C² Super Hard™

Premium Lithium-Silicate Hardener & Densifier for Concrete

DESCRIPTION

C² Super Hard™, with the maximum lithium content is the premium hardener and densifier for concrete surfaces. This patented lithium silicate treatment deeply penetrates and reacts with the concrete to produce insoluble calcium silicate hydrate within the concrete pores. Treated surfaces will resist damage from water, surface abrasion and eliminates dusting and simplifies maintenance.

C² Super Hard™ can be used solely when incorporating a mechanical operation such as grinding, sanding or any form of polishing or burnishing. This product can also be used on an extremely porous, low quality floor or where you are looking for maximum hardness on a deteriorating slab. C² Super Hard™ can be used where no other possible topcoats or C² Seal™ will be required. You are looking at an improved sheen without any worry of reapplication or burnishing.

C² Super Hard™ will also provide extended coverage rates in comparison to C² Hard™ and other conventional sodium or potassium silicate hardeners.

BENEFITS

Excellent Penetration

The patented formulation of the C² Super Hard™ contains a highly reactive lithium catalyst, which achieves a much greater penetration into the floor surface and triggers a much faster and more complete reaction with the concrete than traditional sodium silicate.

Durability

C² Super Hard™ will outlast any other sodium or potassium densifiers. C² Super Hard™ contains chemicals heavy in silica, which reacts with calcium hydroxide in concrete, densifies and hardens the micro pores in the top layer of the concrete ("wear zone"), creating a permanent impregnation of the concrete floor. C² Super Hard™ is breathable and UV stable. Will not yellow, discolor, peel or flake.

Greater Abrasion Resistance

Maximum Hardening will effectively and significantly increase abrasion resistance in comparison to conventional sodium or potassium hardeners. Floors treated with C² Super Hard™ will improve abrasion resistance by over 55% compared to unthreaded concrete.

Eliminates Dusting

In ordinary concrete, tiny particles of dust are pushed to the surface through an upward force called hydrostatic pressure, resulting in efflorescence, which leads to dusting. C² Super Hard™ eliminates efflorescence and prevents dusting making concrete easy to maintain.

Reduces or Eliminates ASR

(Alkali Silicate Reaction) due to high lithium content. High concentrations of sodium or potassium salts, which will contribute to surface crazing and surface ASR, are not present in C² Super Hard™.

Lithium will not absorb water or contribute to floor sweating.

Reduces Tire Marks

The rough, uneven texture of natural concrete causes tires to abrade, adding to their wear. A concrete floor treated with C² Super Hard™ will make the entire surface smooth, preventing this abrasion and leaving minimum tire marks on the floor.

Improves Condition of Old Floors

As concrete ages, surface stress, delaminating, curled cold joints, and other problems can arise. C² Super Hard™ combined with customized grinding and polishing technique, can remove the top surface layer of the old concrete and strengthen the floor, increasing its impact and abrasion resistance.

Little or No Production "Down Time"

Cures quickly. Floor can be put into service immediately after the application process is complete. Due to the cleanliness of the process and the lack of toxic or hazardous chemicals, floors can often be serviced while the plant is in full production.

Cost-Effective

C² Super Hard™ improves performance, appearance and light reflectance of new and old floors. It will reduce energy bills. A treated floor will lower maintenance costs significantly through reduction in upkeep (no waxing), and reduced tire wear.

LEEDS Certified

Tested and conforms to California Collaborative for High Performance

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School Indoor Air Quality standards. Use can contribute to LEED® for schools points.

Planet Safe

C² Super Hard™ is water-based, contains no solvents, non-toxic, no smell, complies with all known national, state and district AIM VOC regulations, non-mutagenic & carcinogenic (safe in food preparation areas), non flammable, low odor, fast drying, easy to apply.

ADVANTAGES

- Compatible with all C² lithium hardeners, densifiers, sealers and cleaners.
- Helps Concrete Curing. For best results, use C² Super Hard™ first for hardening and densification followed with a water-based, dissipating curing membrane. C² Super Hard™ should not be substituted as a curing agent.
- Easy to Use. Reduces application time and costs of burnishing and diamond polishing operations. One step application. No white salty spots on concrete, No scrubbing and flushing required after application. No caustic wastewater.
- Ordinary cleaning can easily remove blemishes and tire marks.
- An extremely hard marble-like shield and permanent impregnated surface can be achieved for the life of the concrete with one single application.
- May be applied to broom finished, steel troweled, power troweled or polished/burnished concrete finishes before final cure.
- Much safer and easier to apply than conventional sodium or potassium silicate hardeners.
- C² products are patented formulations.
- Produces a fast surface gloss, which improves with traffic and maintenance.
- Slip resistance is not diminished with high gloss and hardness.

COMPLIANCE

Complies with all known national, state and district AIM VOC regulations:

C² Super Hard™ is recommended for use on concrete classes both new and existing.

Safe for use in food and drug processing industries.

X	California Air Resources Board SCM Districts
X	South Coast Air Quality Management District
X	Maricopa County, Arizona
X	Northeast Ozone Transport Commission
X	US Environmental Protection Agency

Technical Data

FORM	Clear, water-like liquid
SPECIFIC GRAVITY	1.10
ACTIVE CONTENT	14.5%
TOTAL SOLIDS	14.5%
pH	11.0
WT/GAL	9.2 lbs
FLASH POINT	Not flammable
FREEZE POINT	0°C (32°F)
VOC CONTENT	<20g/L
SHELF LIFE	2 years in unopened, factory sealed container

Limitations

All information provided is accurate to the best of our knowledge and is to be used strictly as a guide. Handling conditions, installation and use are not in our control therefore we cannot guarantee the results.

- C² Super Hard™ does not meet the ASTM-309 Standard. To meet this standard and create a membrane, use a dissipating, water-based curing agent.
- Will not repair damaged surfaces and cracks.
- Not recommended for use on plastic concrete, mortar, resin-based terrazzo mixes and painted or asphaltic and non-cementitious surfaces.

For additional testing information contact Crete Colors International at: support@cretecolors.com

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SURFACE PREPARATION

Please read: SAFETY INFORMATION on the label and SURFACE PREPARATION before use and application.

SOLUTIONS

Remove all curing compounds and other surface contaminants using the appropriate C² surface preparation cleaner, as listed below:

C² Wash ™ – Concrete laitance and construction soiling from freshly placed and cured concrete

C² Maintenance ™ – General soiling and fine dust from ground/polished concrete

C² Remove ™ – Curing compounds, mastics, tire marks, wax remover

C² Stain Clean ™ – Oil and grease stain remover

C² Clean ™ – For cleaning and degreasing light-to-heavy soiled concrete.

C² Safe Prep ™ - Non-fuming cleaner and surface-prep for concrete

Surface

Application of C² Super Hard™ may begin as soon as prepared surfaces are dry and free of ponded water. Do not apply to surfaces, which are frozen, dirty or have standing water.

Acid-stained concrete must be thoroughly neutralized and rinsed prior to application of C² Super Hard™.

Protect people, vehicles, property, plants and all nearby surfaces not to be treated from contact with the product including contact resulting from wind drift or overspray. Use polyethylene or other proven protective material to mask off all surrounding areas.

Surfaces must be clean, dry and absorbent. Confirm surface absorbency with a light water spray. Surfaces designated for treatment should wet uniformly. If the surface does not wet uniformly, use the appropriate surface preparation cleaner or mechanical process to remove remaining surface contaminants. Always prepare a test sample to ensure that the desired results are achieved on the specific substrate.

Equipment

Use low-pressure sprayer and soft-bristled push broom, squeegee or microfiber pad.

Air and Surface Temperature

Air and surface temperature should be 4°C to 38°C (40° F to 100° F).

Specifier Note: The information provided below is intended to guide the Architect in developing specifications for products manufactured under contract for Crete Colors International, LLC and should not be viewed as a complete source of information about the product(s). The Architect should also refer to the MSDS document for additional recommendations and for safety information.

Specifier Note: Paragraph below is for PART 1 GENERAL, Quality Assurance.

Test Area

- Test a minimum 1.5m x 1.5m (5ft. x 5ft.) area on each type of masonry.
- Use Crete Colors International, LLC application instructions.
- Let the test panel dry 3 to 7 days before inspection.
- Keep test panels available for comparison throughout the project.

Specifier Note: Paragraphs below are for PART 2 PRODUCTS, Manufacturers and Products.

Manufactured under contract for:

Crete Colors International, LLC,
112 South Kyrene Rd. Suite #2
Chandler, AZ 85226, USA.
Tel: +1-602-903-2133
Fax: +1-514-938-6087
E-mail: support@cretecolors.com

Specifier Note: Paragraphs below are for PART 3 EXECUTION, Installation.

STORAGE AND HANDLING

Maintain temperature of 4-38°C (40-100°F), protect from extreme temperatures and keep from freezing.

Do not double-stack pallets.

Published shelf life assumes upright storage of factory-sealed container in a cool dry place.

Do not alter or mix with other chemicals. Thaw and Mix well

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before using and always seal container after dispensing.
Dispose of unused product and container in accordance with local regulations. Do not reuse container or remove labels.
Keep this and other chemicals out of the reach of children.

PACKAGING

20L or 200L Containers

APPLICATION INSTRUCTIONS

ALWAYS TEST

each surface for suitability and desired results before application. For best results follow "Application Instructions". Let surface dry thoroughly before inspection and final approval.

Dilution

Do not dilute, apply as packaged when applying to cured concrete or cured and ground/honed concrete. Apply mist-like coat when using on highly polished concrete (3,000 grit resin diamonds).

COVERAGE RATES

Freshly Placed, Uncured Steel Troweled Concrete

- 15-25 m²/L
- 600-1000 ft²/US gal

Cured, Steel Troweled Concrete

- 12-22 m²/L
- 500-900 ft²/US gal

Cured, Ground/Honed Concrete

- 10-20 m²/L
- 400-800 ft²/US gal

PLEASE NOTE: Coverage rates are offered for estimating purposes only. Variations in concrete quality, porosity, job site conditions, temperature and relative humidity will affect coverage rates and drying times.

Typical Coverage Rates

Calculate Target Coverage Rate by testing a small section of the prepared surface using instructions found below.

Calculating Specific Target Coverage Rate

- Prepare the test section in accordance with "Surface Preparation". Surfaces must be clean, dry and absorbent. Confirm surface absorbency with a light water spray – surfaces designated for treatment should wet uniformly.
- Add 3.5L of C² Super Hard™ to a clean, pump-up sprayer fitted with an adjustable spray tip. Lightly apply according to "Application Instructions" steps #1-7 for the appropriate floor type. Repeat as necessary to determine correct rate of application.
- Measure the test area to establish the Target Coverage Rate per liter.

On cured concrete, C² recommends using an automatic floor scrubber equipped with nylon-grit or cleaning pads to remove construction soiling and residues of any curing compounds. This method will further enhance the surface sheen produced by C² Super Hard™.

Drying Time

30 min. to 1 hour depending on weather conditions and concrete porosity.

Freshly Placed, Uncured Steel-Troweled Concrete

1. Saw cut control joints after final surface preparation.
2. Clean concrete of saw debris or any dirt or residue.
3. Using a low-pressure sprayer fitted with an adjustable spray tip, apply a single coat of C² Super Hard™ at a rate that covers the surface but does not produce puddles. Treated surfaces should stay wet for 5-10 minutes following initial application. Uniformly spread the product in a thin layer using a microfiber pad. The microfiber pad should be pre-moistened with C² Super Hard™ prior to use. Treat porous areas that dry in less than 5-10 minutes with additional C² Super Hard™.
4. Using a squeegee, water rinse or automatic floor scrubber, collect and remove after 15 minutes all residues, which do not penetrate.

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5. Failure to remove excess material may result in extended dry times and a dry powder residue resulting from liberal application of C² Super Hard™.
6. Let treated surfaces dry thoroughly, typically 30 min. to 1 hour. Remove any dried powder residue from the surface using a stiff broom, power sweeper or floor-scrubbing machine.
7. Immediately apply the specified curing compound or initiate the specified curing procedure.
8. Once dry, must burnish to a high gloss finish using high-speed burnisher equipped with C² Heat™ pads. Additional coats may be applied and burnished depending upon concrete porosity and desired finish.

FOR ADDITIONAL SHINE AND PROTECTION, APPLY C² Seal™ ACCORDING TO LABEL INSTRUCTIONS. ALWAYS BURNISH C² Seal™ BETWEEN COATS USING C² Heat™ BURNISHING PADS.

Cured, Steel Troweled Concrete

1. Remove all dirt, debris, or curing compounds. Allow clean surface to dry.
2. Confirm surface absorbency with a light water spray. Make sure that prepared surface is uniformly wet and in hot, dry weather, lightly pre-wet the concrete with fresh water. Allow any standing water to evaporate.
3. Follow steps 2 – 7 as described in "Freshly Placed, Uncured Steel-Trowel Concrete" for completion.

FOR ADDITIONAL SHINE AND PROTECTION, APPLY C² Seal™ ACCORDING TO LABEL INSTRUCTIONS. ALWAYS BURNISH C² Seal™ BETWEEN COATS USING C² Heat™ BURNISHING PADS.

Cured and Ground/Honed Concrete

1. Grind or sand and level the concrete surface with an orbital floor machine, floor sander or diamond grinding machine equipped with a 50 to 200 grit sanding screen, diamond discs or diamond abrasive pad depending upon desired exposure and size of the aggregate. Wash off or vacuum all sanding dust and debris and allow floor to dry.
2. Follow steps 2 – 7 as described in "Freshly Placed & Uncured Concrete" for completion.

FOR ADDITIONAL SHINE AND PROTECTION, APPLY C² Seal™ ACCORDING TO LABEL INSTRUCTIONS. ALWAYS BURNISH C² Seal™ BETWEEN COATS USING C² Heat™ BURNISHING PADS.

Cured and Polished Concrete

1. Follow steps listed above for Cured and Ground/Honed Concrete.
2. To achieve the desired finish, use progressively finer diamond discs and continue grinding from 800 to 3000 grit.
3. Remove all sanding dust and debris. For immediate and enhanced shine, burnish or buff the dry concrete surface in both directions using a burnisher fitted with C² Heat™ burnishing pad. This is a dry buffing operation.

FOR ADDITIONAL SHINE AND PROTECTION, APPLY C² Seal™ ACCORDING TO LABEL INSTRUCTIONS. ALWAYS BURNISH C² Seal™ BETWEEN COATS USING C² Heat™ BURNISHING PADS.

PLEASE NOTE: C² Super Hard™ is compatible with wet or dry grinding and polishing operations. The above procedures for polished and highly polished concrete may be customized by an experienced contractor to complement his grinding or polishing operation.

CLEANUP

Clean tools and equipment with fresh water. Immediately wash with water over sprayed glass, aluminum, or other surfaces.

FINAL RESULTS

The concrete surface is ready to use when dry. Smooth and hardened concrete surfaces should demonstrate reduced water absorption, a satin sheen, and slight color enhancement upon drying. Maximum water resistance and hardness will develop over 7 days. Surface sheen will increase with time and maintenance.

MAINTENANCE

Use C² Maintenance™, our high quality, lithium based solution for cleaning and maintaining the lithium treated surfaces. This proprietary product was developed to further enhance the long-term performance of the finished concrete floor.

Do not use acidic cleaners to maintain treated floors. Though C² Super Hard™ will improve the stain resistance of concrete, some acid concentrates and acidic foods may etch and leave a residual stain if left on the surface. Clean up all spills quickly to minimize any possible damage. All sealers, both penetrating and coatings will only slow down the staining process.

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Spills must be cleaned up in a timely manner.
Daily removal of surface dust and debris with a microfiber pad or dry dust mop will help maintain the desired appearance. Regular maintenance cleaning will improve surface shine. To refresh gloss surface, dry buff periodically with high-speed burnisher and a white pad.
For improved resistance to water or oily stains, apply C² Stain Safe™ according to label instructions.
Apply C² Stain Safe™ directly to the hardened concrete surface.

PLEASE NOTE: If additional protective treatments or surface coatings are desired, please consult Crete Colors International or its local representative for recommendations.

RECOMMENDATIONS

The C² recommendations for surface preparation and product application must be followed. Consult Crete Colors Int'l or its local representatives regarding applications in extreme weather conditions

All loose construction debris and foreign materials must be removed from the area to be treated using a dry broom. All curing compounds, coatings, and paint, wax, embedded soiling, rust, grease and oil must be removed to allow penetration.

Thoroughly neutralize and rinse acid-stained concrete before applying C² Super Hard™.

Always establish grinding starting point for every project.

The instructions for diamond grinding and polishing are guidelines and do not supersede those of the concrete polishing contractor.

Confirm surface absorbency with a light water spray. If surfaces selected for treatment do not wet uniformly, additional surface preparation may be needed.

Wastewater generated by wet grinding or polishing procedures should be collected and disposed of properly.

Maintain C² Super Hard™ hardened floors with Lithium based C² Maintenance™.

For subsequent coating applications, perform proper surface preparation and consult the coating manufacturer for more instructions.

SAFETY INFORMATION

Your safety is our priority. Crete Colors International, LLC is a member of INFOTRAC'S MSDS Partnership Program. In case of any chemical emergency related to our C² products; spill, leak, fire or accident, please contact INFOTRAC free of charge for immediate first aid information.
Keep this and other chemicals out of the reach of children.

Online access 24/7 at:
www.infotrac.net

Phone access 24/7 at:
+1- 352-323-3500

FIRST AID

Ingestion:
Drink large quantities of water or milk. DO NOT induce vomiting. Seek medical attention immediately.
Eye Contact:
Remove contact lenses. Immediately flush eyes for 15 minutes in clear running water while holding eyelids open. Seek medical attention immediately.
Skin Contact:
Wash contacted area with soap and water. DO NOT attempt to neutralize with chemical agents. If irritation persists, seek medical attention.
Inhalation:
Remove affected person to fresh air. Wash mouth and nasal passages with water repeatedly. If breathing difficulties persist, seek medical attention.

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WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, and anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose. Crete Colors International warrants this product to be free from defects. Where permitted by law, Crete Colors International makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.
Crete Colors liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product have been applied. Acceptance and use of this product absolves Crete Colors from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of Crete Colors International, its distributors or dealers.

CUSTOMER SERVICE:

For technical assistance and product information visit our web site at www.cretecolors.com or email at support@cretecolors.com