TECHNICAL DATA SHEET

GREENUMBRELLA®

ICECAP

Capping The Concrete

Green Umbrella® IceCap™ is a durable sub-surface nano-finish for exposed architectural concrete floors. Protect *@EarlyAge* concrete placed with IceStart™ and IceStop™ with a penetrating, sub-topical, reactive, non-resinous polymer soon after placement - preserving, protecting and enhancing the finished surface. As the third and final piece of the GreenIce™ Cure & Cap system - concrete is sealed with a breathable, dense, and maintainable layer of protection that will not whiten, chip, flake or peel. An impregnating component providing resistance to harmful contaminants, IceCap™ doubles as both a stainguard and a wearguard via industry-leading technology and performance. IceCap™ enhances architectural gloss while extending the concrete floor's lifecycle, maintenance, and sustainability; promoting reflectivity, clarity, and cleanliness.

BASIC USE

Green Umbrella® IceCap™ is a Penetrating, Non-Resinous, Reactive, Interior-Exterior MicroFinish for Non-Profiled Surfaces. IceCap™ works as a guard against both stains and wear - it can be applied before trades are on the floor for protection during the construction phase. The nano-enhanced treatment increases surface abrasion as a wearguard and enhances impermeability as a stainguard while enhancing gloss and improving profile clarity. The hard bond to concrete produces a protective layer that prevents contaminants from penetrating, making floors more durable and easier to clean and maintain. Use in applications where hard troweled, exposed concrete is specified and where a water resistant, odorless, and high-performance concrete protectant is desired.

***@EarlyAge* Concrete:**

GreenIce Cure & Cap: IceStart, IceStop and IceCap is a comprehensive concrete cure system designed for Interior or Exterior concrete with a polished concrete sheen—by Green Umbrella® of Rochester, NY (844) 200-7336 R.T.U. (Ready to Use), S.O.L.O. (Spray-On, Leave-On).

Green Umbrella IceStart™ is a Surface Applied Supplementary Cementitious Material Admixture, the first treatment of a two-part Surface Applied Admixture Cure and Densification System, to be followed by IceStop™. Used only on *@EarlyAge* concrete, Cure & Cap is a chemical and mechanical process applied during concrete placement and power troweling and completed with IceCap™ as soon as 3 days after placement. For use as a sealer without the use of IceStart and IceStop, conventional 28 day wait period is recommended prior to installation.

Application of IceCap™ cannot begin until after the substrate has been auto-scrubbed and is clean of contaminants and debris.

1) Apply IceCap™ S.O.L.O. (spray-on, leave-on) @1,200 SF per gallon on a clean and dry substrate using a low-pressure, high-volume manual or battery-powered commercial sprayer. Apply only when temperatures are 40°F and rising, not exceeding 90°F.

2) Applicate for even coverage using a weighted T-bar and a clean applicator pad, changing and/or cleaning frequently during application. Avoid puddling, allow dwell time of 10 minutes for full reaction. Allow to air dry. Repeat, applying a second coat.

3) Following the second application of IceCap™ to the clean substrate, burnish using a concrete weighted, ultra high speed, propane powered burnisher equipped with a GreenGloss pad.

Note: Avoid application where there may be standing water within 48 hours after final burnish.

***@MatureAge* Concrete:**
Green Umbrella IceCap may be used as a stand-alone concrete sealer and surface protectant applied to concrete aged 28 days and beyond to prevent penetration of contaminants, enhance surface integrity and aesthetic. IceCap increases near-surface durability and chemical resistance improving wear, maintainability and enhancing gloss and appearance.

@Profile & Polishing:
For sealers better suited to concrete that has been abrasively polished use Green Umbrella Interior MicroFilm or ColorShield.

ARCHITECTURAL APPLICATIONS

Ideal for **Interior or Exterior** *use on exposed* horizontal architectural concrete surfaces. Superior performance in integral color applications. Demanding Applications, warehouse/distribution centers, food service, parking decks, garages, hospitals, or similar, retail spaces & showrooms, restaurants, business offices, lobby areas, museums, municipalities, airports, hotels, schools, fire-stations, almost all exposed concrete surfaces.

FEATURES & BENEFITS

Primary Features & Benefits of One of The Industry's Most Versatile Penetrating Wear Guards

- Design of Architectural Exposed Concrete Floors
- Enhanced reflectivity
- Repairable Gloss without Refinement
- Superior contaminant intrusion prevention
- Product Permanence - Insoluble - Will Not Wash Out
- Unique GUNanoInside Technology - Superior Performance
- Resists Penetration of Oils, Chemicals and Stain-Causing contaminants
- Does not support mildew, mold or fungi growth
- Partially Reactive - Not Just A "Shell Surface"
- 100% Absorption - Reducing Waste
- Low Nano-Solids Formulation, Deeper Penetration
- Reduces porosity, Resisting Damage From Freeze/Thaw - Increasing LifeCycle
- Enhances the natural beauty of concrete
- Efficacy & Performance Not Affected By UV Exposure
- Prevents Dangerous Off-Dusting - Safer for Building Occupants
- Improves Ease of Maintenance
- USDA/FDA approved for incidental food contact
- Requires no rinsing & disposal and will not gel on surface — can be allowed to air dry
- Decreases black tire marking from lift trucks and equipment — improving appearance
- Stands up to heavy abrasion and foot traffic while providing excellent slip resistance
- Does Not Contribute to ASR
- Creates A Breathable Surface - No Flake Or Peel
- Gloss Enhancing - Improving Natural Appearance
- Requires No Rinsing & Disposal - Cuts Environmental Impact
- Cuts Labor - Polish look finish
- Abrasion-Resistant To Foot & Wheeled Traffic - Increases Life Cycle
- S.O.L.O. Application & Brief Dwell Time - Cuts Downtime
- Non-Sodium - Does Not Contribute To Alkali-Silica Reaction
- No Efflorescence or Whitening Common With Conventional Hardeners - Cuts Downtime
- Low VOC - Environmentally Responsible
- Non-Resinous Polymer Formulation - Prevents Yellowing & Tire Marking
- R.T.U.** - Ready To Use - Reducing Labor

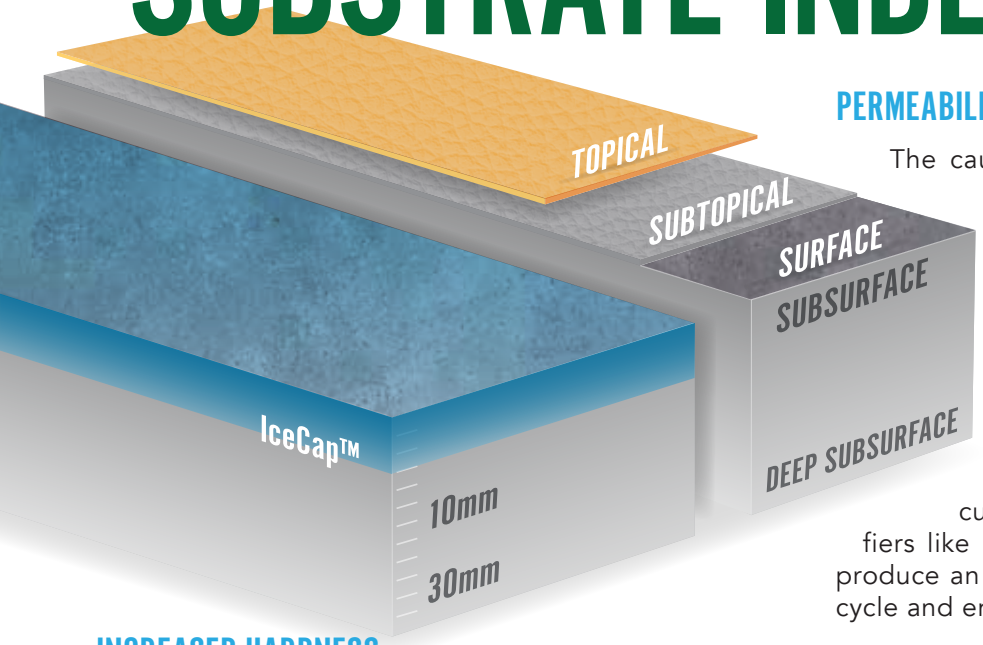
Additional Benefits

@EarlyAge™
- Designed for early sealing and concrete protection - No Slab Whitening
- Special Formulation - Concrete Color Enhancer and Gloss Enhancer
- No Concrete Sweating After Application - Reducing Downtime
- Deep Subsurface Penetration & Bond
- When combined with IceStart™ and IceStop™ industry leading *@EarlyAge* cure, contaminant protection, repellency and resistance

@MatureAge™
- Revitalize Damaged Floors
- Adds Exceptional Gloss

GREENUMBRELLA™

SUBSTRATE INDEX



INCREASED HARDNESS

A superior stand-alone sealer. In its natural state, the active ingredients in IceCap™ improve the clarity, enhance and outperform the contaminant resistance of conventional formulations without the need for harmful VOC's or the limitations of high solids, 'wax-like' sealant products. The surface, subsurface and deep subsurface will be more durable with IceCap™ due to its unique ability for "Capping the Concrete".

S.O.L.O. APPLICATION AND DWELL TIME

Green Umbrella IceCap™ is applied one coat at a time, with 2-3 applications used for maximum contaminant rejection. It does not require a lengthy 24-48 hour cure time after application, like many concrete sealers. A Spray-On Leave-On treatment, with only one surface application needed. There is no scrubbing, gelling, or re-wetting of the surface. The initial 10 minute dwell time is all that is required. Once dried, the reaction is permanent within the surface and should be burnished using a UHS propane burnisher and a Green Umbrella recommended pad before opening to all traffic.

PENETRATION

A modern nano formulation allows IceCap™ to penetrate and bond at both a subsurface and surface level, filling voids thanks to nano structure and low solids content. All concrete matrices are not the same - thus the depth of penetration will vary. Frequently, IceCap™ penetrates deeper than conventional 'sealant' products, penetrating and bonding below the surface. Penetration and strong bond create maximum protection against water or contaminant penetration, preserving the concrete wear surface and integral color.

PERMEABILITY: PROTECTION & PREVENTION

The causes of the surface weakening of concrete vary. Concrete permeability plays a large role in the integrity of concrete from surface to deep subsurface. The detrimental effects of chloride, salt and de-icers are well documented. Arguably, the primary reason concrete treatments are applied is in an attempt to increase impermeability and prevent freeze/thaw damage. Green Umbrella IceCap™ will work in harmony with integrally troweled cure - IceStart and IceStop or Crossover densifiers like DryShield to eliminate weak porosities and produce an umbrella of protection for an increased life cycle and environmental protection.

NOT A CANDY SHELL

Concrete treatments are designed for surface protection and lifecycle enhancement. IceCap™ delivers to all concrete projects maximum protection "Capping the Concrete", without negative side-effects common to conventional film-forming, high solids and/or high VOC content sealers. Many conventional sealers create a shallow, thin, "shell" of protection at the surface; once this "candy shell" is breached by abrasion and wear, the sealer begins to chip, flake or peel exposing the original surface, leading to failure or increased maintenance cost due to a lack of protection. Negative lifecycle impact may be exaggerated when using antiquated sealers. IceCap™ provides industry-leading surface and subsurface protection without washing out during routine maintenance or failing due to de-lamination or traffic patterns.

LIQUID RESISTANCE & BREATHABLE

IceCap™ is not a water-proofer but increases hydrophobicity. It is formulated to bond and fill concrete voids. The unique formulation is resistant to surface water and waterborne containments. After it has cured it is insoluble - completely reacted. IceCap™ shines as a clarity enhancer at the near surface and thanks to a penetrating, sub-surface bond, provides much needed protection in harsh environments. The unique breathability allows for the passage of moisture through the slab *@EarlyAge* when protection is critical early in construction or where there are moisture issues that necessitate a breathable surface. IceCap™ is an economical S.O.L.O. sealing treatment solution outperforming high VOC concrete sealing options while being better for the environment.

TECHNICAL INFORMATION

Formulation	Penetrating Reactive Interior Exterior Microfinish for Non-Profiled Surfaces
Chemical Family	Hybrid Colloidal
Substrate Location	Subsurface
Appearance	Milky White
Odor	None
Film Forming	Hybrid Partial
Active Ingredients	100%
Type	Wearguard
pH	11
Boiling Point	212F
Packaging	5-gal bucket, 55-gal drum, 275-gal tote
Shelf Life	2 Years
VOC	<50 g/L
Freezing Point	32F

Safety Data Sheets for all products are available at www.GreenUmbrellaSystems.com

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 IceCap™ 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 IceCap™ has an average coverage rate of 1,200 SF per gallon. First coat will be 800-1,2000 SF depending on initial concrete porosity and/or surface texture. Apply during @EarlyAge after integrally troweled cure. Typical installations include a minimum of two applications. Apply a third application within 24 hours after the first two applications for maximum protection. Coverage depends on the porosity of the concrete substrate, time, temperature, and humidity.

SPECIFICATIONS

GreenUmbrella® CUTSPEC™
Simplified Product Spec

EarlyAge Conventional Concrete(28 days or earlier):
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3) Following the second application of IceCap™ to the clean substrate, burnish using a concrete weighted, ultra high speed, propane powered burnisher equipped with a GreenGloss pad.
Note: Avoid application where there may be standing water within 48 hours after final burnish.

@MatureAge Conventional Concrete that is not Abrasively Polished (28 days or later): Green Umbrella IceCap may be used as a stand-alone concrete sealer and surface protectant applied to concrete aged 28 days and beyond to prevent penetration of contaminants, enhance surface integrity and aesthetic. IceCap increases near-surface durability and chemical resistance improving wear, maintainability and enhancing gloss and appearance.

@MatureAge Conventional Concrete To Be Abrasively Polished: Not recommended.

For certified installers and comprehensive manufacturer instructions, visit www.GreenUmbrellaSystems.com

CSI SPECIFICATIONS

DIVISION 03 & 09
Section 03 35 09
Concrete Cure and Profile Finishing Systems
Systems@EarlyAge Concrete

Systems@MatureAge Concrete
Section 03 3543 & 03 3536
Products @EarlyAge & MatureAge Concrete
Coordinate with section:
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 033900
Concrete Curing
Section 079200
Joint Sealer
Section 096200
Specialty Flooring
Section 0962630
Decorative Concrete Toppings

For CSI Specifications Contact a Consultant:
info@greenumbrellasystems.com

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

The specifier must keep in mind several construction disciplines: the concrete mix design, concrete placement, concrete finishing and concrete maintenance program. We encourage you 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. 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 , qualified flatwork and polishing CRAFTSMEN.

All of its components follow the Nine Fundamentals of Green Polishing (www.theconcrete9.com) that educate a specifier on these principles. Consulting ACI Guide to Decorative Concrete (ACI 310R-19) can be helpful.

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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 (www.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-360-10: Guide to Design of Slabs-on-Ground

For EarlyAge concrete to be Abrasively Polished: Considerations should be given to specifying the following products for an economical, sustainable and maintainable concrete floor 1) Green Umbrella IceStart™ (cure) & IceStop™ (fixative) during and immediately after concrete placement & finishing. 2) Green Umbrella FiberLite™ to reduce plastic cracking and for strength. 3) Green Umbrella GreenCut™ for the highest quality Ra (roughness average) profile. 4) Green Umbrella DryShield™ for the hardening of concrete and prevention of concrete off-dusting. 5) Green Umbrella Interior MicroFilm™ for chloride intrusion and oxidation of colorant prevention and protection.

Specify equipment: It is critical to use the appropriate head pressure and rpm for concrete profiling, honing, and polishing. Green Umbrella recommends using equipment with propane or alternative fuels to reduce environmental impact. Cordless PHP equipment may allow for early access to projects with limited 3-Phase electricity connections and eliminates the hazards common to dry grinding or attempting a wet process using electric equipment. Specify high-productivity machines with sufficient equipment on large projects to meet production goals and not adversely affect project timeline and/or other trades. Specify equipment that meets LEED Building Operations and Maintenance (LEED O+M) requirements. Green Umbrella grinders (Green Grinder, GreenXtreme or RTPMAX) and Green Umbrella Low Profile Edgers process the entire floor, with the same abrasive profile within 1⁄4 inch of walls or under shelving. Specify the same matrix of all cutting abrasives, eliminating the inconsistencies found on projects when a mix of manufacturer brands is used.

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 Interior MicroFilm™ 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 IceCap™ is easy and quick to apply, requiring less labor. IceCap™ 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.

Optimize Energy Performance

- Polished concrete allows the advantage of utilizing the thermal mass of concrete in heating and cooling.
- Polished concrete increases light reflectivity, amplifying the benefit of ambient (natural) lighting, and reducing process loads from light fixtures.

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

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

Life Cycle Cost

- Sources show polished concrete to be the lowest life-cost flooring option available

TESTING

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

For GreenIce Cure & Cap System

ASTM C494 / C494M - 19 Standard Specification for Chemical Admixtures for Concrete

Water Loss

ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials

ASTM C156 Water Loss [from a Mortar Specimen] Through Liquid Membrane- Forming Curing Compounds for Concrete

ASTM 309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete

Abrasion Resistance, Strength, Hardness

ASTM C779 / C779M 12 " Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces"

ASTM C944: "Abrasion Resistance of Concrete by Rotating-Cutter Method"

BS EN 13892-4: 2002 Standard Methods of test for screed materials. Determination of wear resistance "BCA"
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)

Chemical Resistance Of Finishes

ASTM 1308 Standard Test Method For Effect Of Household Chemicals On Clear And Pigmented Organic Finishes (Aviation Fluid Resistance With Green Umbrella GreenIce Cure & Profile System)

Mohs Scale Of Mineral Hardness

ACI 302 Standard Guide For Concrete Floor And Slab Construction

FDA COMPLIANT

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

PROFILE, HONE & POLISHING EQUIPMENT

Green Umbrella propane equipment meets LEED v4.1 Operations and Maintenance Guidelines. Green Umbrella uses propane-fueled equipment to save the owner as much as 50 cents a square foot in electrical cost for three-phase and 220-volt equipment often used by PHP contractors. In itself, propane is not a direct greenhouse gas contributor and is one of the world's most widely used alternative fuels. Electric power adds 80% more CO2 into our atmosphere in comparison to propane. Propane can be a safe, clean, and efficient fuel.
All Green Umbrella propane equipment should have the following: CARB and EPA certified engines to meet their strict guidelines for low CO2 emissions.
ESDS (emissions shut down system) — machines are manufactured to incorporate a 3-way catalytic muffler to lower CO2 emissions and an ESDS that monitors the engine for irregularities and automatically shuts the machine down if emissions rise.

High Productivity Rider Grinder - processes larger areas in less time

GreenXtreme by Green Umbrella
• Heavy duty commercial floor grinder/polisher or equivalent
• Minimum 933 pounds head pressure
• 77-inch grinding width
• Minimum 8000 square feet per hour production rate.
• Wet abrasive compatible
Variable Abrasive Concrete Grinder — profiles, hones, and mechanically polishes floors

RTPMAX by Green Umbrella
• Heavy duty commercial concrete profile/hone/polish equipped Power Trowel
• Minimum 933 pounds head pressure
• 6'-10' feet (72" - 112" inches) profile width
• Double Pass 8,000 square feet per hour production rate.
• Wet abrasive compatible
• Passive or Active Planetary
• Reduced Operator Fatigue

Variable Abrasive Concrete Grinder — profiles, hones, and mechanically polishes floors

GreenGrinder/Polisher by Green Umbrella
• Propane-powered, heavy-duty commercial floor wet abrasive compatible
• Minimum 785 pounds head pressure
• CARB/EPA approved.
• 30-inch grinding width
• 12 abrasives, counter-clockwise planetary rotation
• Minimum 800 square feet per hour production rate.
• Provide a minimum of two units on site

Variable Abrasive Concrete Edge Grinder — processes floors within a 1⁄4 inch of wall

GreenEdger by Green Umbrella
• Propane-powered, heavy-duty commercial floor edge grinder/polisher
• Wet abrasive compatible
• Minimum 165 pounds head pressure
• CARB/EPA approved
• 1/4 inch cut to the wall
• Four or six abrasive head, 640 RPM abrasive rotation
• Provide a minimum of one unit on site

Weighted Concrete Burnisher — removes unreacted material, promotes cross-linking and enhances gloss.

GreenGloss - Concrete weighted UHS Burnisher, by Green Umbrella
• Propane-powered, UHS Burnisher CARB/EPA approved.
• 27 or 39-inch burnishing width
• Weighted Head
• Minimum 2000 RPM
• Provide a minimum of one unit on site

Walk Behind Slurry Recovery Machine — cleans

between abrasive steps to prevent contamination. Important: not all floor scrubbers are effective in slurry recovery.

- Green Umbrella recommended slurry recovery vacuum.
- **Auto scrubber** similar to Tomcat or Nilfisk-Advance with accessible concrete clean-out
- Minimum 500-pound head pressure
- Water application and minimum 30-gallon recovery tank

Abrasives for PHP Equipment — cut concrete substrate in a sequence of steps.

- Stock removal, profiling, honing and polishing abrasives, hybrid bond abrasives by Green Umbrella
- Match hardness of abrasives to the hardness of concrete

Prep Equipment

- Power Washer on low psi
- Industrial Waterbroom by WaterMiser or equivalent, up to 180 PSI of water

Application Equipment

Hand or Battery-powered Pump Sprayer Applicator — used to apply the product evenly and consistently

- By Green Umbrella, Patriot Sprayers, or equivalent (Non-Metal Canister)
- Maximum tip pressure 40 psi
- T-bar with blended applicator — evenly distributes product sprayed on concrete substrate

All products can be seen at GreenUmbrellaSystems.com

End Note to Specifier

Note to Applicator:

PRODUCT PLACEMENT

***@EarlyAge* Conventional Concrete (28 days or earlier):** Place IceCap™ on GreenIce Cure System (IceStart & IceStop) post concrete finishing after three days. Proper substrate cleaning and product application must be observed.

***@EarlyAge* GreenIce Cure System Concrete to be Abrasively Polished:** N/A

***@MatureAge* Conventional Concrete that is not Abrasively Polished (28 days or later):** Place IceCap™ on an adequately prepared substrate as noted above - 'Substrate Condition'.

***@MatureAge* Abrasively Profiled Concrete:** N/A

Note to Applicator & Specifier:

TIME, TEMPERATURE & HUMIDITY

For a chemical reaction to take place successfully, time must be allocated for the full reaction. Likewise, when applying Green Umbrella® IceCap™ to concrete, there must be an adequate amount of dwell time for the reaction to occur. Proper dwell time will help to achieve the best result. For IceCap™ to penetrate the substrate effectively, the temperature should be 40°F (4°C) and rising for several hours from application forward. If temperatures are lower than recommended, the chemistry may take much longer to react and penetrate the concrete substrate. If the temperature exceeds the recommended maximum of 95°F (35°C), or if conditions are windy, the chemistry could react and dry before penetrating the substrate.

Humidity also plays a role in dry time. The product applied to a dry slab of concrete 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 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 staging of concrete treatments to eliminate needless downtime. The use of on-site hygrometers and thermometers can provide meaningful data to facilitate treatment application success.

Time to traffic: For best results - light foot traffic when dry, or after 1 hour. Wheeled traffic after 3 hours.

High Temperature or High Wind Application [(Above 95°F or 35°C) (Consult ACI 305R-20 for Wind Advisory)] @EarlyAge Next-day & @MatureAge Concrete Hot Slabs:

(Consult ACI 305R-20 for Wind Advisory)

Reduce slab temperature: Hydrate a hot slab to reduce the surface temperature, preventing flash drying of IceCap™. If exposed to high temperatures, apply IceCap™ when temperatures are at their most moderate.

Apply after Reduced Slab Temperature: Test before full application. Apply IceCap™ with a S.O.L.O. application at the rate of 1,200 SF per gallon, more if needed, and disperse using a GU recommended, dedicated and clean T-Bar. Unlike some other Green Umbrella surface treatments - **Do Not** mist with water or re-apply to a partially wet, treated surface.

Moisture/Precipitation Note: Do Not apply IceCap™ on an exposed concrete substrate when standing water may appear within 72 hours after application.

PRODUCT APPLICATION

Mock-up: *Perform a mock-up to identify variables or contaminants that may be incompatible with IceCap™. Manufacturer recommended dwell-time and dry-time must be adhered to for all applications for accurate performance testing.*

Two technicians are recommended for installation: Technician One - Apply using a GU recommended, non-metal sprayer - dedicated, clean, dry, with a conical tip. Introduce sufficient material to be worked evenly into and across the concrete surface. Technician Two - Use a clean T-bar to evenly applicate, working the material over the surface, moving excess material ahead, without producing puddling. Periodically check applicator head for cleanliness and change as necessary. Dirty applicator heads may be cleaned with water and immediately re-used.

Spray and apply, keeping a wet edge without walking or tracking over any completed areas, work toward the exit. Introduce and apply evenly to achieve proper dwell time and reactivity. Do not attempt to re-wet or re-apply treatment to quick dry areas.

Following the application of the first coat, ALWAYS apply a second coat. The second application will be 'thinner' but is not a 'spiff coat'. The second application will remain wet for 15-20 minutes before drying.

Following the second application, burnish using a propane powered UHS (ultra high speed) burnisher properly equipped with a GreenGloss thick black pad. Never use a 'diamond impregnated' pad. For best results, use a concrete weighted GreenGloss burnisher.

For maximum protection 24 hours after the second coat, apply a THIRD application of IceCap™. Follow the methodology of the second coat AND burnish using a propane powered, UHS, concrete-weighted burnisher.

Mixing: None. Packaged R.T.U. **Do not mix or dilute.**

Sprayer: Treatment-dedicated, clean, non-metal, with a conical, drip-free tip. Pump-up, back-pack, handheld, battery, or pneumatically powered. (See equipment section.)

Applicator: Treatment-dedicated, new or clean pad on a heavyweight GU T-bar. Use clean, dedicated applicator pads that are cleaned frequently throughout large square footage installations.

***@EarlyAge* Concrete:**
Use Green Umbrella IceStart™ cure and IceStop™ fixative during and immediately after concrete placement & finishing to cure the concrete.
Important: For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.

1. Apply S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 1,200 SF per gallon.
2. Distribute treatment with a new, clean, GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 10 minutes for full reaction.
3. Allow product to air dry. If treatment is not drying within one or two hours, blowers or fans may reduce dry time.
4. After first coat has dried thoroughly apply a second application.
5. Spray and Distribute treatment with a clean, GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 30 minutes for full reaction. Allow to dry.
6. Note: Secondary coats may dry as soon as 10-20 minutes but are NOT 'spiff coats'.
7. Allow product to air dry. If treatment is not drying, indirect blowers or fans may reduce dry time.
8. Once the first two applications of IceCap™ are completely dry - Burnish using a propane-powered, UHS (ultra-high speed) burnisher equipped with a GreenGloss™ burnishing pad. NEVER burnish using 'diamond impregnated' pads.
9. For maximum protection apply a THIRD coat 24 hours after the first two applications and burnish.

***@MatureAge* Conventional Concrete:**
Important: For high temperature or windy application,

see Note to Applicator: Time, Temp. & Humidity.

1. Apply S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 1,200 SF per gallon.
2. Distribute treatment with a new, clean, GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 10 minutes for full reaction.
3. Allow product to air dry. If treatment is not drying within one or two hours, blowers or fans may reduce dry time.
4. After first coat has dried thoroughly apply a second application.
5. Spray and Distribute treatment with a clean, GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 30 minutes for full reaction. Allow to dry.
6. **Note:** Secondary coats may dry as soon as 10-20 minutes but are NOT 'spiff coats'.
7. Allow product to air dry. If treatment is not drying, indirect blowers or fans may reduce dry time.
8. Once the first two applications of IceCap™ are completely dry - Burnish using a propane-powered, UHS (ultra-high speed) burnisher equipped with a GreenGloss™ burnishing pad. NEVER burnish using 'diamond impregnated' pads.
9. For maximum protection apply a THIRD coat 24 hours after the first two applications and burnish.

***@MatureAge* Concrete To Be Abrasively Polished:**

For Green Umbrella® densifiers or sealers for concrete that will be abrasively profiled please visit: www.GreenUmbrellaSystems.com

Damaged and Weak Surface Floors

See Green Umbrella treatment(s): DryShield or PCR.

HEALTH & SAFETY

Clean Up And Disposal:

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
- For PHP floors, periodically burnish with a weighted, high-speed propane burnisher using Green Umbrella GreenGloss™ pad to remove dirt buildup and restore gloss

Facility Maintenance Schedule and Training - Green Umbrella Health Sentinel
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 CON- CRETE 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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