



Tuff Floor Coatings are
Durable, Strong, Reliable,
Designed for You...



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Vector Arena Auckland

TUFF FLOOR

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Coating of floors has been done for many years both for aesthetics, hygiene and protection against chemical attack. Often the coating is no more than a product designed to deeply penetrate the existing concrete surface to fill in the pores and bind up the surface to stop dust and resist water. Coatings for floors can range from simple single pack products to 2 pack Epoxies and Polyurethanes and full 2 pack multi-layers in hard, durable and chemical resistant finishes.

New developments in chemistry mean that all these types of coatings are available as water based, solvent free and much more user friendly than in the past. All the products offered by Cotec fit these criteria and are based on some of the most recent developments available.

Clear coatings can be full or reduced gloss and the coloured finishes are fully tint able to allow expression of decorative flair.

The advantages of using the Tuff Floor range of products are many;

- Decorative (Standard colours plus the ability to match your specific colour)
- Seamless finish
- Long lasting
- Chemical resistance
- Economical
- Specifically designed products for concrete and timber
- A range of products that can be selected to suit your particular requirements
- Commercial or easy DIY application
- Well proven chemistry
- Suitable for the most demanding commercial processing or workshop environment
- Suitable for domestic applications



Products in the Tuff Floor range

The Tuff Floor range of products has been developed to fill almost every application and can be used as a single application treatment up to a sophisticated multi-layer system for the most demanding conditions.

Lime Stop - Single pack sealer for use under cement based levelling compounds.

Epoxy Concrete Filler - A 2 pack modified epoxy filler for cracks and small holes.

SLC - A cement based filling and levelling compound used to even out and fill badly eroded concrete prior to coating.

CD (concrete densifier) - VOC free treatment to fill, densify and strengthen the surface concrete. Used as an agent to assist in polishing, dust reduction and reduce moisture penetration.

Tuff Floor Paving Paint - Is a water based single pack alternative to the old paving enamels but giving a far harder surface.





How do I paint my floor?

Preparation

In all instances the success of flooring products on concrete ultimately hinges upon the preparation. Concrete comes in many forms and also the surface can be presented in any number of conditions, all of which must be treated and brought up to the correct condition prior to painting.

Methods of Preparation

There are any number of treatments to do this and they are in no particular order:

Acid Washing - An acid, usually Hydrochloric or more recently, a more easily handled powdered acid is made up to a concentration of about 10% by volume and then brushed onto the concrete surface using a broom and allowed to react. Once the acid has ceased to "fizz" the floor is hosed off and allowed to dry.

Diamond grinding has become an excellent way of preparation with small hand held equipment up to large commercial units. This method not only opens up the surface but also assists in getting rid of high or uneven spots. Once the grind is completed the floor needs to be vacuumed thoroughly before painting.

Continued on back page.

Tuff Floor WB Sealer - A 2 pack epoxy sealer that is a "must use" when coating concrete. Deeply penetrating and vapour permeable, this sealer answers many of the adhesion problems and copes with damp concrete.

Tuff Floor WB Levelling - Has been formulated to provide a seamless epoxy based self levelling flooring coating. Highly durable and impact resistant. It is able to be used as a finish as is or over coated with Tuff Floor WB Epoxy. Applied at up to 10mm thick and can be easily modified to become trowelable and also made into a coving compound.

Tuff Floor WB Epoxy - A 2 pack epoxy coating where the hardest most chemical resistant finish is required. Able to be tinted to most colours.

Flake and Nonslip - Cotec has a range of additives to provide coloured flake and varying degrees of nonslip finishes tailored to specific requirements.

Sanding Sealer - Formulated to give the best possible adhesion to timber, particularly hardwoods and native species. Incorporates fully transparent fillers so there is no loss of timber colour.

Tuff Floor PUD Clear - Latest water based Polyurethane technology providing single and 2 pack clear gloss or satin finishes for the home, commercial and sports wooden flooring.

Stains and Colouring - Woodland water based timber stains have been formulated for use under Tuff Floor PUD Clear Coatings.

What products to use

This will depend entirely on the circumstance you have and the expectation of how long the coating needs to last.

Coating Technologies Ltd can offer advice on the best approach, preparation and paint systems. In general, flooring can be broken down into the following situations.

Timber

Domestic House - Low traffic areas may only need sealing and single pack PUD clear coating. However dining, kitchen and lounge areas with heavy foot traffic need sealing and at least two coats of PUD clear plus Diamond Hardener.

Commercial or Shop - Must be sealed with Sanding Sealer and multiple coats of PUD clear plus Diamond Hardener.

Sports Arenas - Must be sealed with Sanding Sealer and at least 3 coats of PUD clear plus Diamond Hardener.

Concrete

Domestic House - Raw or polished concrete must have at least 3 coats of PUD clear plus Diamond hardener. Polished floors must be checked to ensure the surface is able to absorb water. Some finishing processes leave the surface water resistant and this should be discussed with the flooring contractor.

Domestic Garage - Can be coated using Paving paint but if cars and boats are to be regularly in and out then Tuff Floor WB Sealer and one, but preferably two coats of Tuff Floor WB Epoxy is necessary.

Commercial Showroom, Light Industrial Factory, Warehouse - Sealed with Tuff Floor WB Sealer and at least 2 coats of Tuff Floor WB Epoxy.

Food Processing, Abattoirs, Wineries These floors need not only high durability but impact and chemical resistance and can be finished using the Tuff Floor WB Sealer and Tuff Floor WB Levelling but for additional wear and chemical resistance 2 coats of Tuff Floor WB Epoxy is recommended as well.

Dairy Milking Sheds - Have areas that require variants of all the above and Coating Technologies can advise on what system is best suited.

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Technically Advanced Paint Systems

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A more recent development is the UHP (ultra high pressure, 45,000psi) water blasting units giving cleaning action and surface profiling in one operation with no dust and little mess.

The use of hand held sanding discs and floor sanders is a possibility on small floors in reasonable condition but they will not give the same level of preparation.

New Concrete Floors

These should be the best surface but in many instances when laid and cured the surface is either very tightly bound (from machine floating) or has a surface that is predominantly fines and cement that can be quite weak.

These surfaces need to be "opened up" to allow the coatings to penetrate as deeply as possible in order to get good adhesion. One of the 3 methods detailed above should be used to achieve this. It is possible, with the development of new water based sealers, to paint new untreated concrete with reasonable success but there is no guarantee that good adhesion will be achieved.

Old, Aged or Eroded Concrete

These can often be the most difficult to coat. Floors like this present in many forms, often cracked, stained with oil or severely eroded, particularly in factories, food processing plants and dairy milking sheds, where strongly alkaline or acidic chemicals or juices are present. Often the floor is sound but highly polished by foot traffic or vehicles.

In all cases it is crucial that residual chemicals and oils are removed prior to attempting to coat. Generally chemicals and water soluble by-products can be leached out of the surface by water blasting. Oils however require much more care and need to be extracted from the surface with the use of strong detergents, this often taking multiple applications over a period of time.

Again the floor needs then to be ground (both to smooth out the eroded surface and also to even out cracked floors) or acid washed or UHP water blasted in the case of polished concrete.

Filling Cracks and Levelling

Fine hairline cracks in the surface can often be painted over however more substantial cracking must be remediated by either, chasing out with a concrete blade and filling with an epoxy filler or proprietary modified cement filler.

Very badly eroded concrete where the aggregate is exposed can be levelled with a cement based self levelling compound and then either coated with the paint system or with an epoxy levelling compound that can be used as the final hard, chemical resistant surface.

Do not expect the coating systems to overcome structural cracking and on-going movement in the floor.

Preparing Wooden Floors

New Timber that is clean and free from any grease or oil only needs a final sand using 80 grit followed by a fine finish with 150-240 grit sand paper. Punch down any nails before sanding and fill holes if required. Vacuum up any dust.

Old timber floors need a little more attention. Tongue and groove floors really need the grooves cleaned out to remove any built up dirt, as if left, can cause the coating to lift in these areas. Any oil that has soaked into spots needs to be removed with multiple applications of solvent on a clean rag, although it may not be possible to get it all out of the surface. Punch down and fill any nails then hard sand with a coarse grade (80 -100) to remove any old coating back to the raw timber. Re-do any caulking in floors that have this and then finish sanding with 150-240 grit. Sand between coats with 320 grit.

Soft wood timbers (Pine and composite board) can be clear coated without sealing. Hard wood and resinous timbers must be sealed with Sanding Sealer in order to get the best adhesion of the top coat.

Staining and Colouring

Staining, colouring and blanding should all be done following the final preparatory sand and before the Sanding Sealer is applied. Woodland interior water based stains are ideal for this work.



Mixing paint

The single pack products only need a good stir prior to application.

Tuff Floor PUD (plus Diamond Hardener) can "body up" a little on mixing and should then be brought back to the required application viscosity with small additions of water (5-10%).

Tuff Floor WB Epoxies need to have the hardener added and then stirred thoroughly for 5 minutes then allowed to sit (induction) for 5 minutes. They should then be stirred again and the final application viscosity adjusted with water. Small amounts of water do adjust the viscosity quickly so small additions at a time are best.

Tuff Floor WB Levelling will need the Pack A thoroughly mixed with a power mixer to ensure all the filler is fully brought up from the bottom and incorporated. Then add the Pack B and mix for 5 minutes and leave to induct for a further 5 minutes. At this stage it can be applied as a pourable self leveller or thickened up to a trowelable consistency with additions of Aerosil. If solid covering is required then cement is added to the leveller until a suitable consistency is achieved.

Refer to the Technical Data sheets for full mixing instructions.

Application

All the Tuff Floor range (with the exception of the WB Levelling) can be easily applied by brush, roller or spray.

Do not over build the sealers as they are designed to penetrate and not build up a heavy film on the surface.

However the opposite is required for the top coats as the wear performance is directly related to film build so ensure a heavy wet film is applied.

In all cases do not try and apply coatings to wet concrete. If in doubt we can advise on how to test the moisture content. Damp concrete can be sealed with Tuff Floor WB Sealer and allowed to continue to dry out as the sealer cures. Do not apply coatings when substrate or air temperatures are below 10 Deg C or late in the day when overnight temperatures are likely to fall. Do not apply when rain is expected within 8 hours or if heavy dew is likely.

All the Tuff Floor products will cure (in reasonable conditions) sufficiently overnight to have the following coat applied the next day.



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