



If it's hardcore, it's DuraCore!

# 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 200mm and beyond. Densi Crete is successful in overcoming moisture problems and offers a permanent treatment against moisture vapour emissions and resulting damage to the 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 of 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 a 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 its 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 sizes that are much smaller than concrete micro pores, significantly diminishing permeability, and allowing concrete to retain the ability to breathe, 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. 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 hydration 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 utilizing 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 Densi Crete using a medium to high pressure airless spray unit (1450 psi), complete with fan spray nozzle. Holding spray tip 150 mm from surface, apply Densi Crete at minimum rate of 4.5m<sup>2</sup> per litre with an overlapping spray pattern of 50%. Begin application at the lowest elevation. For example, walls and slopes should be applied side to side, from the bottom up.

### **As An Alternative Cure Method:**

Apply with a low-pressure non-atomizing, spray apparatus such as a 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 a cure method is 4 m<sup>2</sup> 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.

### **Precautions:**

1. Any coatings 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](http://www.duracore.com.au)



**If it's hardcore, it's DuraCore!**

### **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 Internal Humidity Stability
- Further Restricts Vapour Transmission
- Preserves Matrix and Overall Integrity
- Increases Surface Abrasion Resistance
- Excellent as a Coating or Topping Primer
- Concrete Densifier
- Improves Thermal Resistance (R-Factor)
- Increases Strengths
- Zero VOC & VOS Content
- Prevents Water or free Moisture Migration
- Makes Ice Removal and Cleaning Easier
- Improves Dusting Resistance
- Improves Acid / Chemical Resistance
- Lowers Internal Chemical Reaction Potential
- Lowers Creep Deformation Potential
- Lowers Electrostatic Discharge Potential
- Improves Past Carbonation Effects
- Withstands Hydrostatic Pressure

