



Leading Concrete Protection Systems ...

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DENSI CRETE INSTALLATION REQUIREMENTS

INTRODUCTION

Densi Crete's technology was first formulated in the USA for the likes of dam sites and water towers. Thus, Densi Crete can withstand hydrostatic pressure of approximately 35mtr. This is quite substantial! As these products were formulated nearly 3 decades ago, they have stood the 'test of time' in the concrete industry and have little or no competition in what they can achieve. DuraCore's Densi Crete has been manufactured in Australia since 2010 and is 100% Australian owned.

Some of you may have heard of or even used such products belonging to Xypex or TAM, to name a couple. These products are either Sodium, Lithium, or Potassium based silicates. For all intents and purposes, they generally treat the top 2-5mm of the concrete, predominantly as a surface hardener. Densi Crete & Moisture Proof, are a Colloidal Silica, which has a different capillary and chemical action and reaction in the matrix of the concrete. Thus they can penetrate up to 100mm into the concrete.

On green concrete, Densi Crete not only performs as a moisture barrier, but has the ability to hydrate all of the cement. Thus assisting in the elimination of surface cracking, slab curl etc. Densi Crete & Moisture Proof will also purge out excess salts, greatly diminishing efflorescence. Densi Crete will surface harden the concrete up to 4-6 times & will also eliminate dusting & spalling. Dusting in particular has now become a major Health & Safety issue due to concrete containing large amounts of silica (sand). Silica can cause Silicosis, lung cancer and chronic obstructive pulmonary disease.

Densi Crete, once in the concrete, is there for the life of the concrete and can be warranted for up to 15 years. It will not hinder or have any detrimental effect on surface coatings, glues, render etc. It can have subsequent coatings, such as paint, polyurethanes, epoxies, render etc installed after 24 hours of the application.

If quality cured concrete is a specified prerequisite, coupled with the above, then Densi Crete is the industry choice for sure. To ensure you achieve the best results, we encourage you take the time to 'study up' on the DuraCore website and familiarise yourself with the range of products at www.duracore.com.au particularly Densi Crete, Moisture Proof, Repeller and Lustre Crete. By having a solid 'grasp' of these products this will obviously enable you to project yourself accordingly when dealing with enquiries.



DENSI CRETE APPLICATION PROCEDURE:

1. Test the Surface:

Remember to do the water test. EG –Dip your finger into a glass of water and from a height of approx 100mm allow 2 drops of water to land together on the concrete. Wait for approx 60-90secs to see if the water penetrates in that time (no exceptions). If not, there is a probability of some type of curing compound already on the concrete, or the concrete has been placed in such a dense manner that it requires opening up before applying Densi Crete, perhaps diamond grinding is necessary. In hot, dry conditions it is important to wet or dampen the surface area as you go, enabling the water to act as a carrier into the substrate. In windy conditions, if the work has to be carried out, make sure the spray is not carried to areas that could be affected eg; windows etc. For work carried out around glass or raw aluminium it is best to mask up or use a board as a barrier. Densi Crete will etch glass and raw aluminium.

2. Prepare the Surface:

Ensure the surface is clean and free from dust, paint, plaster etc. A light sand or grind of the floor may be necessary. A vacuum and damp mop will remove any fine traces of concrete dust and will aid in penetration of the Densi Crete. Densi Crete can be applied to damp floors as long as there is no pooled water on the surface which would dilute the product.

3. Installation:

When spraying Densi Crete on 'hardened' concrete, an airless sprayer is required, spraying at 1450psi using a specialised tip (19 thou) to create the best and most effective results. Application tip is held approx 100-150mm off the surface and sprayed at 50% overlap at an approx 4.5m² per ltr. If spraying vertical walls always start from the lowest point working upwards. All product should have penetrated within 1 hour of applying. Using a soft bristled broom, broom any pooled product into dryer areas. Never leave site until all product has penetrated. If there is product remaining past 1 hour then it will be necessary to remove with a squeegee or mop. If product is allowed to dry on the surface it may require diamond grinding to remove. Freshly placed concrete, providing you can walk on the surface without marking it, can have Densi Crete applied by low pressure spray for the ultimate cure & seal. However, once the concrete has hardened (more than 12 hrs since placement), Densi Crete needs to be applied under medium pressure as described above.

4. Clean Up:

Densi Crete is a water based product and all equipment will wash up in water. Never leave the tip in the airless gun without 1st thoroughly rinsing the tip and head with clean water. If storing for some time, flush the airless sprayer with clean water and replace with the recommended product for long storage.

5. Application of subsequent coatings:

On existing concrete, Densi Crete must be left for a minimum of 24 hours before applying any subsequent coatings. On new concrete, a minimum of 14 days is required before applying coatings, even if Densi Crete was applied as a cure at time of pour. Prior to installing coatings, the concrete must be cleaned by means of high pressure cleaning, diamond grinding or sanding with 40 grit paper on a Polivac sander or similar. Any of the above methods are acceptable. Once the area is cleaned & vacuumed, the concrete is ready for receiving any subsequent coatings.

Some other points to remember:

Concrete Block may need a two coat spray or more (due to the porous nature). It would be unwise to give a guarantee on such a surface as block work, as at times it is only as good as the mortar used, the block layer, expansion/contraction etc. Having said this, we have used Densi Crete extensively on block work with great success.



QUESTIONS & ANSWERS

Can Densi Crete be applied to wet surfaces?

Yes, providing there is no free or pooled water. This means that you can pressure clean and still apply after the free water is gone.

What coverage rate do I get with one litre?

Approximately 4.5m² per litre, however, some very porous poor quality concretes may require more product to enable the sufficient chemical reaction to achieve total results.

Will one coat be sufficient?

Yes in the majority of cases. It may require an additional coat where Hydrostatic Pressure is evident or on old concrete where there is unusually high moisture readings.

Can I install floor coverings on concrete that is less than 14 days old if I am forced to?

Yes, however contact DuraCore for further information and advice.

Do I have to remove curing membranes?

Yes, as you would with any other material and as laid out in the Australian Standards. Surface must have some porosity to allow penetration. Pour a little water on surface to test for porosity.

Does treated concrete require special primers or preparation before applying floor preparation materials?

Generally no, as most leading brands have been successfully applied. Contact DuraCore or the leading brand manufacturer's for their recommendations. Floor must be sanded and vacuumed to remove all the possibility of alkaline laitance purged, excess dried material or any other contamination.

What is the shelf life and can I reseal the pail for further use in the future?

Densi Crete has virtually an unlimited shelf life and comes in pails with re-sealable lids fitted. The long shelf life allows for product to be kept on hand for convenience and just in case an unexpected moisture job comes up.

Does Densi Crete require mixing and special clean up procedures?

Densi Crete is ready to use, no messy mixing or clean up required. Simply wash with water.

Is Densi Crete safe to use?

Densi Crete is totally user and environment friendly, odourless, zero VOC. MSDS sheet available.

What precautions if any should I take?

As Densi Crete is alkaline, like so many other products commonly used in the building industry such as wet concrete, cement mortar, cleaning chemicals etc. may cause some slight surface etching effect on glass or polished aluminium if allowed to dry before rinsing with water. Best to mask or protect from product drying on the surface. If contact is made wipe off with water and dry with clean cloth.

How long do I have to interrupt site access and how long before I can walk on the surface?

Normally, the area is trafficable in one hour. Whereas most other systems are closed to foot traffic and general site access for 24 hours and in some cases 72 hours.



QUESTIONS & ANSWERS

Will dropping tools etc on the surface damage the moisture proofing ability?

Unlike many other products that form a topical type membrane that if perforated, it basically renders the system ineffective, Densi Crete penetrates deep inside the concrete matrix and allows drilling, nailing and surface damage to occur without affecting its moisture proofing performance.

Can I apply adhesives and levelling, repair mediums directly to concrete treated with Densi Crete?

The unique formulation of Densi Crete has been specifically designed to moisture proof concrete and at the same time achieve and maintain an approximate 2mm surface porosity to accept acrylic primers etc that are commonly used in the flooring Industry. After the final sanding and vacuuming of Densi Crete treated concrete has taken place, you will notice this porosity and the floor is ready to proceed with floor Prep etc. Although, there are many types of adhesives and levelling compounds/repair mediums that are used directly on the prepared surface, if the concrete is very dense (high quality) in surface and matrix make up, you would normally have to apply some levelling material to accept water borne hard set type of adhesives to allow moisture dissipation and correct tack times whether our material was used or not. In other words, on this type of concrete, because of the size and molecular shape of our material, it would normally penetrate and complete its purpose and after sanding and vacuuming to remove any contaminants that may have been purged, or some excess material that has dried on the surface, you would be left with the same dense surface you started with, which would require some surface prep as previously mentioned. In other words, it is not all about the effect of our product, but also the original density of the substrate. As mentioned previously, legally we cannot speak on behalf of other manufacturers and strongly suggest you contact the product manufacturers for their product recommendations for the required purpose, as here are so many different types of adhesives etc manufactured for particular and specific uses.

Warranty:

All warranty information is provided on the DuraCore website. Warranty paperwork **MUST** be filled in and faxed or emailed back to DuraCore with 14 days of completion of the project. Failure to include this paper work will void any future warranty.

Health & Safety:

Refer to the website for MSDS on each product. However, DuraCore products for the most are not harmful and are VOC free. It is also important to note when discussing with a client that RCS (Respirable Crystalline Silica) is found in concrete/cement dust. Refer to: www.deir.qld.gov.au for Health Hazards associated with Silica Chronic Pulmonary Disease e.g. Emphysema, Silicosis, Lung Cancer etc. Densi Crete helps to eliminate dusting, thus can become an integral part of Health & Safety issues in the future. Remember too that RCS is invisible to the naked eye.

The applications for Densi Crete and other DuraCore Products are many and varied, from a residential garage floor to high rise construction buildings, including driveways, decks, car parks, walls, floors, basements etc. The uses are unlimited.

