natural movement and variation inherent in all concrete is enhanced and extended by the PeterFell System, creating stunning and unique floors. This colour movement gives the floors character and style and provides deep rich colour.

The System can be used in all concrete applications, but is most commonly used in hard flooring - from stylish internal floors to pool surrounds, from drives to hard wearing retail surfaces. You can use the same surface design inside and out, making it the perfect medium for creating seamless indoor-outdoor flow. But flooring is just the start - our system has been used in pre-cast wall panels, in situ feature walls, bench tops, hearths and even sprayed concrete for stabilisation of steep banks.

The PeterFell System is not just about colouring concrete but also about giving the right look and feel to the surface. Through the use of different textures and finishes, together with decorative cut patterns and grout colours, a diverse array of design possibilities exist - from sleek and modern to contemporary and warm. The huge variety of combinations created by these simple elements allows the PeterFell System to be customised to meet virtually any design requirements.

For new construction, the PeterFell System offers one of the most cost effective hard flooring solutions. As concrete is present in most new building design anyway, the small price premium paid for the PeterFell System is almost always more cost effective than covering the concrete with another flooring product such as carpet, timber, laminate, or tiles. It also saves time as no further installation is required.

Here at Peter Fell Ltd we have been helping people through their design process for many years. Our staff have vast experience and knowledge, and we encourage you to visit the showroom or call our Customer Services at any stage during your project. While we are only suppliers of the material, we have close relationships throughout the concrete industry and with many contractors, and can make recommendations on the best way forward.

The PeterFell System has fulfilled the dreams of thousands of customers and we will do all we can to ensure your dreams are fulfilled too.

Contents

Why should I use concrete?

Concrete is one of the oldest and most widely used construction materials, and possess many inherent qualities which can benefit designers, architects, engineers, and most importantly the end user.

The following factors together contribute to make long lasting, low maintenance buildings that are some of the most comfortable to live in and efficient to run.

Durability	Well designed and well placed concrete offers exceptional durability and long life in any structure.
Versatility	Building in concrete provides an extraordinary range of applications and surface finishes, providing the opportunity for architectural expression to go hand in hand with structural integrity. This single medium can be used inside and out, for residential and commercial buildings, and in modern and contemporary designs.
Health and Comfort	Concrete not only provides a structurally sound and aesthetically pleasing construction option, the use of concrete can also contribute to improved occupant health and comfort. For more information on the use of concrete in creating healthful environments please visit www.smarthomes.org.nz - a government and private sector joint initiative for creating more efficient housing.
Environmentally Friendly	Well designed concrete buildings require less energy and resources to run and maintain (see 'Thermal Efficiency' below). Advances in concrete technology and manufacturing processes mean concrete is now being viewed as a key material in New Zealand's pursuit of sustainable development. For more information on the environmental impact of concrete please visit www.sustainableconcrete.org.nz, a concrete industry initiative to reduce the environmental impact of concrete.
Thermal efficiency	Concrete acts as a thermal 'sponge', absorbing heat during the day to help cool a building, and then releasing that heat when the ambient temperature drops at night. With design consideration to improve the capture of solar energy, coupled with the use of insulation, concrete can significantly improve the thermal performance of new buildings and lower energy requirements and costs.
Fire resistance	Concrete provides the best fire resistance of any building material. It cannot catch fire, it does not burn, emit smoke or toxic fumes in the event of a fire.
Acoustic Insulation	Concrete's mass and damping qualities are easily used to achieve good acoustic performance. In concrete buildings, floor and ceiling finishes are rarely dictated by acoustic requirements; these are delivered by the performance of concrete.

Why should I use Peter Fell Ltd?

Peter Fell Ltd has an established reputation for producing exceptional coloured concrete environments, primarily, but not exclusively, stunning coloured concrete floors. The company has gained the position of market leader through a culture of quality in all aspects of business - we source only the best materials, and our fully trained staff provide full support throughout any project. We strive to be a partner and to do all we can to achieve the desired result for all parties.

Universal	The PeterFell System can be used anywhere concrete can. The choice of surface finishes available means the PeterFell System provides hard flooring solutions for virtually all applications from smooth internal surfaces to non-slip pool surrounds.
Simplicity	It's concrete! The PeterFell System can be executed by any competent concrete contractor, with the sealing able to be done by any competent handyperson. There is no need for specialist applicators or complicated machinery.
Permanent Colour	In the PeterFell System the colour is incorporated into the concrete, and is not simply applied to the surface where it is prone to wearing or fading. This results in the permanent colouring of the concrete, no matter what the application.
Complete Solution	Peter Fell Ltd provides all materials required to transform concrete into an aesthetically pleasing, long life, low-maintenance floor. In addition to providing colour, Peter Fell Ltd has an extensive range of products to protect and maintain the concrete in optimal condition.
Cost effective	Compared with other flooring options (i.e. carpet, wood, tiles, and linoleum), the PeterFell System is one of the most cost effective flooring options on the market - especially when the total lifetime cost is considered. As most new buildings start with concrete, the PeterFell System simply transforms this base element into the final surface, saving time and money
Large Colour Range	Our range of over 60 colours is New Zealand's largest. This is due to our novel use of liquid oxides to colour the concrete. The liquid colours mix better through the concrete, are easier to handle, and actually slightly increase the strength of the concrete, all of which contribute to better coloured concrete.
Proudly Kiwi	We do not simply buy an overseas system and sell it here - the PeterFell System has been developed in New Zealand utilising thorough research and testing. We only source products from reputable international and local suppliers which can withstand the demands of our unique country.
Service	Above all else, at Peter Fell Ltd we pride ourselves on our customer service. All our staff are fully trained, and ensure all our clients are fully informed on all aspects of the PeterFell System, and are able to make educated decisions. We offer full product information, application instruction, and support for all our products.

Who does the PeterFell System?

The PeterFell System can be employed in any project involving concrete. While the PeterFell System requires no specialist applicators or training, it is recommended that all aspects of the System are carried out by appropriately skilled, competent trades people. Peter Fell Ltd provides all necessary products along with full application instructions, however

Peter Fell Ltd does not provide any labour or contractors.

A description of the contractors required to execute the PeterFell System is provided below. As with any project, the successful application is dependent on the competence and workmanship of the contractors employed. At all stages it is imperative that system specifications and application instructions are strictly adhered to. Similarly, as there is the potential for multiple trades people to be employed to work on the same project, it is essential that all parties are aware of the system requirements at all times.

Full consultation on the PeterFell System must be undertaken by all parties prior to the commencement of any work.

Architects/designers

The PeterFell System can be specified for any project involving concrete. All components of the PeterFell System should be considered prior to specification, as some factors will have practical and aesthetic ramifications i.e. concrete finishing (specifically texture) and sealer type will influence concrete colour. All finishing products specified must be checked to be appropriate for the intended application. If clarification is required on any aspect of the specifications, product range or application, please contact Peter Fell Ltd.

Concrete contractors

It is recommended that all concrete is placed by an experienced concrete placer following proper concrete practices. There is little difference between the placing of standard grey concrete and PeterFell coloured concrete, so no specialised training is required. Peter Fell Ltd calculates the colour dosing and customises manufacture for each job. The key difference between a PeterFell coloured concrete floor and standard concrete is that the finishing of the concrete is critical as that is the final surface. Subsequently the required texture and finish must be clearly specified, and all relevant parties must be advised.

Concrete cutter

It is recommended that all concrete is cut by a professional concrete cutter to create the pattern in the concrete. All cuts should be determined in the design stage, both in placement and cut width.

Grinder/Polisher

If you are having a ground or polished texture, it is recommended that a professional contractor is used. While the contractor will not be required until after the concrete is poured, we recommend that the grinder/polisher is consulted prior to any concrete being laid to ensure the specifications will enable the contractor to deliver the desired finish.

The Peter Fell System

The PeterFell System transforms concrete into an aesthetically pleasing, low maintenance living surface. The PeterFell System can be used wherever concrete can, inside or out, residential or commercial, for entire house floors or a simple garden path.

What is the PeterFell System?

The PeterFell System is a way to colour and protect concrete. Basically, a colour is mixed through concrete, the concrete is poured and the surface texture defined. The concrete is then cut to limit cracking and for decorative effect, the cuts filled with grout, and the concrete is sealed to protect the surface from staining and marking. A job flow chart for the PeterFell System is provided on page 10, for full System specifications refer to the PeterFell Technical Specification Guide or contact Peter Fell Ltd. This booklet provides an overview of the PeterFell System, its uses and applications.

Where can I use the PeterFell System?

The PeterFell System can be used anywhere concrete can. Some common applications include:

Interior	The PeterFell System can be used to generate high-gloss floors ideal for formal living or simple, clean, low maintenance floors perfect for kitchens or family areas.
Exterior	Low maintenance, slip resistant coloured concrete is ideal for decks, pool surrounds, courtyards, patios, driveways, and paths.
Residential	The PeterFell System provides low cost flooring option for all residential hard flooring requirements, inside and out.
Commercial	The durability of concrete, enhanced by the PeterFell System is perfect for high use commercial applications or stylish retail outlets.

What does a PeterFell floor look like?

The PeterFell System is typified by the inherent diversity of colour, texture and finish of the concrete. For this reason

Every PeterFell floor is unique.

As the colour is added to the concrete, and subsequently disperses naturally through the concrete,

PeterFell floors display natural variation in colour.

This variation in colour, or 'mottleyness', typifies the PeterFell System. This variation is random, and is dependent on a number of factors including the colour, texture, and finish of the floor. All the factors impacting on the final appearance of a PeterFell floor are discussed in this booklet. If you require any additional information or clarification on any points in this booklet, please contact Peter Fell Ltd as we are happy to answer any questions or queries.

Where can I see a PeterFell floor?

The PeterFell System is widely used throughout New Zealand by a variety of architects, landscapers, contractors and home owners. The best place to view a gallery of PeterFell floors is on our website at:

www.peterfell.co.nz

To view over 40 PeterFell floors displaying a range of colours, textures and finishes, it is recommended that you visit our Auckland showroom at

Peter Fell Ltd, 81-83 Patiki Road, Avondale, Auckland, New Zealand.

Our showroom is located directly off the Northwestern Motorway, only 8 minutes from downtown Auckland, with ample off street parking. In addition to a large display area, our friendly staff can discuss your flooring requirements and offer expert advice on the use of coloured concrete.

Please visit our website or contact Peter Fell Ltd for further information on our showroom hours.

How much does the PeterFell System cost?

As there are a large number of variables involved, it is difficult to give a single price that covers all possible applications of the PeterFell System. However, as rough rule of thumb, the approximate cost over and above a normal concrete floor is

approximately $60 per square metre.

This is an estimate only and covers all products and labour to execute the PeterFell System. This price does not include the cost of the concrete or any associated labour charges for the preparation and laying of the concrete, or any grinding or polishing.. This cost is designed to provide a cost comparison with other hard flooring options (i.e. carpet, tiles, etc). Please refer to the costing section later in the booklet to understand the different variables in the price and to get a more accurate price indication for your project. For full pricing information please contact Peter Fell Ltd.

What service does Peter Fell Ltd provide?

Peter Fell Ltd provides products and instruction enabling the generation of coloured, cut and sealed concrete floors

Peter Fell Ltd does not provide any concrete or labour.

Peter Fell Ltd provides all materials required to transform concrete into an aesthetically pleasing flooring option. The PeterFell System can be incorporated into any concreting project, no matter how big or small, no matter where in the country you are.

So who does the work?

While Peter Fell Ltd do not provide contractors,

The PeterFell System can be applied by any competent concrete contractor.

Peter Fell Ltd provides full system specifications, instruction and support for applicators and contractors. The PeterFell System is reliant on good concrete placing practice, but does not require any specialist applicators or additional processes. The use of an experienced contractor is recommended. In the Auckland region Peter Fell Ltd can provide a list of contractors, and in other regions contact your local ready mix concrete supplier for contractors.

It is important that full consultation on the PeterFell System is undertaken by all parties prior to the commencement of any work.

Peter Fell Ltd is more than willing to provide full job specification and application instruction, as well as assistance and advice to any architect, specifier, building manager, contractor, applicator, or home owner.

How is the concrete coloured?

The PeterFell System uses an integral colour method - the colour is mixed throughout the concrete. This results in the permanent colouring of concrete, it is not a surface coating and subsequently will not chip off or wear away.

The other common method for colouring concrete is the dry shake method, where a colour (generally a powder oxide) is applied to the surface of freshly placed concrete and trowelled into the surface. This method is limited by the range of powder oxides available, and as the colour is only on the surface it is prone to fading and wear. There are other means of colouring concrete, such as concrete stains, concrete paints and tinted sealers. All of these products are surface coatings, so again are prone to fading, chipping and wear.

Can I use the PeterFell System on my existing concrete?

No - The PeterFell System is designed for use in new concrete only as the colour is mixed through the concrete, not applied to the surface.

However, existing concrete floors can still be cut into various patterns and sealed to protect from staining and marking. For more information on options for improving existing concrete surfaces please contact Peter Fell Ltd.

Where can I purchase PeterFell products?

Peter Fell Ltd products are available nationwide. You can order directly from our Auckland warehouse and the goods are freighted directly to your door. PeterFell products are also available from your concrete supplier. Contact Peter Fell Ltd for details of local concrete supplier, or for product pricing and delivery information.

Peter Fell System Job flow chart

Choose the PeterFell System
Is concrete suitable? Is the PeterFell System suitable?

Choose a concrete colour
Consult with Peter Fell Ltd to choose a concrete colour.

Coloured concrete is laid
The texture and finish of the concrete influences the colour, slip resistance, and gloss of the floor.

Concrete is cured
Concrete curing should commence immediately following placement using water only.

Concrete is cut
Cuts are employed to reduce concrete cracking and to generate a pattern on the concrete surface.

Concrete is ground
If a ground floor has been specified, the floor is ground.

Concrete is protected
The concrete is protected with polythene to prevent staining while it cures.

Construction/landscaping is completed
All construction and landscaping is completed prior to sealing or polishing.

Clean up
Protective covers are removed, concrete is dried, and any contaminants removed.

Cuts are grouted
Decorative cuts are filled with PFL Non-Shrink Grout.

Surface Preparation
Surface laitance (efflorescence) is removed and the concrete cleaned for sealing.

Concrete is sealed/polished
The floor is polished or a sealer is applied to protect the concrete surface from staining.

The above chart represents the general job flow of the PeterFell System. The exact procedure will vary for each job depending on the specific project requirements. For full System specifications refer to the 'PeterFell Technical Specifications Guide' or contact Peter Fell Ltd.

Step one. Design

We love concrete - but to ensure a great result it should be only part of the bigger picture.. The use of concrete should consider the practical use of the space, and the impact of the surrounding environment. The extent to which the decorative concrete features in the design should also be considered i.e. is it a feature, or simply however introducing shape and design will help integrate the patio, paths pool surrounds with their surroundings and create a smart cohesive space. Internally, decorative concrete does not have to be used exclusively and can be combined with carpet or other hard flooring options - simply do not colour the parts of the concrete that will be covered.

The PeterFell System can be augmented with a variety of material to change the appearance of the finished surface. The table below lists some common methods for creating decorative features in concrete. The overall design, structural impact, and the effect on the concrete colour and finish, should all be taken into account when considering a decorative feature.

Grinding/ Polishing	This is the process where the surface of the concrete is mechanically removed exposing the aggregate (stones) in the concrete.
In lays	A wide variety of material can be placed into concrete for decorative effect. Commonly use in lays include wood, tiles or ceramics, steel, and brass.
Edging/Borders	A number of elements can be used to border concrete or as a mowing strip. These elements may add textural variation (i.e. concrete pavers) or simply change the appearance of the concrete (i.e. grinding a border pattern).
Channels	A common decorative tool is the use of channels in the concrete which are then filled i.e. with loose river pebbles or decorative grasses (e.g. mondo grass). Channels are also a convenient way to integrate drainage and irrigation into concrete design.
Broadcast Aggregates (Seeding)	A range of materials can be integrated into the surface of wet concrete for decorative effect e.g. shells and glass. The material must be compatible with concrete.
Surface Effects	The placing and finishing of concrete determine the surface properties of the concrete. Manipulation of the surface can also be used for decorative effect. An example is the Sandstone finish achieved through the use of PFL Surface Preparation. This process exposes sand and fine aggregates in the concrete which not only alter the texture of the concrete, but also the appearance.
Plaster/Renders	PeterFell colour can be used in plaster and other similar cementitious mediums, and are simply added to the mix.
Stairs	The PeterFell System can be used to colour concrete stairs. Stairs can be generate *in situ*, or pre-cast off site and installed later.
Walls/Panels	All PeterFell colour oxides can be added to tilt slab panels, or into in situ cast walls. Sealers can also be applied to protect and make them easy to maintain.

Step two. Colour

Choosing a concrete colour from the wide range available is the first step in the PeterFell System. When choosing a colour, a number of aesthetic and practical considerations need to be taken into account. The colour choice must consider the nature of integral colour that results in a natural and unique coloured floor which cannot be reproduced.

While the supplied colour is always constant, the final appearance of the colour in the concrete will always vary. The major factors to consider when selecting a PeterFell colour are listed on the following page. We strongly recommend visiting our showroom, or contacting your local ready mix concrete plant, to view samples of PeterFell coloured concrete before making any colour decisions.

What colours are available?

The PeterFell colour range consists of over 60 colours. All PeterFell colours are assigned a 3 digit code (our colours do not have names), and are divided into 7 colour categories:

100. Neutral	A neutral palette of colours to complement any environment.
200. Sandstone	A range of colours encompassing the natural elements of sandstone.
300. Terracotta	Traditional terracotta colours are represented in this range.
400. Brown	Encompasses varying brown tones, from light fawns to dark rich chocolates.
500. Stone	Strong colours that capture the natural elements of slate and stone.
600. Charcoal	Classic range of charcoals and greys, the ultimate in minimalistic style.
700. Aqua	A bold range of blues and greens tempered by the natural depth of concrete.

The first digit of the colour conveys the category in which the colour is classified, for example colour 189 is a neutral colour, while colour 673 will be a charcoal colour.

Where can I see the PeterFell colour range?

The full PeterFell colour range is on display at our showroom:

Peter Fell Ltd, 81-83 Patiki Road, Avondale, Auckland, New Zealand.

The PeterFell showroom has over 40 coloured concrete floors to view, all with different textures and sealers. Given the unique colour variation in PeterFell floors it is highly recommended that a PeterFell floor is viewed to get an appreciation of colour variation and the impact of texture and finish on the colour. The staff at Peter Fell Ltd are also able to offer information and advice on the colour range and application.

Outside of Auckland, please contact us and we will put you in touch with our regioanl representative who can advise where samples can be viewed in your area..

On-line colour swatches are available on our website (www.peterfell.co.nz). The swatches are designed to give a comparison of colour, but it is essential that actual concrete samples are viewed before making a colour choice.

Concrete Colour Considerations	
Concrete	While the composition of all concrete is very similar, the use of different cements, aggregates, or admixtures by different concrete suppliers will impact on the concrete colour. Also, site conditions, placing, and drying of the concrete will also influence the final concrete colour.
Texture	The concrete texture not only determines the surface finish, but will influence the concrete colour. The colour in textured surfaces typically appears darker and more matt due to the textural refraction of light In smooth surfaces:the colour typically appears lighter, and the floor potentially glossier, due to reflection of light off the surface.
Sealers	ALL concrete floors should be sealed, irrespective of application or function. Sealing protects the concrete from staining and marking, but also enhances the concrete colour. As can be seen on our samples, sealers can change the final appearance of the colour, so it is important the effect of the sealer is taken into account when selecting a concrete colour.
Environment	The situation in which the concrete is being used, and it's surrounding environment will significantly influence the concrete colour - exactly the same as for paint. The amount and type of light reflected on the coloured concrete changes the appearance, as will surrounding decor and furnishings.
Colour Matching	Due to the integral colour method, every PeterFell floor is unique - this means that it is difficult to match existing concrete floors. While exactly the same colour may be used, the above factors mean that there is no guarantee that the two concrete areas will be the same colour. Colour matching is also complicated by the age and condition of the existing concrete.
Photography	It is almost impossible to ascertain the true colour of coloured concrete floors from photographs. Factors such as light, perspective, and image manipulation all alter the appearance of colour in photographs, and they should not be used to choose a concrete colour.
Exposed Aggregate or Ground Concrete	In any concrete where aggregate (stones) are visible, it is the aggregate which will be the predominant aesthetic component. PeterFell colours can be used in exactly the same way as for standard concrete, but the colour will be heavily influenced by the aggregate. Contact PeterFell Ltd for further advice on colouring ground or exposed aggregate floors.

Can I get colour samples?

Yes - Peter Fell Ltd has actual concrete samples, complete with PeterFell Sealers to help with colour selection (see following page for sample details). We offer a service to send up to four colour samples on request to be used for colour matching. It is strongly recommended that prior to a request being made that the full colour boards be viewed at our showroom or at your local ready mixed concrete plant - for a list of plant locations please visit www.peterfell.co.nz or contact us direct.

PeterFell Colour Samples

Colour samples give an indication of colour only.

The final concrete colour will be influenced by the placing of the concrete, the environment, and the situation in which the concrete is applied.

Colour Samples do not show variation in colour.

As samples are cast in moulds they do not display the natural variation in colour typical of the PeterFell System.

Colour samples do not represent the texture or 'finish' of actual concrete.

As samples are cast in moulds they do not represent the texture and 'finish' of placed concrete, which influence the final concrete colour.

The samples are designed to provide a fair representation of PeterFell colours, however as Peter Fell Ltd has no control over the use of our colours we can offer no colour warranty or guarantee.

The ultimate responsibility for colour selection is that of the end user!

Step three. Texture

The surface texture is created when the concrete is laid and it is this texture which defines the overall look and feel of the concrete floor. Primarily, the texture will determine the slip resistance of the floor, but will also determine the level of glare, the achievable gloss finish of the floor, and influence the final appearance of the colour.

Good planning of the concrete pour and placement, and proper curing practice, should be employed to minimise and control cracking.

Where do I get concrete from?

There are a number of ready mix concrete suppliers in New Zealand and Peter Fell Ltd supplies colour to ALL of them. For details and locations of your local concrete supplier please visit our website (www.peterfell.co.nz) or contact Peter Fell Ltd.

Who lays coloured concrete?

As PeterFell colour is added to the concrete at the concrete plant, the concrete is laid exactly as for standard concrete, subsequently,

PeterFell coloured concrete can be laid by any competent concrete contractor.

The concrete contractor placer will determine the texture and finish of the concrete. It is recommended that all concrete is laid in accordance with New Zealand Standards (refer to the 'PeterFell Technical Specifications Guide' for further details), with additional reference to the specific finish required.

Will my concrete crack?

As concrete hardens, excess water evaporates causing the concrete to shrink, and so cracks can occur. This issue is well understood and through the proper use of Construction (expansion) Cuts, proper site preparation, and good concrete placing practice the risk can be significantly reduce. But cracks can still occur even with all precautions taken and so for any floor there is a chance it may happen.

For more information on concrete cracking please visit our website (www.peterfell.co.nz), or the Cement and Concrete Association of New Zealand (www.ccanz.co.nz), or contact Peter Fell Ltd direct.

How do I protect my concrete during construction/landscaping?

Concrete is a porous substrate, meaning it is easily stained and marked (which is also why sealing later is critical). As the coloured concrete will be the final surface, it must be properly protected from staining and marking during construction and landscaping. Also, as the floor needs to be properly cured before sealing (at least 28 days after laying) it is recommended that is protecting during curing.

Concrete must be protected with polythene during any construction or landscaping.

Given the durability of concrete it is not so much the physical damage to the slab, but more liquid contaminants causing problems as they can stain and mark. The polythene prevents these contaminants penetrating into concrete. Polythene also helps the concrete cure, maximising it's durability. However, the polythene must also be removed at least one week, preferably longer, prior to sealing to allow the concrete to dry completely (refer to the 'PeterFell Finishing Process Guide' for further information).

What textures and finishes can I have?

There are a huge range of concrete textures and finishes available, each of which will influence the concrete colour and overall appearance of the floor. The table below outlines the basic types of concrete finishes, for more detailed specifications refer to the 'PeterFell Technical Specifications Guide'. We recommend that all concrete is laid in accordance with New Zealand Standards for Concrete. As the concrete contractor creates the concrete surface;

The desired texture and finish must be clearly communicated to the concrete contractor.

If you are uncertain about any aspect of concrete surfacing we highly recommend that you clarify this with a concrete professional or Peter Fell Ltd prior to the commencement of any work.

Concrete textures and finishes	
Smooth Finish	For a smooth concrete surface, common for most internal floors, the concrete is typically finished with a steel trowel (designated as a U3 finish). For increased durability, primarily for commercial application, the surface is typically finished with a power float. While colour typically appears lighter for smooth finished floors as the light reflects more off the surface, heavy use of a power float can darken the concrete colour..
Non-Slip Finish	Varying degrees of texture can be imparted on the concrete to generate a non-slip surface, applicable for most external applications. - A light non-slip finish is achieved using a wood or mag float (U2 finish). - For a very rough texture, a broom finish is typically employed (U5/U6 finish). - Texture can be imparted on smooth finish floors by adding non-slip additives to the sealer, or through the use of surfacing agents (see 'Sandstone Finish' below). Typically, the more textured the surface, the darker the colour will appear.
Exposed Aggregate	Typically rounded pebbles are used in this product and these are exposed on the surface of the concrete. This results in a unique pebbled look and 'bumpy' texture, very popular on drives and paths. The colour will be strongly influenced by the aggregate.
Ground/ Polished	Grinding is the process where the surface of the concrete is mechanically removed, generating a very flat surface and revealing the aggregate profile. Polishing is simply a higher quality grind involving multiple (up to 12) passes over a floor using successively finer grinds (analogous to using reducing 'grit' of sandpaper). The colour in these finishes is strongly influenced by the aggregate.
Sandstone Finish	Fully cured concrete is treated with a concentrated acidic solution (PFL Surface Preparation) to break down the surface, exposing sand in concrete fines. This generates a unique look and texture similar to that of sandstone. This finish should be executed by an experienced contractor familiar with the process. The colour appearance will be significantly altered, typically becoming darker and more intense.

Step four. Pattern

Cutting is essential in controlling concrete cracking, but in the PeterFell System cutting is also used as an aesthetic tool to add visual interest to concrete flooring.

Do I have to cut my concrete?

Absolutely - all concrete must be cut to reduce the chance of cracking as the concrete dries. These cuts are called Construction Cuts (also called Construction joints, Expansion Cuts, or Expansion joints) and are typically 3 mm wide and one third the depth of the concrete.

Construction Cuts are essential in all concrete floors.

These cuts must be correctly positioned and executed within 24 hours of the concrete being poured, or there is a significant risk of concrete cracking (unless other jointing methods are employed). It is essential that the placement of construction cuts is determined prior to commencement of any concrete work.

In the PeterFell System the Construction Cuts are complemented with additional cuts, called Decorative Cuts. Cutting occurs by the same process as for the Construction cuts, but using a wider saw blade (typically 10 - 12 mm) and they are not so deep, only 10 mm approx.

Decorative Cuts are used to generate a pattern in the concrete.

Decorative cuts serve no structural role and are simply used where desired to generate a unique pattern for aesthetic purposes. But they must incorporate the construction cuts into the pattern.

What size cuts can I have?

One of the benefits of the PeterFell System is the ability to customise the size and shape of the cut pattern. The only limitation on the cut pattern is the placement of the Construction Cuts. All other cuts can be placed wherever required to generate any desired pattern. Contact Peter Fell Ltd for further advice on the use of decorative cuts.

Who does the cutting?

All cutting in the PeterFell System can be conducted by any competent concrete cutter, usually arranged by the concrete contractor. Construction cuts are executed as for any standard concrete work.

What are the cuts filled with?

All decorative cuts should be filled with **PFL Non-Shrink Grout.** PFL Non-Shrink Grout is a specially designed shrinkage-compensated grout with excellent substrate adhesion, is non-corrosive, non-toxic, and impact resistant. It is recommended that grouting is conducted using a **PFL Grout Gun** (it can also be applied by trowel, providing cuts are lined with **PFL Grout Tape**) to stop contamination of the area next to the cut.

What colours does PFL Non-Shrink Grout come in?

PFL Non-Shrink Grout can be coloured using any colour from the PeterFell colour range. Most commonly, the concrete colour is also used as the grout colour. As PFL Non-Shrink Grout has a slightly darker base colour than concrete, it will also appear darker when oxide is used in the grout, offering a subtle contrast. However a lighter or darker colour can also be used for a contrast, or the grout can be left in its natural colour.

Step five. Protection

All concrete surfaces should be sealed. The sealer prolongs the life of the concrete colour, and protects the concrete from staining and marking. The sealer also determines the final look and finish of the floor. A range of sealers are available from Peter Fell Ltd to suit any project.

Do I need to seal my concrete?

Yes - sealing is essential to enhance and protect coloured concrete. Sealing will determine the final appearance, both colour and texture, of the concrete. Sealing stops 'dusting' (efflorescence) forming on the concrete surface which masks the concrete colour (often mistaken for colour fading), maintaining the true colour. More importantly, sealing protects the concrete from staining and marking, an essential aspect of any flooring system.

What is the difference between sealing and polishing?

If you are polishing your interior floor you will not use a sealer but rather use PeterFell C2 polishing products. These products include a lithium silicate densifier that penetrates into the concrete to harden the surface. A special microfilm is then applied to create a protective coating that is melted into the concrete for added durability and stain resistance. These products are applied when the floor is being honed and polished - for more information on the C2 system please contact Peter Fell Ltd.

How do I seal my concrete?

All concrete surfaces can be sealed by following the PeterFell Sealing Concrete - the final steps in the PeterFell System. This process is outlined below and includes the grouting of cuts, surface preparation, and sealing of the concrete.

Sealing PeterFell Concrete
Clean up Protective covers are removed, concrete is dried, and any contaminants removed.
Grouting Decorative cuts are filled with a coloured grout
Surface Preparation Surface laitance (efflorescence) is removed to prepare the concrete for sealing
Sealing Sealer is applied to protect the concrete surface from staining.

For more information refer to the 'The PeterFell System Sealing Guide', or contact Peter Fell Ltd.

Can I seal the concrete myself?

Yes - concrete can be prepared and sealed by any competent handyperson. All required products and full application instructions are available from Peter Fell Ltd.

Do I have to 'acid wash' my concrete before sealing?

Yes - the concrete must be treated with either **PFL Surface Preparation** or **PFL Surface Prep Lite** prior to application of the sealer. These remove surface laitance (efflorescence) present on the surface of new concrete, which no other method will do effectively. If this laitance is not correctly removed the sealer will not be able to adhere correctly to the concrete surface, resulting in the delamination of the sealer.

Will ‘acid washing’ change the appearance of my concrete?

PFL Surface Preparation removes surface contamination (laitance) and subsequently acts to reveal the ‘true’ colour and finish of the floor. This standard application (mild etch) is essential in the preparation of the floor for sealing, and will not alter the inherent floor characteristic. However, PFL Surface Preparation can be used to alter both the texture and finish of the floor by adjusting solution strength and treatment time. It is essential that PFL Surface Preparation is correctly diluted and that a test area is completed to ensure dilution is appropriate for the intended application.

What do I seal my concrete with?

Peter Fell Ltd has range of sealers and associated products (outlined over page) designed specifically for use on concrete floors. PeterFell sealers are manufactured to the highest standards, and have a proven record of durability and longevity. Each PeterFell sealer has different properties and will be suited for specific applications.

The sealer selected must be suitable for the intended application.

Refer to the chart on the following page to determine which PeterFell sealer is suitable for your application, or for assistance in selecting the correct sealer please contact Peter Fell Ltd.

PeterFell Sealer Range	
PFL Epoxy Sealer A durable, easy to use epoxy sealer that provides a hard protective finish to interior concrete floors.	Recommended for interior residential floors.
PFL Acrylic Sealer A durable sealer designed for application on internal and external concrete floors.	Can be used on patios, paths and internal residential floors.
PFL Glaze Sealer A highly durable, multi-purpose sealer, ideal for driveways and high-use areas.	Recommended for driveways, but can be used on all external surfaces.
PFL Satin Sealer A highly durable ‘wet-look’ sealer with a matt finish. This sealer is ideal for external concrete surfaces including paths and drive-ways.	Recommended for driveways, but can be used on all external surfaces.
PFL Natural Sealer A penetrating sealer that protects external concrete surfaces while retaining the natural look and feel of concrete.	Recommended for masonry and platers walls.
In addition to these sealers, Peter Fell Ltd has the following sealer related products:	
PFL CoverSeal A water based, anti-scuff, stain repellent floor treatment applied to all interior sealed PeterFell coloured concrete floors	Recommended to apply over PFL Epoxy Sealer.
PFL Surface Conditioner Used to prepare and condition concrete sealed with PFL Glaze and PFL Satin sealers for re-sealing.	Recommended to apply when re-sealing over PFL Glaze or Satin sealers
PFL Anti-Slip Can be added to PFL Glaze Sealer to provide improved texture and grip to smoothly finished concrete surfaces.	Can be added to PFL Glaze or Satin sealers.

Will the sealer make my floor slippery?

A common misconception is that if you seal the floor it will become slippery. The grip and texture of the finished surface is generated simply by the concrete itself. While the sealer coats the surface, the texture of the concrete is retained through PeterFell Sealers. All external concrete surfaces i.e. decks, driveways, pool surrounds, should be finished with a texture appropriate for the situation i.e. non-slip. However, if the concrete is not of a suitable texture, the concrete should be sealed with PFL Glaze Sealer containing PFL Anti-Slip. PFL Anti-Slip is simply added to the sealer, and improves slip-resistance on all flat concrete surfaces.

What gloss levels do the sealer come in?

As with slip resistance, the final gloss level of the sealer is also dependent on the finish and texture of the concrete. The flatter the concrete the higher the gloss. Subsequently, if a high gloss is required i.e. for internal living areas, the concrete should be finished with as little texture as possible. Conversely, external surfaces are finished with more texture in order to introduce grip and slip resistance, and subsequently will be more matt finish. On internal floors, the gloss level is maintained using PFL CoverSeal - a water based, high gloss, stain repellent floor polish that is applied over PeterFell sealers. It is simple to apply, and can be built to a high gloss.

What is PFL CoverSeal?

PFL CoverSeal is a high gloss, slip resistant floor treatment for use over PeterFell Sealers on all internal PeterFell floors, significantly reducing maintenance and prolonging sealer life. PFL CoverSeal contains anti-scuff and stain repellent components to reduce surface marking, maintain gloss levels, and softens the look and feel of the concrete surface. It protects the sealer from staining and marking, as well as increasing slip resistance on internal sealed floors. For more information on PFL CoverSeal, including application instruction and pricing, please contact Peter Fell Ltd.

How long does the sealer last?

No concrete sealer will last forever. The floor life of the sealer is very much dependent on preparation and application of the sealer. For typical application PeterFell sealers have a floor life of approximately 3 - 5 years. This is a guide only and is not guaranteed as in-service life of the sealer is very much dependent on preparation and application of the sealer, and use, which are beyond the control of Peter Fell Ltd. The floor life of internal sealed floors is significantly prolonged through use of PFL CoverSeal. All PeterFell sealers can easily be re-applied to provide ongoing protection of the concrete surface.

Cleaning & Maintenance

The PeterFell System requires minimal on-going maintenance. However, there are several processes that should be followed to maintain your concrete floor in optimal condition.

How do I keep my internal concrete floor clean?

Once the floor is sealed and treated with **PFL CoverSeal** very little maintenance is required. PFL CoverSeal contains anti-scuff and stain repellent components to reduce surface marking. It also acts to maintain gloss levels on internal surfaces. As PFL CoverSeal acts as a sacrificial coating to protect the floor over the sealer, PFL CoverSeal must be re-applied to internal floors twice a year, subject to wear rate.

All internal floors can be cleaned with **PFL Concrete Cleaner** using a cloth or mop. For full product information and application instructions refer to the PeterFell Finishing Process Guide or contact Peter Fell Ltd.

Do not use amonia or amine containing cleaners or detergents.

These detergents are very harsh and will cause irreparable damage to PFL CoverSeal (and other PFL Sealers), necessitating sealer re-application to restore gloss and finish to the floor.

How do I keep my external concrete floor clean?

Once the concrete is sealed very little maintenance is required. The area can be cleaned by hosing or water blasting. Any spills or contaminants should be cleaned with **PFL Neutraliser & Cleaner** using a mop or yard broom. For full product information and application instructions refer to the PeterFell Finishing Process Guide or contact Peter Fell Ltd.

How do I clean moss and algae off my concrete?

Moss, lichen and algae can be removed from concrete surfaces using **PFL Moss Kill**. PFL Moss Kill is designed to kill moss, lichen, and algae, making it a more effective method of removing these contaminants than water blasting or cleaning alone. In targeting these organisms directly, it will also delay their return, reducing ongoing maintenance.

While PFL Moss Kill is designed to eliminate living moss, lichen and algae, it will NOT remove dead organisms. These are generally distinguishable as black surface contamination (as opposed to green contamination characteristic of living organism), and can only be removed by water blasting or cleaning as described above. For full product information and application instructions contact Peter Fell Ltd.

How do I clean re-seal my concrete?

If the concrete surface looks 'tired' and worn, it can easily be rejuvenated by re-sealing - simply clean and apply the appropriate sealer over the existing coating. The surface must first be thoroughly cleaned (using PFL Neutraliser & Cleaner), and all loose debris, contaminants, stains and marks removed. There is no need to treat with PFL Surface Preparation or PFL Surface Prep Lite prior to re-sealing. For full product information and application instructions refer to the PeterFell Finishing Process Guide or contact Peter Fell Ltd.

Pricing

As the PeterFell System can be used in a wide range of applications it is impossible to offer a single price that covers all possible projects. While the PeterFell System is dependent on the use of concrete, as we do not supply or place any concrete we are unable to give any pricing on this process. It is recommended that your local concrete supplier or concrete contractor is contacted for price details specific to your project. With the information and pricing on concrete and associated labour costs, Peter Fell Ltd will be able to give an accurate costing on all other materials.

For budgeting purposes we estimate that for a standard project, the PeterFell System costs approximately $60 per m^2 above the cost of the concrete. This cost will vary depending on the type, size and location of the project. Below is an approximate breakdown of this price estimate to give you an idea of the pricing structure. Again, for accurate pricing for your project, or further information on product requirements and pricing, please contact Peter Fell Ltd.

Step one. Design	n/a
Step two. Colour - PFL Special Colours are specifically dosed for each job dependent on colour and concrete type. Price is estimated on standard dose in standard concrete.	approximately $12 - 16 m^2$
Step three. Texture - Concrete requirements i.e. type and strength of concrete, site preparation, and laying, are very project specific. As Peter Fell Ltd does not provide any concrete or labour it is recommended that a concrete supplier or concrete contractor is contacted for price information. Similarly, if the concrete is ground and/or polished pricing should be obtained from a contractor.	n/a
Step four. Pattern - Cutting is simply charged per meter, and subsequent cost is directly related to total amount of cuts. Contact concrete cutter for current rates (estimate given).	approximately $5 - 8 m^2$
Step five. Protection - The grouting of cuts, clean up, surface preparation, and sealing of the concrete. The price given is a cost estimate for this process including labour and all materials. This cost will be greatly reduced if the work is conducted DIY.	approximately $20 - 40 m^2$

The above are price estimates only.

For full pricing information contact Peter Fell Ltd.

My PeterFell

Step one. Design:

Step two. Colour:

Step three. Texture:

Step four. Pattern:

Step five. Protection:

notes:

PeterFell
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