

TECHNICAL DATA SHEET

SUBSURFACE / HYBRID ASTM C-309 MEMBRANE CURE & HARDENER / SINGLE APPLICATION

GREEN UMBRELLA® SoloCure

PRODUCT DESCRIPTION

Green Umbrella® SoloCure™ is a water-based, membrane-forming curing compound and densifier that meets ASTM C-309; this S.O.L.O. formula can be applied on *@Early-Age* slabs immediately after place and finish. One of the most innovative products on today's market, SoloCure saves time and money during placement by replacing multiple products with one easy-to-use application. This product is specifically designed for concrete that needs long-term protection against heavy wear & abuse without the high VOC content in conventional products. The membrane will form on the surface of the concrete restricting moisture from evaporating while allowing the hardener to penetrate deep into the matrix for improved control over both curing times and strengthening properties.

BASIC USE

SoloCure is part of Green Umbrella's® *CrossOver™* line of versatile concrete treatments meeting both architectural and engineering design professionals' need for environmentally friendly, lifecycle enhancing concrete products. SoloCure™ basic use is as a *Penetrating, Membrane-Forming, Reactive, Insoluble, Nano-Densifier*. The modified treatment increases surface abrasion as a wear guard and impermeability as a chloride ion intrusion shield. Use in applications where basic densifiers and hardeners are specified and where a water resistant, odorless, high-performance concrete cure is desired. Outperforms high VOC, low square footage yield water and salt repellants.

@EarlyAge Concrete: Green Umbrella SoloCure™ is used as a C-309 membrane-forming concrete cure and stand-alone concrete hardener and densifier at time of placement to prevent concrete off-dusting and disintegration, increase chloride resistance and hydrophobicity and reducing damage from freeze/thaw cycles. Unlike conventional formulations, this early application has unparalleled success, not requiring the

concrete to cure 28 days prior to application.

@MatureAge Concrete: Green Umbrella SoloCure™ is not designed for *@MatureAge* concrete.

ARCHITECTURAL APPLICATIONS

Ideal for **interior** or **exterior**, vertical or horizontal concrete, precast or cementitious surfaces. Demanding Applications, warehouse/distribution centers, food service, parking decks, garages, hospitals, or similar, retail spaces & showrooms, restaurants, business offices, lobby areas, museums, municipalities, airports, hospitals, schools, fire-stations, or most concrete surfaces.

FEATURES & BENEFITS

Primary Features & Benefits of concrete film-forming cure Surface and Subsurface treatment.

- MEMBRANE CURE & HARDENER IN ONE
- @EARLYAGE HARDENING
- CURE MEETS ASTM C-309 SPECIFICATION
- EASY TO APPLY
- REDUCES LABOR COSTS
- MINIMIZES SURFACE DEFECTS COMMON TO IMPROPERLY-CURED CONCRETE
- IMPROVES CHEMICAL AND ABRASION RESISTANCE
- ENHANCES NATURAL APPEARANCE OF CONCRETE
- UNLIKE CONVENTIONAL CURES, VOC COMPLIANT, MAY CONTRIBUTE TO LEED POINTS (IEQ CREDIT)
- PRODUCT PERMANENCE - INSOLUBLE - WILL NOT WASH OUT
- UNIQUE GUNANOINSIDE TECHNOLOGY - SUPERIOR PERFORMANCE

TECHNICAL INFORMATION

Formulation	Penetrating Film-Forming C-309 Cure & Reactive Insoluble Hydrophobic Densifier
Chemical Family	Lithium
Substrate Location	Subsurface
Appearance	Translucent
Odor	None
Film Forming	Yes
Active Ingredients	100%
Type	Cure, Chloride Screen, Sealer, Densifier
pH	11
Boiling Point	212°F
Packaging	5-gal bucket, 55-gal drum, 275-gal tote
Shelf Life	2 years
VOC(grams/liters)	<50g/L
Freezing Point	32°F

SAFETY DATA SHEETS FOR ALL PRODUCTS ARE AVAILABLE AT
WWW.GREENUMBRELLASYSTEMS.COM

- RESISTS PENETRATION OF OILS, CHEMICALS AND STAIN-CAUSING CONTAMINANTS.
- INCREASES HARDNESS 1/4 INCH DEEP, WHILE REDUCING POROSITY
- PREVENTS DANGEROUS OFF-DUSTING - SAFER FOR BUILDING OCCUPANTS
- IMPROVES EASE OF MAINTENANCE
- S.O.L.O. APPLICATION & BRIEF DWELL TIME - CUTS DOWNTIME
- NON-SODIUM - DOES NOT CONTRIBUTE TO ALKALI-SILICA REACTION
- R.T.U.** - READY TO USE - REDUCING LABOR

ADDITIONAL BENEFITS

@EarlyAge™ Concrete

- NO 7-28 DAY APPLICATION RESTRICTION - LESS DOWNTIME
- NOT A DESICCANT - WILL NOT DAMAGE CURE OF NEAR SURFACE
- PROTECTS SURFACES DURING CONSTRUCTION
- DOES NOT REQUIRE CALCIUM HYDROXIDE REACTION - MAY APPLY SAME DAY AS POUR
- WILL NOT GEL ON SURFACE - NO SWELLING IN PORES THAT CREATES CRAZE CRACKING

MANUFACTURER & PRODUCT CONSULTING

Green Umbrella

20 Jetview Drive

Rochester, NY 14624

(844) 200-7336

Website & Documents Available At:

GreenUmbrellaSystems.com

CutSheet, Application Sheet, Feature Brochure,
Technical Data Sheet, Safety Data Sheet

Product Consulting Email:

Info@GreenUmbrellaSystems.com

ESTIMATING

Container Size:

5 gallon (18.9L) - 43 lbs. (19.5 kgs)

55 gallon (208L) - 469.1 lb (212.8 kg)

275 gallons (1,041 L) - 2,345.6 lb (1,064 kg)

Each Green Umbrella SoloCure™ container is properly labeled with information, including the product name, description, batch number, and application instructions.

Dilution:

None. R.T.U. (Ready-To-Use).

Coverage Rates:

Green Umbrella SoloCure has an average coverage rate of 400 SF per gallon. On hard troweled concrete, the coverage rate may be increased to a max of 600 SF per gallon. Broom finish concrete may have an average coverage of 250 SF per gallon. Under normal conditions, only one application is necessary. Coverage depends on the porosity of the concrete substrate, time, temperature, and humidity.

CSI SPECIFICATIONS**DIVISION 03 & 09****If for conventional concrete****Section 033000**

Polished Floors

Section 033509

Cast-In-Place concrete for surfaces

Section 032400

Synthetic Fiber Reinforcement

Section 033119

Shrinkage Compensating Concrete

Section 033550

Integrally Colored Concrete

Section 033000

Cast in place concrete

Section 033500

Concrete Finishing

Section 033509

Concrete Cure and Profile Finishing Systems

Section 033900

Concrete Curing

Section 079200

Joint Sealer

For CSI Specifications Contact a Consultant:

info@greenumbrellasystems.com

NOTE TO SPECIFIER

Green Umbrella Concrete System treatments like Green Umbrella® SoloCure™ form an integral part of a successfully specified concrete placement, environmentally installed with extended lifecycle and reduced maintenance.

The specifier must keep in mind several construction disciplines: the concrete mix design, concrete place-

ment, concrete finishing, and concrete maintenance program. We encourage to carefully specify these elements, even if Green Umbrella products are not used. Each of these disciplines is critical for the overall success of this design element. In addition, ways and means generally need to be specified. Green Umbrella Architectural Concrete System is an approach from design to completion, created to help the specifier succeed, covering stages from the concrete pour through to the floor's maintenance.

There are six major components to the Green Umbrella Architectural Concrete System: knowledgeable CONSULTANTS, the CANVAS, the PROCESS made up of 'ways and means,' high productivity EQUIPMENT, TREATMENTS and finally, qualified flatwork and polishing CRAFTSMEN.

Designing the concrete slab:

Green Umbrella GreenCanvas™ shrinkage compensating concrete can be specified in the mix design (ACI 223R-10) to ensure that the surface is ideal for a jointless, non-curling floor when used in slab on grade or elevated deck applications. This is also a sustainable solution for tank farm, industrial and infrastructure projects, including roadways and bridges. For conventional concrete, consult American Concrete Institute Guide to Design of Slabs on Ground (ACI 302.1R-15) for joint spacing if shrinkage compensating concrete is not used. The specification should separate concrete slabs into 03 30 00 Cast-In-Place concrete for surfaces not designated for polished concrete. For abrasively processed architectural concrete floors, use SECTION 033509 – CONCRETE CURE AND PROFILE FINISHING SYSTEMS. Its components follow the Nine Fundamentals of Green Polishing (www.theconcrete9.com) that educate a specifier on these principles. In addition, consulting ACI Guide to Decorative Concrete (ACI 310R-19) can be helpful.

For Designing the concrete slab, consult American Concrete Institute Guides (concrete.org):

ACI PRC-302.1-15: Guide to Concrete Floor and Slab Construction

ACI 302.2R-06: Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials

ACI PRC-308-16: Guide to External Curing of Concrete

ACI PRC-310-19: Guide to Decorative Concrete

ACI PRC-330.2-17: Guide for the Design and Construc-

tion of Concrete Site Paving for Industrial and Trucking Facilities

ACI PRC-360-10: Guide to Design of Slabs-on-Ground

Hardeners & Densifiers: Research shows that these treatments are effective against concrete dusting and provide needed hardening of the surface, accepted as a standard. Green Umbrella concrete treatments are non-sodium and do not generate hazardous waste. The Green Umbrella line of densifiers are not water-soluble and do not contribute to alkali-silica reaction. A unique benefit of SoloCure™ is the moisture and chloride intrusion resistance properties.

Colorants: Green Umbrella treatments that are pH neutral will not resist color introduction or promote "walk-off" common with many color and hardener combinations; this is why it is essential to match the family of treatments to the colorants. Otherwise, the specifier may unknowingly specify treatments that do not work well together. Green Umbrella colorants, dyes, and micro-pigments have superior color fastness compared to traditional stains and dyes. FROM DESIGN TO COMPLETION, YOU EXPERIENCE A COMPLETE SYSTEM.

Environmental Responsibility and LEED Considerations

A Green Umbrella Architectural Concrete Systems specified process is specially designed to require less labor and downtime while lowering environmental impact. Green Umbrella SoloCure™ is easy and quick to apply, requiring less labor. SoloCure™ has low VOC's with no impact on indoor air quality.

Human Health - Indoor Environmental Quality (IEQ)

- Architectural Concrete may be finished so as to dramatically reduce bacterial adhesion and the presence of biofilms, creating a healthier environment free of harmful bacteria and viruses.

Human Health - Indoor Air Quality (IAQ)

- Many studies indicate that indoor air quality is enhanced with properly maintained Architectural Concrete vs. carpet or other floor coverings.
- Architectural concrete does not support combustion, nor does it produce smoke or toxic fumes (LEED v4.1 Operations and Maintenance, propane equipment).
- Architectural Concrete can eliminate moisture issues, shrinking possible growth of mold and fungus.

Building Reuse/Construction Waste Management/Recycled Content

- Existing Buildings — Environmental stewardship through the reuse of the existing floor.
- New or Existing Buildings — Not wasting materials or energy required to produce a floor covering or topical coating.

VOC/IAQ/Long-term Maintenance

- Low VOC content densifier/sealer
- Many studies indicate that indoor air quality is enhanced with properly maintained hard surfaces vs. carpet
- Architectural concrete does not support combustion, nor does it produce smoke or toxic fumes (LEED v4.1 Operations and Maintenance, propane equipment) Architectural concrete has a lower maintenance cost and zero replacement cost compared to traditional floor coverings.

Life Cycle Cost

- Producing an impermeable surface that is resistant to chloride and freeze/thaw improves the lifecycle, durability and performance of the surface.

TESTING



For all independent lab testing contact us at:
Info@GreenUmbrellaSystems.com

ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete <0.52 kg/m² in 72 hours (* 0.55 kg/m² max)

ASTM C779-05 Standard Test Method For Abrasion Resistance Of Horizontal Concrete

ASTM C1583 Standard Test Method For Tensile Strength Of Concrete Surfaces And The Bond Strength Or Tensile Strength Of Concrete Repair And Overlay Materials By Direct Tension (Pull-Off Method)

ASTM 1308 Standard Test Method For Effect Of Household Chemicals On Clear And Pigmented Organic Finishes (Aviation Fluid Resistance With Green Umbrella Max- Defense™ System)

ACI 302 Standard Guide For Concrete Floor And Slab Construction

ASTM C-78-94 "Standard Method for Flexural Strength

of Concrete (Using Simple Beam with Third-Point Loading)."

CRD-C 48-73 " Method of Test for Water Permeability of Concrete"

Mohs Scale Of Mineral Hardness

USDA Compliant

USDA regulations 9 CFR, Section 416.4 and the Food Safety Inspection Services, "Sanitation Performance Compliance Guide".

FDA Compliant



All products can be seen at
GreenUmbrellaSystems.com

End Note to Specifier

PRODUCT PLACEMENT

@EarlyAge Conventional Concrete: Place SoloCure™ post concrete finishing.

@MatureAge Conventional Concrete: NOT USED FOR @MATUREAGE CONCRETE.

Surface Preparations

For Green Umbrella® SoloCure™ to effectively penetrate the substrate, the temperature should be 40°F and rising for 24 hours during and after application. For windy conditions or temperatures exceeding 95°F (35 °C) on @EarlyAge concrete: Exercise caution. It is not recommended to apply SoloCure™ in high wind conditions. Do not allow to puddle to avoid disparate cure effect.

@EarlyAge Concrete (28 days or earlier):

If @EarlyAge Concrete was NOT installed using GreenICE™ Cure, SoloCure™ can be installed as a membrane forming cure & seal with densification. If GreenICE™ Cure System was used - SoloCure™ is NOT recommended or necessary.

1. Green Umbrella SoloCure™ is R.T.U. and should be placed S.O.L.O. to a clean, dry surface using a dedicated GU recommended, non-metal sprayer. Apply evenly on the surface at rate of 200-400 SF per gallon for broom finish or 400-600 SF per gallon for machine troweled finish.
2. SoloCure™ may chemically enter separation with

exposure to UV or prolonged rest. Prior to use - mix using a negative action (top down) drill operated paddle mixer. It is recommended to use a recirculating pump to preserve solvency and prevent chemical segregation. Always confirm sprayer is clean and dry prior to filling.

3. Introduce to the freshly placed substrate with a 1 gallon per minute tip, using a low pressure sprayer. Keep substrate wet, placing SoloCure™ uniformly and without puddling - with a dwell time of 30 minutes, for full saturation.
4. Allow product to air dry. Restrict all traffic for 2-3 hours or until the surface is dry. If the product is not dry within two hours, blowers or fans may be used to reduce dry-time, even pointed directly onto slab.
5. To remove film-forming cure **use only Green Umbrella DeepClean w/Slip Resist** with auto scrubber equipped with soft bristle brushes or thick black pad after 28 days.
6. For additional sheen after 28 days, clean using Green Umbrella DeepClean & Maintain and burnish using a propane powered UHS GreenGloss concrete weighted burnisher equipped with a thick black pad.

Note to Applicator & Specifier:

TIME, TEMPERATURE & HUMIDITY

For a chemical reaction to take place successfully, time must be allocated for the full reaction. When applying Green Umbrella SoloCure™ to concrete, the installer must allow adequate dwell time for the reaction to take place. Doing so will help to achieve the best result.

Humidity also plays a role in the dry time. Product applied to a dry concrete surface in an arid climate will dry faster than in a humid environment. In dry climates with low humidity, it may be necessary to hydrate the slab pre or post application to allow for proper dwell time. If several treatments are being applied, product staging should be planned to meet all treatment **dwell times** and **dry times**. It is recommended to use **dew point data** from a mobile hygrometer to determine the best course of action and to eliminate needless down-time. Please consult a Green Umbrella consultant with any questions. The use of on-site hygrometers and thermometers can provide meaningful data to facilitate treatment application success. **Call, e-mail or text your Green Umbrella consultant for assistance.**

HEALTH & SAFETY

Clean sprayers and equipment with warm, soapy water and rinse thoroughly following use. Any product that cannot be saved for recovery or recycling should be disposed of according to local/state laws.

WARNING:

Keep out of reach of children. Read the label before use.

FIRST AID:

Contact a Poison Center or physician if the injured feels unwell. If swallowed: DO NOT induce vomiting. Rinse eyes with water. Remove the injured to fresh air and keep at rest in a position comfortable for breathing. Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse.



For Detailed SDS consult company website
www.GreenUmbrellaSystems.com

For Medical Emergency call INFOTRAC (24/7):
1-800-535-5053

Green Umbrella Headquarters (Normal Business Hours):
(844) 200-7336

MAINTENANCE

IMPORTANT: Only use a Green Umbrella pH neutral cleaner - Green Umbrella GreenClean & Degreaser™, Green Umbrella DeepClean with Slip-Resist™ - or other cleaner recommended by Green Umbrella in writing. These products are pH neutral without additives that could harm the concrete and colorants in the concrete.

Conventional Concrete Floors

- Regularly sweep away debris
- Regularly use a water broom or auto-scrub to remove dirt buildup from treated concrete surfaces

Abrasively Polished (PHP) Concrete Floors

- Regularly sweep away debris
- Regularly auto-scrub or mop with water or with a Green Umbrella pH neutral cleaner
- Use Green Umbrella GreenClean and Degreaser™, as needed

Facility Maintenance Schedule and Training

www.GreenUmbrellaSystems.com

WARRANTY & LIMITATIONS

For a period of ten (10) years beginning the date on which the concrete surface described is treated with Green Umbrella® products, Green Umbrella Companies (GU) warrants to the owner that after the specified completed installation, the treated surface will remain water-resistant, dust-proof, hardened, and abrasion-resistant. In the event the surface fails to perform, GU will, at its own expense and its own discretion, supply either sufficient product(s) to repair any such failure or provide materials cost reimbursement. A GU manufacturer's representative must be on-site to supervise the installation.

It is the contractor's responsibility to follow all directions and requirements, as outlined in the Green Umbrella installation specifications. A completed Project Survey form or equivalent document outlining the steps and products used in the process must accompany this warranty request. Green Umbrella Companies (GU) solely and expressly warrants that its products shall be free from defects in materials and workmanship for six months from the date of purchase. Unless authorized in writing by an officer of GU, no other representations or statements made by GU or its representatives, in writing or orally, shall alter this warranty. GU MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR ORDINARY OR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES THE SAME. Green Umbrella PRODUCT APPLIED TO SUB-STANDARD CONCRETE IS EXCLUDED FROM ANY KIND OF WARRANTY. If any Green Umbrella product fails to conform to this warranty, GU will replace Green Umbrella product at no cost to the Buyer. Replacement of any Green Umbrella product shall be the sole and exclusive remedy available, and the Buyer shall have no claim for incidental or consequential damages. Any installation of Green Umbrella products that fail to conform to such installation information and instructions shall void this warranty. If any, product demonstrations are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. The Buyer shall be responsible for determining Green Umbrella products' suitability for the Buyer's intended purposes.

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