Specifications & Application Manual for Decorative Flocrete Resurfacing Compound

Permacolour Flocrete is a decorative thin set (3-5mm) resurfacing material, laboratory tested and field proven, for renovating old or new concrete surfaces. Being a single pack polymer modified cementitious mix designed to give excellent protective durability, while decorating existing concrete in a vast range of styles, textures, colours and patterns.

Flocretes' basic composition of cement, silica sand and mineral aggregates combined with sophisticated polymers and chemical additives, provides superior compressive, tensile and flexural strengths giving extra life and decorative appeal to the underlying concrete substrate to which it chemically bonds itself.

Flocrete is a 'cohesive' polymer modified cement, chemically structured to grow into the concrete matrix, crystallising and 'hooking' into the pores of the substrate. It is not singularly adhesive or merely 'glued' by a polymer priming coat to the concrete surface, like other similar products. The resultant bond between Flocrete and the substrate is stronger than the cohesive bond within the concrete matrix itself.

The Flocrete system is comprised of an on-site installation, horizontal or vertical, on any cement based surface, including both commercial and domestic situations, interior and exterior, including driveways, walkways, pool surrounds/ interiors and many more.

Flocrete can also be used for creating artificial decorative rock, as used in pool surrounds etc. With the safety feature of a non-skid finish, and a cooler than concrete temperature underfoot, Flocrete is the foremost consideration as a resurfacing material.

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Plus Factors:

Readily available, versatile, durable and best of all, price competitive (see price comparisons);

- Ease of use (single pack – no measuring out activators or polymer modifiers, or adding coloured oxides just add water);
- All polymers as well as coloured oxides are added in our batching process, eliminating chances of mistakes when mixing on site.
- Mistake free, just add clean water.
- Commercial or domestic application;
- Horizontal or vertical application;
- Low maintenance;
- Higher MPA rating than concrete;
- Ideal designer's product because the combinations of colours, textures and patterns is unlimited.

Installation:

Surface Preparation:

Surface preparation is the most important part of a successful Flocrete application, as it is with all surface coatings. Flocrete is a cohesive product - i.e. it grows into the concrete through crystallisation and becomes part of the concrete and is therefore dependent of the concrete pores being open and clean. It is not merely an adhesive product, which is stuck or glued to the concrete surface by polymer modifier or activators, as is the case with other similar products available.

To open and clean the concrete pores, the concrete must be thoroughly acid etched and water blasted, but before this procedure, determination of the concrete surface condition, contamination etc. must be addressed.

Grease & Oil:

Are best removed using detergents or degreasers or a mix of liquid chlorine and water.

Mould:

If it is inground and not easily removed by water blasting, liquid chlorine or a similar bleaching agent spread over the area will quickly remove it.

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Painted Areas:

Many existing concrete areas have been decorated in the past by paint. Paint will have filled the concrete pores so it must be removed by either paint strippers, a terrazzo machine, sandblasting, bead blasting or a concrete scarifying machine. The last two options are the ultimate surface preparation.
Alternatively: By using a roller to roll a coating of Perma Colour Bonda mixed 50/50 with water over the painted surface will give the Flo Crete a good bond to areas where paint cannot be removed.

Silicones:

Are usually invisible to the eye, but are recognisable and should be removed (silicones are often prevalent in car detailing areas) Chemicals are available to remove these silicones, after which a good acid wash of 10 parts water and 1 part hydrochloric acid is necessary.

Surface Membranes and Hardeners:

Surface membranes and hardeners are usually in the form of curing membranes, acrylic and wax emulsions, chlorinated rubber etc. To test if they are present, acid etch the surface to see if the concrete 'reacts' with the acid. If it doesn't then bead-blasting or scarifying is the best method to expose the concrete pores.

Cracks:

Should be cut out with a grinder, cleaned and filled with Perma Colour Flocrete. Ensure cracks are dust and contaminant free before filling.

After cracks are repaired it is important that while the Flocrete used in the repair is cut back through the original crack with a thin blade as to stop any moisture being restricted from escaping as this can cause delamination of the Flocrete.

Please Note:

After removing surface contaminants mentioned above, thoroughly remove any residues by high pressure water blasting before commencing the acid etching process.

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Acid Etching:

A mixture ratio of 1 part hydrochloric acid and 10 parts water is sufficient for most concrete, but steel towelled or smooth concrete may require a stronger mix or repeated applications. Concrete properly etched will have a sandpaper feel when rubbed. (This sand paper feel must be reached before Flo Crete application)

The acid solution should be applied by plastic watering can or similar, to a small section at a time, spreading it around and agitating it with a stiff broom. Never let the acid solution dry on the surface.

After acid etching remove residues and degregated concrete surface, by high-pressure water blasting, then re rinse again with clean water.

The concrete pores are now open and clean and ready for the Flocrete application.

Application Procedures:

Flocrete can be applied to existing concrete in many various colours, textures, patternsand styles. Before application, all surrounding areas, walls etc. should be masked, to prevent splattering and spillage's. If a different colour other than the concrete colour is desired for grout lines etc. a base coat should be applied. Before base coating, any chips, holes, water pooling areas etc. can be repaired using Flo Crete.

Base Coat:

Place 6 - 8 litres of clean water in a bucket slowly add 20kg of dry Flocrete mix whilst stirring with a mixing paddle on a low speed drill for 5 mins, allow to stand for 1 minute then quickly remix before using. (This allows excess air in the mix to escape) The consistency of the mix and the amount of water added will be determined by the method of base coat application, whether it be by spraying, towelling, squeegee etc. Flocrete should always be applied to a damp concrete surface (no puddles), this being best achieved by a garden pump sprayer.

If spraying the base coat, a smoother texture will be more obtainable with a slightly wetter mix, smaller hopper gun orifice and higher air pressure. (Approx. 25 PSI).

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BE AWARE WHEN SPRAYING FLOCRETE:

(Too higher pressure will result in smaller drier over spray particles similar to dry sand)this will hamper the Flocrete bonding to the concrete.
If this happens, decrease the air pressure and add more clean water to make the mix wetter.) Once the base coat is dry (colour lightens), imperfections can be rubbed back by using a carborundum block or similar. Air blow, or sweep the area clean.

Top Coat:

The desired pattern can now be put in place, whether it is being stencilled or taped. If using tape use a cross-woven filament tape as paper tape will let moisture under and then be hard to remove when the Flocrete is dry.
All areas of different colouring should be masked off accordingly. As per the base coat, Flocrete dry mix should be added to 6 - 8 litres of clean water, depending on the desired texture. If a base coat has been applied, there is no need to dampen the surface before spraying. Top coats can be either towelled or left plain after spraying.

Plain Spray Texture:

Spray in circular motion at approx. 15 - 20 PSI at 90 degrees to the surface at a distance of approximately 60cm, achieving 100% coverage with a build thickness of about 1.5mm.

Trowelled Spray Finishes:

The “Troweller” (wearing golf spikes or similar spiked shoes) should follow the "Sprayer" and should begin trowelling before Flocrete turns dull looking. The "Troweller" should always carry a clean wet sponge to keep trowel clean. This process can be done with a 100% spray coverage trowelling the droplets flat, or a 70% coverage scenario, trowelling earlier and allowing some of the base colour to show through for a decorative effect.

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Trowelled Top Coat:

This process should only be attempted on taped patterns - not stencilled (unless adhesive backed stencil is used). Trowel mixed Flocrete material (4 litres water ie. stiff mix) onto surface thinly, trowelling in different directions to impart desired texture. Once the surface is dry enough to walk on, rub back major high trowel marks with a carborundum block. Airblow or sweep clean. Different Flocrete colours, mixed with excess water, can then be sponged onto the trowelled surface to impart colour shading.

Removing Stencil & Tapes:

Timing is important in order to achieve 'clean' grout lines. The Flocrete must be dry (dull colour) this can vary from 1 - 4 hours depending on drying conditions, temperature etc. It is best to periodically test, removing the stencil or tape in an inconspicuous area in order to determine the best timing for removal.
Once the tape or stencil is coming out clean and not breaking grout line edges the whole area can be removed.

Please Note:

The above are only a few of the more common application methods. There are many other application methods, textures, finishes that can be achieved by imagination and experience. All are achievable and practical as long as the basic rules are applied. Before preparing to seal the area, expansion & contraction must be honoured, so Flocrete material in construction joints, sawcuts etc. must be removed, recut or reopened.

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Sealing of Flocrete:

The Flocrete surface once dry can be swept or airblown clean then sealed with Permaseal Sealer. It is recommended that a coating of Permaseal Same Day sealer is first applied followed by 2 coats of Permaseal Flocrete sealer. Sealer can be applied by broom, roller or airless sprayer (at a rate of 1lt/3m2). Usually three coats are sufficient, but depending on the porosity of the Flocrete extra coats can be applied as soon as the previous coat is dry and can be applied without dilution to give you the finish you desire. Do not be alarmed if the Flocrete softens as the sealer is applied, as it will reharden almost immediately. (Depending on atmospheric conditions).

- Sealing provides a waterproofing membrane
- Sealing makes the surface easy to clean & more washable
- Sealing eliminates surface porosity
- Sealing protects against damaging ultra violet rays
- Sealers chemical structure makes the surface resistant to salts, acid, alkali and abrasion.

BE AWARE WHEN SEALING FLOCRETE:

It is very important that the Flocrete is completely dry before applying Sealer. Acrylic sealers can be affected by moisture; if the Flocrete Substrate is still wet the Sealer can dry and trap the moisture underneath the Sealer. In some cases this can cause a whitening affect tending to make the job look milky or patchy. If this whitening does occur then the Sealer needs to be dissolved on the surface using a Solvent (Xylene available at Perma Colour Stores) The Solvent should be applied so that the Sealer breaks down and opens up the pores in the Sealer releasing any moisture that has been trapped underneath.

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Test Results – CET 4580 Queensland University of Technology

Shear Bond Test - apparatus Tinius Olsen grade "A" universal testing machine.

- sample condition dry- > 3.25 MPA bond stress average
- sample condition wet- > 3.27MPA bond stress average

Skid resistance - test method AS/NZS 3661.1

- sample sealed Flocrete - > average skid resistance value of 67.

Surface Hardness - between 7&8 Mohs scale (7= quartz)

Abrasion resistance - BDRI test method B6 Appendix C

- average abraded volume = 1.75cm3 comparative results:
    - 20MPA concrete pavers: average abraded volume = 9.6
    - 60MPA concrete pavers: average abraded volume = 1.2

Compression Strength - after 28 days 60mpa

For any more technical advise please call Perma Colour Head Office

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