



If it's hardcore, it's DuraCore!

Leading Concrete Protection Systems

www.duracore.com.au

DENSI CRETE

Densi Crete is a single application; spray applied, concrete waterproofer, densifier & curing agent designed for new or old concrete. It is a colloidal silica that penetrates to extraordinary depths, up to 100mm and beyond. Densi Crete is successful in overcoming moisture problems and offers a permanent treatment against moisture vapour emissions and resulting damage to concrete mass. Densi Crete provides an excellent medium in the prevention of adhesive and or coatings failure due to excessive moisture, and does not affect surface bond quality in any manner. It can withstand a minimum of 35mtrs or hydrostatic pressure and can be effectively applied to either the positive or negative side of concrete structures.

Description:

Densi Crete is a clear, odourless and environmentally friendly; VOC / VOS compliant penetrate in colloidal liquid base.

Basic Use:

When applied to already-set concrete, Densi Crete internally seals, waterproofs & densifies concrete of any age. Densi Crete provides concrete an effective chloride ion barrier preserving it's embedded steel while removing potential for contaminant ingress. It significantly reduces the vapour transmission rate while preserving treated concrete's integrity.

A Densi Crete treatment further increases surface abrasion resistance, and surface acid / chemical damage resistance. As Densi Crete penetrates extraordinarily deep into concrete, it prolifically reacts with the free alkali or unused calcium hydroxide residue. These reactions prolifically convert Densi Crete's unusually low solids colloidal liquid to a 100% solids insoluble precipitate. This instantly provides additional density by becoming an integral part of the concrete, occupying its accessible porosity and other tiny voids.

Densi Crete forms a breathable barrier which begins in concrete's transitional porosity, located beneath its large surface porosity and its small micro porosity, and deeper. No heat is generated during its liquid to solids conversion, nor is there any expansion pressure. The internal barrier remains resilient and consists of pore size that are much smaller than concrete micro pores, significantly diminishing permeability, and allowing concrete to retain the ability to breath, expand, and contract as needed.

Densi Crete densifies, waterproofs, strengthens and internally detoxifies concrete without effect to its external appearance or physical characteristics. A Densi Crete treatment will further enhance its surface bonding ability. Areas that are to be treated need only be closed during treatment, and may be reopened

immediately after treating. However, where a surface coating is planned, wait at least 24 hours following a Densi Crete treatment then either sand or mechanically grind, removing purged salts, particles and sediments etc., if any. The surface may then be prepared to coating manufacturer specifications.

As a Cure Method:

Densi Crete is excellent as an alternative concrete curing method, providing a cure equal to or better than water curing. Densi Crete as a cure method provides concrete the usual benefits of a curing agent, plus, Densi Crete provides special ingredients to the yet-available capillary mix water, waiting to participate in reaction rates and processes. In the plastic or semi-plastic mix, reciprocating acceleration of hydration's reaction rates and processes, in turn generating increased volumes of cement paste / hydration product, in a significantly shorter period of time, utilising all of the remaining capillary water and leaving none to later evaporate and leave void spaces. As a result of utilising all remaining capillary mix water, the concrete's capillary void spaces become more segmented and smaller than usual.

Densi Crete provides concrete a superior cure imparting extraordinary strength, surface hardness and impermeability, subsequently translating to greatly improved durability. The Densi Crete cure method provides concrete an especially formulated permanent sub-surface precipitate barrier containing pore sizes smaller than concrete's micro pores. Even further diminishing porosity / permeability effectively forcing gases such as radon to seek other avenues of escape, instead of passing through the concrete, where applicable.

The Densi Crete cure method leaves no surface residue to interfere with surface bonding quality, important where stripping or applying a topical. Utilizing Densi Crete as an alternative cure method produces concrete significantly more waterproof, abrasion resistant, freeze damage resistant, dust resistant, acid / chemical resistant, etc.



Installation:

On Already-Set Concrete:

Note: In hot climates, mist-wet the surface with water and remove any puddles prior to application.

Apply using a medium to high pressure airless spray unit (1450 psi), complete with fan spray nozzle. Holding spray tip 150 mm from surface, apply at minimum rate of 4.5m² per litre with an overlapping spray pattern of 50%. Begin application at the lowest elevation. Densi Crete should fully penetrate within one hour. Broom any puddles into drier areas and do not allow any excess product to dry on the surface. Remove any product that hasn't penetrated within the first hour with a squeegee.

As An Alternative Cure Method:

Apply with a low-pressure non-atomizing, spray apparatus such as pump-tank sprayer or mechanical cure slurry pump, or alternatively by flooding-on. Densi Crete is ideally applied to the newly poured concrete surface as soon as is practical following its surface finishing phase. Should conditions require the surface to be walked on, for application, concrete should be allowed the time to adequately harden, so as not to imprint or mar its surface during application. Recommended minimum coverage rate as cure method is 4m² per litre.

Caution:

Like many construction materials including fresh concrete, Densi Crete contacting glass should be flushed with water and not be allowed to dry, since glass may etch. Densi Crete will dull the shine on shiny aluminum; however, aluminum's integrity will be otherwise unaffected.

As An Alternative Cure Method:

1. Anything that may restrict access to the concrete's interior must be chemically or mechanically removed for Densi Crete to penetrate.
2. Protect areas not intended for coverage.
3. Densi Crete may etch glass or dull shiny aluminum and can be difficult to remove from other surfaces once it dries.
4. Do not apply on frozen substrate or when temperature is near freezing.
5. Densi Crete's spray mist is not hazardous to breathe. However, we do recommend the use of a face mask during application.
6. For more information read Material Safety Data Sheet available at www.duracore.com.au

Technical Data

Physical:	Liquid
Colour:	Cloudy White (dries clear)
Odour:	None
Specific Gravity:	1.10
pH:	+/- 11.5
Flammability:	None
Toxicity:	None
VOC / VOS Content:	None
Surface Bond Quality:	Excellent
Paint ability:	Excellent
Clean-up solvent:	Water
Environmental Impact:	None/Neutral
R-Factor Increase:	Up to 20 percent
Chloride Screen ability:	Excellent
User Status:	Friendly

Some Advantages

- ✓ Permanently Integrally Waterproofs Concrete
- ✓ Provides a Cure Equal to Water Ponding
- ✓ Moisture Barrier for Impervious Floor Coverings
- ✓ Compatible with most Flooring & Coatings Systems
- ✓ Densifies & Hardens Concrete of any Age
- ✓ Further Restricts Vapour Transmission
- ✓ Preserves Concrete's Matrix & Overall Integrity
- ✓ Excellent as a Coating or Topping Primer
- ✓ Improves Thermal Resistance (R-Factor)
- ✓ Increases Tensile & Compressive Strengths
- ✓ Improves Dusting Resistance
- ✓ Improves Acid / Chemical Resistance
- ✓ Retards Efflorescence
- ✓ Stabilises Concrete's pH Levels
- ✓ Can be Used on Vertical or Horizontal Surfaces
- ✓ Minimum Site Disruption, Trafficable After 2 Hours
- ✓ Zero VOC & VOS Content
- ✓ Environmentally Friendly
- ✓ Clean up in Water

