TECHNICAL DATA SHEET

DEEP SUBSURFACE / PH NEUTRAL DENSIFIER / HIGHLY ABRASION RESISTANT

GREENUMBRELLA®

DRYSHIELD

FILLING THE VOIDS. Green Umbrella® DryShield™ is an environmentally friendly concrete hardener and densifier. Reaching deep within the subsurface, DryShield creates more than a conventional shell surface. The unique formulation is insoluble, fully reactive, and pH neutral—resulting in a bond within concrete that is harder, denser, and less porous while allowing maximum penetration of concrete colorants. A breathable, transparent, odorless solution specially formulated to be a CrossOver™ densifier. Designed for application *@EarlyAge™*, *@Profile&Polish™*, or *@MatureAge™* concrete. Unlike conventional hardeners, DryShield is a single application S.O.L.O™* treatment that requires no scrubbing or mopping. It does not require a pH balance of wastewater if rinsed. DryShield produces a substrate that will stain less and wear longer, reducing maintenance frequency and extending the concrete's life cycle.

Basic Use

Green Umbrella® DryShield is part of our CrossOver™ concrete treatments meeting Architectural Concrete design professionals' versatile product demands for an interior and exterior concrete densifier. DryShield basic use is a *Penetrating Completely Reactive Hydrophilic Insoluble Nano Densifier*. Used in applications where basic densifiers and hardeners are specified but where an *@EalyAge* application, quick to traffic and highly abrasion resistant concrete densifier is desired.

For Early Age Concrete: Green Umbrella DryShield can be used as a stand-alone concrete hardener and densifier at the time of placement to prevent concrete off-dusting and disintegration. Unlike conventional formulations, this early application has unparalleled success, not requiring the concrete to cure 28 days before application.

Mature Age Concrete: Green Umbrella DryShield can be used as a stand-alone hydrophobic concrete hardener and densifier to prevent concrete off-dusting and disintegration for concrete matured beyond 28 days.

Profile & Polishing: Green Umbrella DryShield can be used as part of a Green Umbrella System *(Green Umbrella Architectural Polished Concrete described in Note to Specifier section)*. Designed as a foundation treatment, Green Umbrella DryShield is introduced between the profiling and honing steps of a profile, hone, polish (PHP) process resulting in abrasion resistance with a natural appearance. A CrossOver densifier that can be applied within a Green Umbrella profile & polish system *@EarlyAge* or *@MatureAge* achieving the desired features & benefits, regardless of the age of the concrete.

Architectural Applications

Ideal for **interior** or **exterior**, vertical or horizontal in Demanding Applications; warehouse/distribution centers, food service, parking decks, garages, hospitals, or similar pigment Decorative Color Applications; 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 One of The Industry's Most Versatile CrossOver Densifier *@EarlyAge™ @MatureAge™ @Profile&Polish™*

- Insoluble - Product Permanence - Will Not Wash Out
- Deepest Subsurface Penetration - 10X Deeper Than Conventional Hardeners
- Nano Silica Formulation - Cuts Environmental Impact
- Unique Nano Technology - Superior Performance
- Superior Stand-Alone Concrete Hardener - 2X Hardness Of Conventional Hardeners
- Prevents Dangerous Off-Dusting - Safer For Building Occupants

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Occupants

• Resists Penetration Of Oils, Chemicals and Staining Materials *(Low Viscosity, High Detergent and Chlorinated Oils Require MaxDefense™) - Improves Appearance

• Ph Neutral - Non-Hazardous

• 100 Percent Reactive - Creates More Than A Shell Surface

• 100 Percent Absorbed - Cuts Waste

• Low Nano Solids Formulation, Deeper Penetration Reduces Porosity - Increased Life Cycle

• Creates A Breathable Surface - No Flake Or Peel

• Natural Appearance - Reduces Cleaning Schedule

• Requires No Rinsing & Disposal - Cuts Environmental Impact

• Simply Air Dry - Cuts Labor

• Highly 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

• No VOC's - Environmentally Responsible

• Non-Resinous Polymer Formulation - Prevents Yellowing & Tire Marking

• 2-3X Greater Coverage Rate Of Conventional Hardeners - Cuts Labor

• R.T.U.** Treatment — Cuts 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

@Profile&Polish™

• Designed for Wet Profile, Hone and Polish Process - No Slab Whitening

• Combines with Nano Colorant - One Step Color Densifier

• Special Formulation - Increased Concrete Colorant Retention

• No Concrete Sweating After Application - Prevents Long Downtime for Slab Recovery

• Deeply Subsurface - Not Cut Off During Profiling, Honing & Polishing Stage

*Spray-On, Leave-On **Ready-To-Use

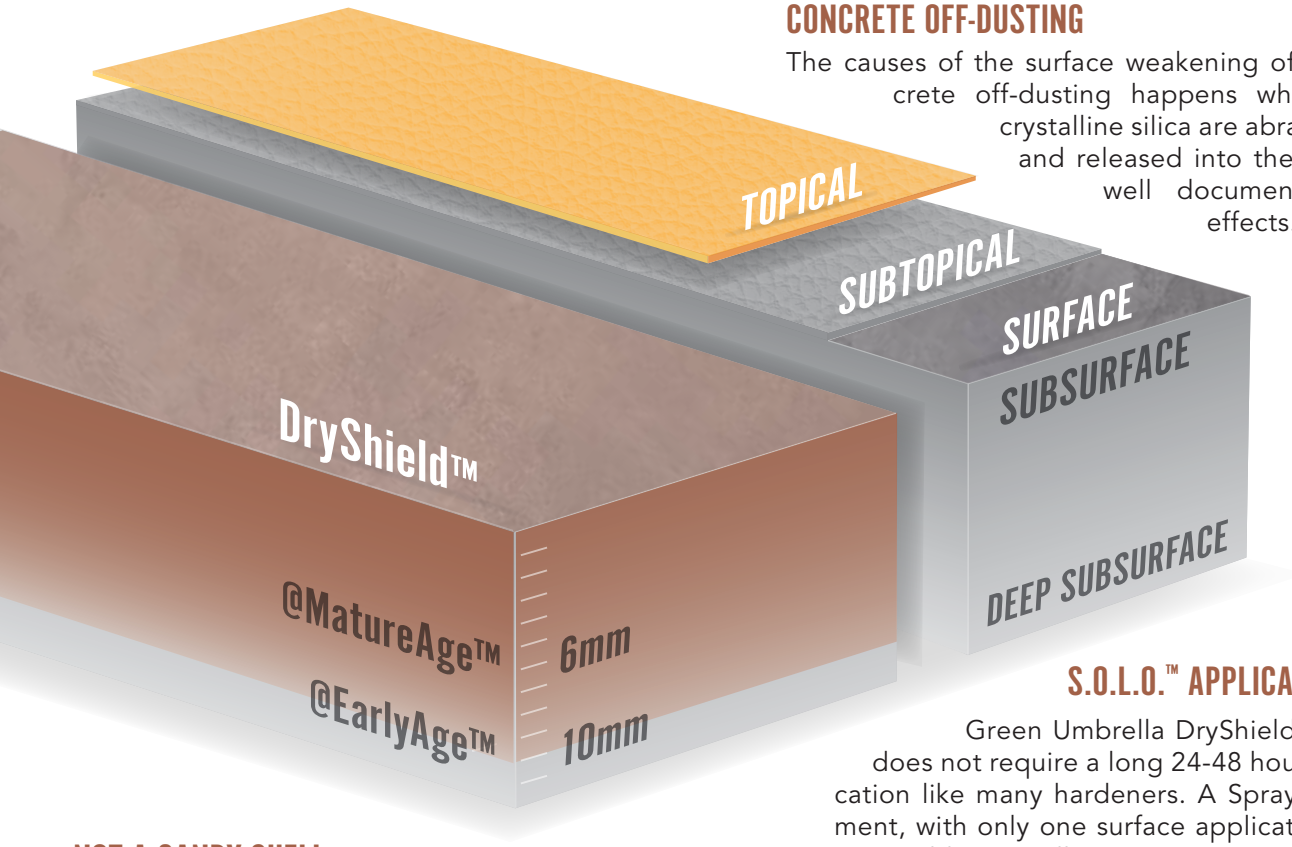
Technical Information Table

Formulation	Penetrating Completely Reactive Hydrophilic Insoluble Densifier
Chemical Family	Amorphous Silica Substrate
Location	Deep Subsurface
Appearance	Translucent
Odor	None
Film Forming	No
Active Ingredients	100%
Type	Hardener/Densifier
pH	6.2
Boiling Point	212°F/100°C
Packaging	5-gal bucket, 55-gal drum, 275-gal tote
Shelf Life	2 years
VOC (grams/liters)	0
Freezing Point	32°F/0°C (Do Not Allow to Freeze)

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

GREENUMBRELLA™

SUBSTRATE INDEX



CONCRETE OFF-DUSTING

The causes of the surface weakening of concrete vary. Concrete off-dusting happens when fine particles of crystalline silica are abraded from the surface and released into the air we breathe. It is well documented its detrimental effects. Arguably, the primary reason concrete treatments are applied is to prevent off-dusting. Green Umbrella DryShield "Fills the Voids" to eliminate weak porosities and produce an umbrella of protection for future use.

S.O.L.O.™ APPLICATION AND DWELL TIME

Green Umbrella DryShield is applied once and does not require a long 24-48 hour set time after application like many hardeners. 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 30 minute dwell time with a wet surface is all that is needed. Once dried, the reaction is permanent within the surface & open to traffic. No re-wetting. Insoluble.

NOT A CANDY SHELL

Concrete treatments are designed for surface protection. Unfortunately, many conventional hardeners create a shallow, thin shell of hardness at the sub-surface. When this "candy shell" is breached by abrasion, a softer than original surface may be exposed; this could be exaggerated if these products are introduced at an early age. DryShield does not work as a desiccant, absorbing water of convenience during an early age, creating this phenomenon. DryShield provides industry-leading surface and in-depth subsurface protection without scavenging water at early age or washing out during routine maintenance.

INCREASED HARDNESS

A superior stand-alone densifier. In its natural state, the active ingredients in DryShield yield 2x the hardness of conventional formulations. While abrasion resistance figures are frequently exaggerated, and concrete matrices vary, often DryShield provides a 40-80% increase in hardness. In a double-blind test following ASTM C779-05, DryShield outperformed three conventional hardeners. The surface, subsurface, and deep sub-surface will be harder and more durable with DryShield because it “Fills the Voids”

PENETRATION

DryShield "Fills the Voids" at the surface, due to its nano design, penetrates and fills the deep subsurface. All concrete matrices are not the same; thus, the depth of penetration will vary. Often, DryShield penetrates 2-3x deeper than conventional products. Penetrating and reacting as deep as 10mm below the surface. This allows for abrasive profiling without the densifier being cut off shortly after application, featuring DryShield as a true CrossOver™ densifier option *@Profile&Polish™*.

APPLY SAME DAY AS POUR

No calcium-hydroxide reaction is required; DryShield can be applied the same day concrete is finished. No conventional 28-day downtime, featuring a CrossOver™ densifier option *@EarlyAge™* application, saving construction time that can be devoted to other trades while protecting the surface during the most abusive time of its life cycle.

Manufacture & 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 Sizes:
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 DryShield 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: DryShield has an average coverage rate of 400 SF per gallon. Under normal conditions, only one application is necessary. Coverage depends on the porosity of the concrete substrate, time, temperature, and humidity. On PHP floors, the coverage rate may be increased to a maximum of 650 SF per gallon only when used one a GreenIce Cure floor with GreenCut™ cutting agent as part of a Green Umbrella Architectural Concrete System.

Specifications

GreenUmbrella® CUTSPEC™:
Simplified Product Spec

EarlyAge Conventional Concrete (28 days or earlier):
DryShield™ by Green Umbrella® of Rochester, NY (844) 200-7336 is a R.T.U. (Ready to Use), S.O.L.O. (Spray-On, Leave-On), *Penetrating Completely Reactive Insoluble Nano Densifier* silica solution to strengthen, seal and densify the concrete surface. Clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before processing. Place on *@EarlyAge™* concrete, the same day of concrete placement and finishing; once the concrete is hard enough for walking or as specified in the construction process. DryShield™ is NOT a cure & seal. Apply DryShield™ in temperatures 40 (and rising) -95°F (4-35°C) at 400-500 SF per gallon. Keep wet for a dwell time of 30 minutes. Allow to air dry. *(For certified installers and manufacturer instructions visit www.GreenUmbrellaSystems.com)*

EarlyAge Concrete To Be Abrasively Trowel Polished:
DryShield™ by Green Umbrella® of Rochester, NY (844) 200-7336 is a R.T.U. (Ready to Use), S.O.L.O. (Spray-On, Leave-On), *Penetrating Completely Reactive Insoluble Nano Densifier* silica solution to strengthen, seal and densify the concrete surface. Clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before processing. For an abrasively trowel polished, processed using a power trowel machine adapted for concrete polishing. Place on *@EarlyAge™* concrete a few days after concrete placement and finishing or as specified in the construction process by Green Umbrella. Use an Integrally Troweled Concrete Placement (ITCP) process 1) During concrete placement & after finishing, use Green Umbrella IceStart™ cure and IceStop concrete cure system 2) Wet profile and hone with GC™ abrasives with GreenCut™ cutting agent. 3) Optional: Apply Green Umbrella NanoDye™ for colorant 4) Apply DryShield™ in temperatures 40 (and rising) -95°F (4-35°C) at 400-500 SF per gallon. Keep wet for a dwell time of 30 minutes. Allow to air dry. 5) Hone and polish to desired finish with GC™ abrasives. 6) Apply Green Umbrella Microfilm™ - a *penetrating, reactive, interior micro-finish for profiled surfaces* - at a rate of 1000-1200 SF per gallon. 7) Burnish with GreenGloss™ concrete-weighted, high-speed burnisher GreenGloss™ pads. *(For certified installers and manufacturer instructions, visit www.GreenUmbrellaSystems.com)*

MatureAge Conventional Concrete (28 days or earlier):
DryShield™ by Green Umbrella® of Rochester, NY (844) 200-7336 is a R.T.U. (Ready to Use), S.O.L.O. (Spray-On, Leave-On), *Penetrating Completely Reactive Insoluble Nano Densifier* silica solution to strengthen, seal and densify the concrete surface. Clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before processing. Place on *@MatureAge™* concrete, the same day of concrete placement and finishing; once the concrete is hard enough for walking or as specified in the construction process. DryShield™ is NOT a cure & seal. Apply DryShield™ in temperatures 40 (and rising) -95°F (4-35°C) at 400-500 SF per gallon. Keep wet for a dwell time of 30 minutes. Allow to air dry. *(For certified installers and manufacturer instructions visit www.GreenUmbrellaSystems.com)*

MatureAge Conventional Concrete To Be Abrasively Polished:
DryShield™ by Green Umbrella® of Rochester, NY (844)

200-7336 is a R.T.U. (Ready to Use), S.O.L.O. (Spray-On, Leave-On), *Penetrating Completely Reactive Insoluble Nano Densifier* silica solution to strengthen, seal and densify the concrete surface. Clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before processing. For a profiled, honed, and polished (PHP) concrete floor processed using a variable abrasive, planetary grinding machine to remove existing coatings, surface imperfections, and flattening the concrete slab. Place on *@MatureAge™* concrete as specified in the construction process by Green Umbrella. 1) Wet profile and hone with GC™ abrasives with GreenCut™ cutting agent. 2) Optional: Apply Green Umbrella NanoDye™ for colorant 3) Apply DryShield™ in temperatures 40 (and rising) -95°F (4-35°C) at 400-500 SF per gallon. Keep wet for a dwell time of 30 minutes. Allow to air dry. 4) Hone and polish to desired finish with GC™ abrasives. 5) Apply Green Umbrella Microfilm™ - *a penetrating, reactive, interior micro-finish for profiled surfaces* - at a rate of 1000-1200 SF per gallon. 6) Burnish with GreenGloss™ concrete-weighted, high-speed burnisher GreenGloss™ pads. *(For certified installers and manufacturer instructions, visit www.GreenUmbrellaSystems.com)*

CSI Specifications

DIVISION 03 & 09
Section 03 3536
EarlyAge Concrete
Mature Concrete or Retrofit
Section 03 3543 & 03 3536
Abrasive Polish
Coordinate with section:
Section 03 2400 - Synthetic Fiber Reinforcement
Section 03 3119 - Shrinkage Compensating Concrete
Section 03 3550 - Integrally Colored Concrete
Section 03 3000 - Cast place concrete
Section 03 3500 - Concrete Finishing
Section 03 3900 - Concrete Curing
Section 07 9200 - Joint Sealer

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

Note to Specifier

Green Umbrella Architectural Concrete System treatments like Green Umbrella® DryShield™ are just part of a successfully specified concrete floor.

The specifier must keep in mind several construction disciplines: the concrete mix design, concrete placement, concrete finishing, and finally, the "polisher" or the PHP craftsman. 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 finally, 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. The GUAC System is not simply opening the concrete substrate and applying a resinous polymer sealer. Specify an environmentally responsible mechanical process that involves processing the floor wet to avoid silicosis issues for the installers and the future occupants and *@EarlyAge* to improve construction downtime. The process uses a progression of abrasive grits with a wet cut agent Green Umbrella GreenCut™ on a machine built for a wet profile & hone process. The use of water enables a higher-quality cut to the floor. The wet profile system is well supported in the industry for the best clarity, quickest aggregate exposure, and time-savings, among other advantages.

Designing the canvas or 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.

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 and SECTION 03 35 09 – CONCRETE CURE AND PROFILE FINISHING SYSTEMS for surfaces selected for polished concrete. Concrete specification SECTION 03 35 43 - POLISHED CONCRETE FINISHING should be referenced.

Mix design should not exceed 20% slag or fly ash content, if at all, for clarity of polishing and color application ease. Due to many factors, pre-qualification of contractors should be in place and required in submittals. Concrete specifications may require ACI flatwork certification. A quality control plan, pre-construction conference, and mock-up are all critical.

For EarlyAge concrete to be Abrasively Polished: Considerations should be given to specifying the following products for an economical & sustainable 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 DryShield for the hardening of concrete and prevention of concrete off-dusting.

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 and alternative fuels to reduce environmental impact. Cordless PHP equipment may allow for early access to projects with limited 220 volt electricity and eliminates the hazards common to dry grinding or attempting wet cutting 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 or GreenXtreme) and Green Umbrella Low Profile Edger 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 hardening of the surface and are 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.

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 DryShield is easy and quick to apply, requiring less labor. DryShield has zero 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.

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

Chemical Resistance Of Finishes
Green Umbrella MaxDefense™ System with DryShield
Chemical resistance to JP-8+100 fuel - 0.1% weight gain
Chemical resistance to 30 wt motor oil — 0.007% weight gain
Chemical resistance to Skydrol 500 B-4 - 0.05% weight gain

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 MaxDefense™ System)
ACI 302 Standard Guide For Concrete Floor And Slab Construction
Mohs Scale Of Mineral Hardness
USDA Compliant
FDA Compliant

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 than does 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
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, 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-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

Product Placement

EarlyAge Conventional Concrete:
DryShield may be placed on new concrete the same day of pour after concrete placement and finishing, once the concrete is hard for walking, after joint cutting, or later on in the construction process. DryShield is not a cure & seal. If used *@EarlyAge*, use other curing methods such as Green Umbrella IceStart™ (cure) & IceStop™ (fixative).

EarlyAge Concrete to be Abrasively Polished: DryShield is placed after the last wet abrasive. This is conventionally after the first honing cut, and can change according to the class of grind and application of colorants. However, any colorant must be applied before DryShield and an abrasive cut must be performed before surface treatments can be applied.

MatureAge Conventional Concrete:
DryShield may be placed on existing concrete. For best penetration, thoroughly clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before application. Use GreenClean and Degreaser™ Do not use citric, d-limonene, or acidic cleaners.

MatureAge Conventional Concrete to be Abrasively Polished:
Green Umbrella DryShield may be placed after the last wet cut. This is conventionally after the first honing cut. For best penetration, thoroughly clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before application Use GreenClean and Degreaser™. Do not use citric, d-limonene, or acidic cleaners. However, any colorant must be applied before DryShield, and an abrasive cut must be performed before surface treatments can be applied.

Note to Applicator:

Time, Temperature & Humidity

For a chemical reaction to take place successfully, time must be allocated for the full reaction. Likewise, when applying Green Umbrella DryShield to concrete, there must be an adequate amount of dwell time for the reaction to take place. Doing so will help to achieve the best result.

For DryShield to effectively penetrate the substrate, the temperature should not be less than 40°F (4°C) for several hours after application. 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. In such circumstances, keep floors hydrated with water for recommended dwell time.

Humidity also plays a role in the 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. 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.

Time for traffic: For best results, light foot traffic when dry or after 1 hour. Wheeled traffic and profiling after 3 hours.

High Temperature or Windy (Consult ACI 305R-20 for Wind Advisory) Application Over (95°F or 35°C) *@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 so flash drying of DryShield does not occur. Hydrate for an hour in the most arid of conditions, disperse any puddles, then immediately proceed to high temperature and high wind instructions below.

Apply DryShield at 400 SF per gallon, more if needed. If necessary, mist the slab with sufficient water at 20 minutes to achieve the required 30 minutes of wet surface dwell time.

Product Application *(Review Placement and Applicator Note Above)*

Perform mock-up to establish variables or contaminants on the slab that may be incompatible with DryShield.

EarlyAge Concrete (28 days or earlier):

1. Important: For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.
2. Green Umbrella DryShield is R.T.U. and should be applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 400-500 SF per gallon.
3. Do Not Broom Same-Day *@EarlyAge* concrete: If necessary to distribute treatment, use a GU T-Bar to ensure uniform coverage, or disperse puddles. Do not agitate.
4. Keep substrate wet, adding more product as needed, allowing for a dwell time of 30 minutes for full reaction.
5. Allow product to air dry. If the product is not drying within one or two hours, blowers or fans may be used to reduce dry time.
6. If unreacted material would exist, remove it with a broom after the product has completely dried.

Note: Though additional benefit could be had, it is not intended to apply Green Umbrella DryShield in addition to Green Umbrella IceStart™ (cure) and IceStop™ (fixative) unless being abrasively polished. Green Umbrella DryShield should not be used in place of either of these products. DryShield is not a cure & seal. If used *@EarlyAge* you must use other curing methods such as Green Umbrella IceStart™ (cure) and IceStop™ (fixative).

EarlyAge Concrete To Be Abrasively Polished:

1. Use Green Umbrella IceStart™ cure and IceStop™ fixative during and immediately after concrete placement & finishing.
2. Hone abrasively to achieve a specified or desired class of grind with GreenCut™ cutting agent and GC™ abrasives.
3. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes.
4. For color application: Green Umbrella NanoDye™ colorants should be applied before proceeding to the next step as directed. Dye application using acetone as a carrier is recommended when using DryShield.
5. **Important:** For high temperature or windy application, see *Note to Applicator: Time, Temp. & Humidity.*
6. DryShield is R.T.U. and should be applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 400-500 sf per gallon. No need for agitation.
7. If necessary to break the surface tension, distribute treatment with a new, clean, GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 30 minutes for full reaction.
8. Allow product to air dry. If treatment is not drying within one or two hours, blowers or fans may reduce dry time.
9. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes. Proceed to honing abrasive cut. This is required if a sub-topical or penetrating surface treatment is applied for DryShield to bond properly.

10. Double-scrub with an auto-scrubber, equipped with GU recommended pads/brushes.
11. Proceed to polish abrasive cut, if specified.
12. Apply surface treatment such as Green Umbrella Microfilm™ according to instructions.

Note: If a concrete slab is abrasively opened, Green Umbrella DryShield should be applied even when Green Umbrella IceStart™ (cure) and IceStop™ (fixative) were used during placement.

MatureAge Concrete (28 days or later):
1. **Important:** For high temperature or windy application see *Note to Applicator: Time, Temp. & Humidity.*
2. Green Umbrella DryShield is R.T.U. and should be applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 400-500 SF per gallon. Note time and temp above.
3. If necessary to break the surface tension, or to disperse puddles, distribute the product with a clean, dedicated GU T-Bar or exploded-tip bristle broom to ensure uniform coverage—no need for agitation.
4. Keep substrate wet, adding more product as needed, allowing for a dwell time of 30 minutes for full reaction.
5. Allow product to air dry. If the product is not drying for an hour or two, the use of blowers or fans can reduce dry time. No gelling or rinsing required.
6. If unreacted material would exist, remove it with a broom after the product has

MatureAge Concrete To Be Abrasively Polished (PHP):
1. Profile or Hone abrasively to achieve a specified or desired class of grind with GreenCut™ cutting agent and GC™ abrasives.
2. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes.
3. For Color application: Green Umbrella NanoDye™ colorant should be applied before proceeding to the next step as directed. However, dye application using acetone as a carrier is recommended.
4. **Important:** For high temperature or windy application, see *Note to Applicator: Time, Temp. & Humidity.*
5. DryShield is R.T.U. and should be applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 400-500 SF per gallon. No need for agitation. If necessary to break the surface tension, or to remove puddles, distribute the product with a clean, dedicated GU T-Bar or exploded-tip bristle broom to ensure uniform coverage—no need for agitation.
6. Allow product to air dry. If the product is not drying within a few hours, blowers or fans may reduce dry time.
7. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes.
8. Proceed to abrasive cut. This is required if a sub-topical or penetrating surface treatment is applied for DryShield to bond properly.
9. Double-scrub with an auto-scrubber equipped.
10. Proceed to polish abrasive cut, if specified.
11. Apply surface treatment such as Green Umbrella Microfilm™ according to instructions.

Note: If a concrete slab is abrasively opened, Green Umbrella DryShield should be applied even when Green Umbrella IceStart™ (cure) and IceStop™ (fixative) were used during placement.

Damaged and Weak Surface Floors
For the most damaged concrete floors, DryShield applications method can be changed to maximize the potential of the floor. DryShield is not an overlayment or concrete repair and does not replace poorly placed or damaged concrete. However, when concrete surfaces have weakened, damaged, or are in disrepair, the following steps may be taken to restore surface density, abrasion resistance, and hardness.

Test the floor with a MOHS hardness instrument. Hydrate the concrete using water and allow it to dwell and penetrate for a minimum of 2-3 hours. This will open water channels in the near-surface to the deep subsurface providing a path for DryShield, taking advantage of its Hydrophilic properties. Apply DryShield at a maximum of 300 square feet per gallon. Allow to air dry. (Fans/Air Movers may be used to accelerate dry time if downtime is a concern.) For best results, allow several days to pass. Retest with MOHS instrument. If desired, reapply DryShield at 500 square feet per gallon to increase surface performance if necessary. (Waiting will enable more water to exit the slab and allow a second application to fill the voids created.)

Important: Clean with DeepClean with Slip-Resist™ and retest to determine if the floor has been salvaged.

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.

Irritant:

1	HEALTH
0	FIRE
0	REACTIVITY/INSTABILITY
C	PERSONAL PROTECTION
X	IRRITANT

IRRITANT

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

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.

FOR PROFESSIONAL USE ONLY

TECHNICAL DATA SHEET

SUBSURFACE / PENETRATING-REACTIVE / REPAIRABLE ENHANCEMENT

GREENUMBRELLA®

INTERIOR MICROFILM

PRODUCT DESCRIPTION

Green Umbrella® Interior MicroFilm™ is R.T.U., repairable impregnating micro-treatment for abrasively profiled architectural concrete floors. Interior MicroFilm™ is a sub-topical, reactive, penetrating, non-resinous polymer that forms a breathable surface to seal and protect densified, hardened, and color-treated floors with a high gloss finish - even for the most aggressive environments. Unlike conventional products, this micro-finish will not peel. Interior Microfilm™ is the stain-guard component of the Green Umbrella Defense Systems, providing industry-leading ASTM-1308 resistance to aviation oils and surface contaminants. Featuring the highest abrasion resistance performance as a wearguard, Interior Microfilm™ with GUnanoInside™ extends concrete's life cycle while maintaining gloss and clarity.

BASIC USE

Green Umbrella® Interior MicroFilm™ is part of the line of versatile concrete treatments meeting design professionals' versatile for an interior repairable wearguard for abrasively processed concrete. Interior MicroFilm™ basic use is as a *Sub-surface Penetrating, Completely Reactive, Contaminant Resistant, Insoluble, Nano-Protectant*. The nano-enhanced treatment increases surface abrasion as a wear guard and enhances impermeability as a stain guard while enhancing gloss and developing profile clarity. The hard bond to concrete produces a protective layer that prevents contaminants from penetrating, making floors easier to clean and maintain. Use in applications where mechanically profiled concrete is specified and where a water resistant, odorless, and high-performance concrete protectant is desired. Strongly recommended for use when surface colorants are being applied to polished concrete.

***@EarlyAge* Concrete:** For sealers better suited to basic broom finished or steel troweled *@EarlyAge* Concrete see Green Umbrella IceCap or Exterior MicroFilm.

***@MatureAge* Concrete:** For sealers better suited to basic broom finished or steel troweled *@MatureAge* Concrete see Green Umbrella IceCap, Exterior MicroFilm, or ColorShield.

@Profile&Polish: Green Umbrella Interior MicroFilm™ is used as part of a Green Umbrella System (Green Umbrella Architectural Polished Concrete described in Note to Specifier section). Introduce as the final treatment applied to protect following a mechanical profile, hone, polish (PHP) process resulting in abrasion resistance, colorfastness, contaminant protection, and an enhanced brilliant appearance. Interior MicroFilm™ will then work to preserve the mechanically polished concrete - increasing near-surface durability and chemical resistance. When used after a process that includes using the GreenIce Cure System and GreenCut™-- Interior MicroFilm™, it is not restricted to a 28 day wait for *@EarlyAge* Concrete to "cure." Instead, apply as soon as 96 hours after place and finish following @Profile&Polishing to concrete that will be free from standing water for 72 hours.

ARCHITECTURAL APPLICATIONS

Ideal for **interior** use, horizontal decorative concrete, mechanically profiled and polished surfaces. Superior performance in decorative 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, hospitals, schools, fire-stations, almost all polished concrete surfaces.

FEATURES & BENEFITS

Primary Features & Benefits of One of The Industry's Most Versatile Concrete Hybrid Subsurface and Surface treatment

TECHNICAL INFORMATION

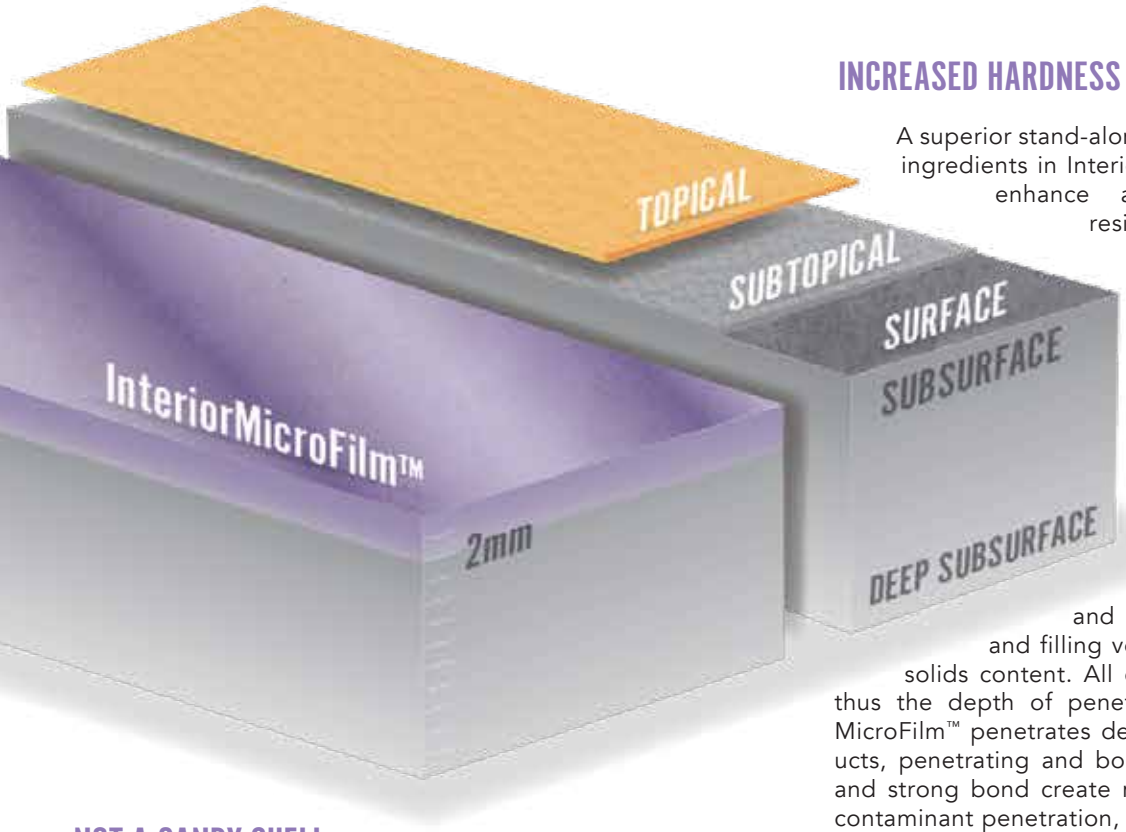
Formulation	Subsurface Penetrating Partially Reactive Insoluble Repairable Nano Protectant and Enhancer
Chemical Family	Hybrid Colloidal
Substrate Location	Subsurface
Appearance	Milky White
Odor	None
Film Forming	Hybrid Partial
Active Ingredients	100%
Type	Partially Reactive, Contiguous Impregnating MicroFilm
pH	11
Boiling Point	212°F
Packaging	5-gal bucket, 55-gal drum, 275-gal tote
Shelf Life	2 years
VOC(grams/liters)	0 g/L
Freezing Point	32°F

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

- DESIGN OF ABRASIVELY POLISHED ARCHITECTURAL FLOORS
- ENHANCE CLARITY OF CONCRETE
- 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
- SIMPLY AIR DRY - CUTS LABOR
- 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
- ZERO VOC - ENVIRONMENTALLY RESPONSIBLE
- NON-RESINOUS POLYMER FORMULATION - PREVENTS YELLOWING & TIRE MARKING
- R.T.U.** - READY TO USE - REDUCING LABOR

GREENUMBRELLA™

SUBSTRATE INDEX



NOT A CANDY SHELL

Concrete treatments are designed for surface protection. Interior MicroFilm™ delivers to all concrete projects maximum protection without negative side-effects common to conventional film-forming and high solids content guard/sealers. Many conventional sealers create a shallow, thin, "shell" of protection at the surface; once this "candy shell" is breached by abrasion, wear, chips, flakes or peels, the unprotected original surface may be exposed, leading to failure or increased maintenance cost. Negative lifecycle impact may be exaggerated when using topical or 'wax-like' sealers. Interior MicroFilm™ 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

Interior MicroFilm™ 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; Yet, after it has cured it is insoluble - completely reacted. Interior MicroFilm™ 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. Interior MicroFilm™ is an economical S.O.L.O. sealing treatment solution outperforming high VOC concrete sealing options while being better for the environment.

INCREASED HARDNESS

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

PENETRATION

Interior MicroFilm™ "Develops Profile Clarity" at both a subsurface and surface level, penetrating, bonding and 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, Interior MicroFilm™ penetrates deeper than conventional 'guard' products, penetrating and bonding below the surface. Penetration and strong bond create maximum protection against water or contaminant penetration, preserving not only the concrete wear surface but also color and mechanical polish. In polished applications, including those with color, it adheres to and encapsulates concrete treatments within the subsurface providing protection and preserving color.

S.O.L.O.™ APPLICATION AND DWELL TIME

Green Umbrella Interior MicroFilm™ is applied one coat at a time, with 3 applications used in connection with DryShield™ & Shield & Enhance™ 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 30 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

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 Interior MicroFilm™ will work in harmony with densifiers like DryShield and Shield & Enhance to eliminate weak porosities and produce an umbrella of protection for an increased life cycle and environmental protection.

ADDITIONAL BENEFITS

@Profile&Polish:

- DESIGNED FOR WET PROFILE, HONE AND POLISH PROCESSING - 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 DRYSHIELD™ AND SHIELD & ENHANCE™ INDUSTRY LEADING CONTAMINANT PROTECTION, REPELLENCY AND RESISTANCE

MANUFACTURE & 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 Interior MicroFilm™ 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 Interior MicroFilm™ has an average coverage rate of 3,000 SF per gallon. First coat will be 1000-3000 SF depending on what Green Umbrella Systems is used Apply during @Profile&Polish after polishing. 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):**

N/A unless using the Green Umbrella GreenIce Cure and Profile System.

***@MatureAge* Conventional Concrete that is not Abrasively Polished (28 days or later):**

Do Not Use for Non-profiled floors.

***@MatureAge* Conventional Concrete To Be Abrasively Polished:** Interior MicroFilm™ by Green Umbrella® of Rochester, NY (844) 200-7336 is a R.T.U. (Ready to Use), S.O.L.O. (Spray-On, Leave-On), sub-surface Penetrating, Completely Reactive, Contaminant Resistant, Insoluble, Nano-Protectant solution to strengthen, seal, and protect the concrete surface and subsurface. Clean and sweep all debris and potential contaminants—including sealers, wax, coatings, and oil or food spills—before processing. For a profiled, honed, and polished (PHP) concrete floor - process using a variable abrasive, (propane power preferred) planetary grinding machine to remove existing coatings, surface imperfections, and flatten the concrete slab. Place on *@MatureAge™* concrete as specified in the construction process by Green Umbrella. 1) Wet profile and hone with GC™ abrasives with GreenCut™ cutting agent. 2) Optional for MaxDefense with Color: Apply Green Umbrella NanoDye™ for colorant 3) Apply DryShield™ in temperatures 40°F (4°C) [and rising] up to 95°F (35°C) at 400-800 SF per gallon. Keep wet for a dwell time of 30 minutes. Allow to air dry. 4) Hone to desired finish with GC™ abrasives. Autoscrub using soft bristle brushes, green or red pads to remove any excess material or potential contaminants. 5) Apply Shield & Enhance™ in temperatures 40°F (4°C) [and rising] up to 95°F (35°C) at 400-800 SF per gallon. Keep wet for a dwell time of 30 minutes. Allow to air dry. 6) Polish to desired finish with GCPolish-

Plus™ abrasives. Autoscrub using soft bristle brushes, green or red pads to remove any excess material or potential contaminants. 7) Apply Green Umbrella Micro-Film™ - a penetrating, reactive, interior micro-finish for profiled surfaces - at a rate of 1500-2500 SF per gallon, first coat. Air dry and apply second coat. 6) Burnish with GreenGloss™ concrete-weighted, high-speed burnisher equipped with GreenGloss™ pads. *(For certified installers and manufacturer instructions, visit www.GreenUmbrellaSystems.com)*

CSI SPECIFICATIONS

DIVISION 03 & 09

Section 03 35 09
Concrete Cure and Profile Finishing Systems

Systems*@EarlyAge* Concrete
Section 03 3543
Polished Concrete Finishing Systems

Systems*@MatureAge* Concrete
Section 03 3543 & 03 3536
Polished Concrete Finishes

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® Interior MicroFilm™ 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 finally, 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 canvas or 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 joint- less, 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 proj- ects, 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 designat- ed 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 speci- fier 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-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 Interior MicroFilm™ is easy and quick to apply, requiring less labor. Interior MicroFilm™ 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
• 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
• 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

Chemical Resistance Of Finishes

Green Umbrella MaxDefense™ System
This is Internal Microfilm with Dryshield, (Densifier) and Shield and Enhance (Salt,Color,StainGuard)
Chemical resistance to JP-8+100 fuel - 0.1% weight gain
Chemical resistance to 30 wt motor oil — 0.007% weight gain
Chemical resistance to Skydrol 500 B-4 - 0.05% weight gain

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)

Mohs Scale Of Mineral Hardness
USDA Compliant with regulations 9 CFR, Section 416.4 and the Food Safety Inspection Services, "Sanitation Performance Compliance Guide". FDA Compliant
FDA Compliant

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

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 www.GreenUmbrellaSystems.com

End of Note to Specifier.

PRODUCT PLACEMENT

***@EarlyAge* Conventional Concrete:** Place Interior MicroFilm™ post concrete finishing seven days or later, as a stand-alone hardener, hydrophobic and chloride intrusion resisting treatment.

***@EarlyAge* Concrete to be Abrasively Polished:** Interior MicroFilm™ is placed after the last wet hone abrasive. This is conventionally after the profiling cut(s), and can change according to the class of grind and application of colorants and DryShield™. However, any colorant must be applied before Interior MicroFilm™ and a polish cut must be performed after Interior MicroFilm ™, prior to the application of Interior MicroFilm™.

***@EarlyAge* GreenIce Cure System Concrete to be Abrasively Polished:** Place Interior MicroFilm™ on GreenIce Cure System (IceStart & IceStop) post concrete finishing after three days. Proper substrate cleaning and product application must be observed.

***@MatureAge* Conventional Concrete:**
Place Interior MicroFilm™ on an adequately prepared substrate as *noted above - 'Substrate Condition'.*

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® Interior MicroFilm™ 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 Interior MicroFilm™ 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 for 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 Interior MicroFilm™. Hydrate for an hour in the most arid of conditions, clean and dry any surface moisture, then immediately proceed to high temperature and high wind instructions below.

Apply after Reduced Slab Temperature: Test before full application. Apply Interior MicroFilm™ with a single S.O.L.O. application at the rate of 400 SF per gallon, more if needed, and disperse using a GU recommended, dedicated and clean T-Bar on troweled slabs. Unlike some other Green Umbrella Densifiers - **Do Not** mist with water or re-apply to a partially wet, treated surface.

PRODUCT APPLICATION

(Review Placement and Applicator Note Above)

Mock-up: *Perform a mock-up to identify variables or contaminants that may be incompatible with Interior MicroFilm™. 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 the THIRD application of Interior MicroFilm™. 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 To Be Abrasively Polished:**

1. Use Green Umbrella IceStart™ cure and IceStop™ fixative during and immediately after concrete placement & finishing to cure the concrete.
2. Profile abrasively to achieve a specified or desired class of grind with GreenCut™ cutting agent and BigStock™, GCX™ and/or GCFusion™ abrasives.
3. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes.
4. For color application: Green Umbrella NanoDye™ colorants should be applied before proceeding to the next step as directed. Dye application using acetone as a carrier is recommended when using DryShield™.
5. Important: For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.
6. Densify with DryShield™ R.T.U. and applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 600-800 SF per gallon.
7. Distribute treatment with a new, clean GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 30 minutes for complete reaction.
8. Allow product to air dry. If treatment is not drying within one or two hours, blowers or fans may reduce dry time.
9. Hone using GCFusion™ or PolishPlus™ abrasives using a wet method.
10. Auto scrub using GU recommended pads/brushes and GreenClean™ or GreenClean & Degreaser™.
11. If a chloride screen and color oxidation protection is desired: Apply Green Umbrella Shield & Enhance™ R.T.U., S.O.L.O. to a clean, dry surface using a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 600-800 SF per gallon.
12. Distribute treatment with a new, 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. Polish - Proceed to Polishing abrasive cut using GU PolishPlus™ abrasives.
13. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes and using Green Umbrella DeepClean & Maintain™ to prepare a contaminant-free surface for MicroFilm™.
14. Apply micro-surface treatment Green Umbrella MicroFilm™ R.T.U. and applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 1,000-3,000 SF per gallon.
15. Distribute treatment with a new, clean GU T-Bar to ensure uniform coverage. Keep substrate wet; the initial application will be thicker, with an average dwell time of 20-30 minutes for full penetration and bond. The second and Third coats may dry as soon as 10-20 minutes but are NOT 'spiff coats'.
16. Allow product to air dry. If treatment is not drying, indirect blowers or fans may reduce dry time.
17. Once the first two applications of Interior MicroFilm™ 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.

18. For maximum protection, apply a THIRD coat 24 hours after the first two applications and burnish.

Note: When an *@EarlyAge* concrete slab is abrasively cut, Green Umbrella DryShield™ should be applied, even when IceStart™ and IceStop™ were used during placement.

***@MatureAge* Conventional Concrete:**

For Green Umbrella!® densifiers or sealers for conventional concrete, please visit:

www.GreenUmbrellaSystems.com

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

1. From a clean substrate, free of protrusions - Profile abrasively to achieve a specified or desired class of grind with GreenCut™ cutting agent and BigStock™, GCX™ and/or GCFusion™ abrasives.
2. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes.
3. For color application: Green Umbrella NanoDye™ colorants should be applied before proceeding to the next step as directed. Dye application using acetone as a carrier is recommended when using DryShield™.
4. Important: For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.
5. Densify with DryShield™ R.T.U. and 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 600-800 SF per gallon.
6. Distribute treatment with a new, clean GU T-Bar to ensure uniform coverage. Keep substrate wet, allowing for a dwell time of 30 minutes for full reaction.
7. Allow product to air dry. If treatment is not drying within one or two hours, blowers or fans may reduce dry time.
8. Hone using GCFusion™ or PolishPlus™ abrasives using a wet method.
9. Auto scrub using GU recommended pads/brushes and GreenClean™ or GreenClean & Degreaser™.
10. If a chloride screen and color oxidation protection is desired: Apply Green Umbrella Shield & Enhance™ R.T.U., S.O.L.O. to a clean, dry surface using a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 600-800 SF per gallon.
11. Distribute treatment with a new, 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. Polish - Proceed to Polishing abrasive cut using GU PolishPlus™ abrasives.
12. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes and using Green Umbrella DeepClean & Maintain™ to prepare a contaminant free surface for MicroFilm™.
13. Apply micro-surface treatment Green Umbrella MicroFilm™ R.T.U. and applied S.O.L.O. to a clean surface with a dedicated GU recommended (non-metal) sprayer evenly on the surface at a rate of 1,000-3,000 SF per gallon.
14. Distribute treatment with a new, clean, GU T-Bar to ensure uniform coverage. Keep substrate wet, the initial application will be thicker, with an average dwell time of 20-30 minutes for full penetration and bond. Second and Third coats may dry as soon as 10-20 minutes but are NOT 'spiff coats'.
15. Allow product to air dry. If treatment is not drying, indirect blowers or fans may reduce dry time.
16. Once the first two applications of Interior MicroFilm™ 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.
17. For maximum protection, apply a THIRD coat 24 hours after the first two applications and burnish.

Damaged and Weak Surface Floors

See Green Umbrella treatment: 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
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.

FOR PROFESSIONAL USE ONLY

CUTSHEET

SUBSURFACE / CUTTING AGENT / SURFACE REFINEMENT

GREENUMBRELLA®

GreenCut

The Foundation of the Profiled Floor

Green Umbrella® GreenCut™ is a neutral, nano-surface profiling agent that teams with slurry produced during wet profiling. The rounded nano-structure surface refinement treatment advances abrasive profiling. As part of the GreenCut Abrasive Profile™ System, silica-based nano-marbles mill and fill the substrate during profiling, removing, and rolling stock beneath abrasive tooling. This cutting action removes high spots using the edge of the abrasive in a way never before achieved, acting as a lapping compound. GreenCut™ impacts the surface so that a reduction from an average seven-abrasive process to two or three. GreenCut™ should be used on every abrasively profiled project— cutting labor, downtime and environmental impact. The use of Green Umbrella's liquid cutting agent produces a polished concrete that cannot be replicated in quality, durability, or quantifiable Ra. GreenCut™ is free of harmful acids, damaging formulations, polymer-based solids, and surfactants. Produce a superior floor value, increasing concrete substrate quality with an ultra-fine surface refinement not possible using equipment and abrasive tooling alone. GreenCut™ produces a microscope worthy profile, with a smoothness that can be felt by touch after the first cut.

CUT LABOR

- S.O.L.O.[1] applications and R.T.U.[2]
- Eliminates multiple abrasive process cuts
- Fewer laborers needed

CUT DOWNTIME

- Eliminates several abrasive changes
- Finish floor on sooner
- Higher quality floor, less repairs during installation

CUT ENVIRONMENTAL IMPACT

- Eliminates airborne contaminants
- Fewer and longer lasting abrasives
- Product coverage rate increase

[1]Spray-On, Leave-On [2]Ready-To-Use

VERSATILE ARCHITECTURAL APPLICATIONS

Ideal for **interior** or **exterior**, in applications wherever abrasively profiled, honed and polish architectural concrete is performed; warehouse/distribution centers, food service, parking decks, garages, hospitals, or similar & specifically for dye and pigment Decorative Color Applications; retail spaces & showrooms, restaurants, business offices, lobby areas, museums, municipalities, airports, hospitals, schools, fire-stations, or most concrete surfaces.

EASY TO INSTALL - SIMPLE TO MAINTAIN

GreenCut is shipped R.T.U.[2], no mixing required. Hydrate section and easily apply a S.O.L.O.[1] application for a coverage rate of 400-500 SF per gallon. Rehydrate as needed, spreading with a soft-bristle broom. Proceed with a profile using GCX™ , GCFusion™ or GCEraser™ abrasives. Finish with honing abrasives and remove GreenCut with an auto-scrubber.

PACKAGING

SYSTEM SPECIFICATION

GREENUMBRELLA® FULLSPEC

844.200.7336
www.GreenUmbrellaSystems.com

GREENUMBRELLA® Architectural Concrete Systems

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