

# TECHNICAL DATA SHEET

DEEP SUBSURFACE / WATER RESISTANT DENSIFIER / HIGHLY ABRASION RESISTANT

## GREEN UMBRELLA® HYDROSHIELD

### RESISTING WATER & FILLING THE VOIDS

Green Umbrella HydroShield™ concrete hardener and densifier. Reaching deep within the subsurface, HydroShield creates more than a conventional shell surface. The unique formulation is resistant to surface water and breathable—resulting in a bond within the concrete that is stronger, denser, and less porous. A clear, odorless solution specially formulated to be a CrossOver™ densifier designed for application @EarlyAge™, @Profile&Polish™, or @MatureAge™ concrete. Unlike conventional hardeners, HydroShield is a S.O.L.O™\* treatment that requires one application and no scrubbing or mopping. HydroShield produces a substrate that will stain less and wear longer, reducing maintenance frequency and extending the concrete's life cycle.

#### Basic Use

Green Umbrella® HydroShield is part of our CrossOver™ concrete treatments meeting Architectural Concrete design professionals' versatile product demands for an interior and exterior concrete densifier. HydroShield basic use is a *Penetrating Completely Reactive Hydrophobic Insoluble Nano Densifier*. Used in applications where basic densifiers and hardeners are specified but where a water resistant, odorless, non-flammable application and high-performance concrete densifier is desired.

**EarlyAge Concrete:** Green Umbrella HydroShield can be used as a stand-alone hydrophobic 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.

**MatureAge Concrete:** Green Umbrella HydroShield can be used as a stand-alone hydrophobic concrete hardener and densifier to prevent concrete off-dusting and disinte-

gration for concrete matured beyond 28 days.

**Profile & Polishing:** Green Umbrella HydroShield 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 HydroShield 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 @Early-Age 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 & 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.

#### Features & Benefits

Primary Features & Benefits of One of The Industry's Most Versatile CrossOver Densifier @EarlyAge @MatureAge @Profile&Polish

- Hydrophobic Densifier and Hardener - Resistant to Water Penetration
- Water Resistance - Reduction of Waterborne and Surface Contaminants
- Instant Hydrophobicity - @EarlyAge Surface Weather Protection
- Instant Hydrophobicity - Surface Immediately Resistant To Water
- Breathable - Allows Water to Escape
- Insoluble - Product Permanence - Will Not Wash Out

- Deepest Subsurface Penetration - 10X Deeper Than Conventional Hardeners
- Nano Silica Formulation - Environmentally Responsible
- Unique Nano Technology - Superior Performance
- Superior Stand-Alone Concrete Hardener - 2X Hardness Of Conventional Hardeners
- Prevents Dangerous Off-Dusting - Safer For Building Occupants
- Resists Penetration Of Oils, Chemicals and Stain-Causing 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

### **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**

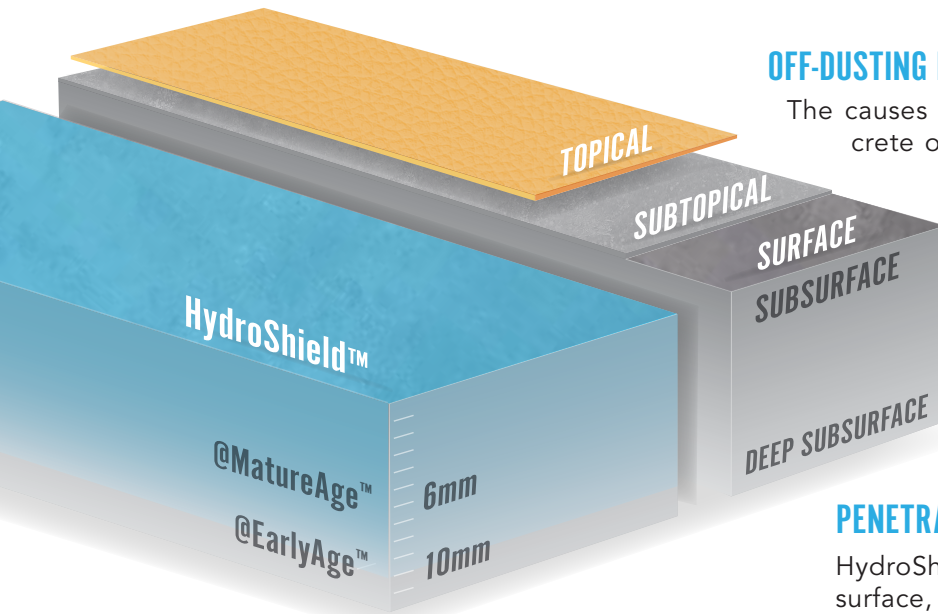
- Designed for Wet Profile, Hone and Polish Process - No Slab Whitening
- Combines with Nano Colorant - One Step Color Densifier
- Special Formulation - Increased Concrete Colorant Retention
- No Concrete Sweating After Application - Prevents Long Downtime for Slab Recovery
- Deeply Subsurface - Not Cut Off During Profiling, Honing & Polishing Stage

## **Technical Information Table**

Formulation.....	Penetrating Completely Reactive Hydrophobic 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](http://www.GreenUmbrellaSystems.com)**

# SUBSTRATE INDEX



## OFF-DUSTING PREVENTION & PROTECTION

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. The detrimental effects of concrete off-dusting are well documented. Arguably, the primary reason concrete treatments are applied is to prevent off-dusting. Green Umbrella HydroShield is "Filling the Voids" to eliminate weak porosities and produce an umbrella of protection for environmental protection and increased life-cycle.

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

Green Umbrella HydroShield is applied once and does not require a lengthy 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 is all that is required. Once dried, the reaction is permanent within the surface and may be open to all traffic.

## LIQUID RESISTANCE & BREATHABLE

HydroShield is not a water-proofer. It is formulated to fill the concrete voids by creating c-s-h (calcium silicate hydrate) through a permanent chemical reaction in the substrate with silica. The unique formulation is resistant to surface water and waterborne containments. Yet after it has cured it is insoluble, completely reacted. HydroShield increases the abrasion-resistance of the concrete while still allowing the passage of moisture through the slab @Early-Age when this protection is critical early in construction or where there are moisture issues that necessitate a breathable surface. HydroShield is an economical S.O.L.O. densifier treatment solution compared to higher performance floor options.

## APPLY SAME DAY AS POUR

No calcium-hydroxide reaction is required. HydroShield can be applied the same day concrete is finished as a densifier (not a cure & seal); no conventional 28-day downtime. A CrossOver densifier option @EarlyAge, saving construction time that can be devoted to other trades while protecting the surface during the most abusive time of its life cycle.

## PENETRATION

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

## NOT A CANDY SHELL

Concrete treatments are designed for surface protection. 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 may be exaggerated when these products are introduced @EarlyAge™. HydroShield does not react as a desiccant — absorbing water of convenience — @EarlyAge™ creating this phenomenon. HydroShield provides industry-leading surface and subsurface protection without scavenging water @EarlyAge™ or washing out during routine maintenance.

## INCREASED HARDNESS

A superior stand-alone densifier. In its natural state, the active ingredients in HydroShield yield 2x the hardness of conventional formulations. While abrasion resistance figures are frequently exaggerated and concrete matrices vary, often HydroShield often provides a 40-80% increase in hardness. In a double-blind test following ASTM C779-05, HydroShield outperformed three conventional hardeners. The surface, subsurface and deep subsurface will be harder and more durable with HydroShield due to its unique ability for "Resisting Water & Filling the Voids".

## 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 HydroShield 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 HydroShield has an average coverage rate of 400 SF per gallon. On PHP floors, the coverage rate may be increased to a max of 600 SF per gallon **only** when used with Green Umbrella GreenCut™ cutting agent as part of a Green Umbrella Architectural Concrete System. Under normal conditions, only one application is necessary. Coverage depends on the porosity of the concrete substrate, time, temperature, and humidity.

## Specifications

### GreenUmbrella® CUTSPEC™

### Simplified Product Spec

#### EarlyAge Conventional Concrete:

HydroShield™ 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 Hydrophobic 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. HydroShield™ is NOT a cure & seal. Apply HydroShield™ 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](http://www.GreenUmbrellaSystems.com))

#### EarlyAge Concrete To Be Abrasively Trowel Polished:

HydroShield™ 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 Hydrophobic 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 HydroShield™ 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](http://www.GreenUmbrellaSystems.com))

#### MatureAge Conventional Concrete (28 days or earlier):

HydroShield™ 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 Hydrophobic 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. HydroShield™ is NOT a cure & seal. Apply HydroShield™ 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](http://www.GreenUmbrellaSystems.com))

### **MatureAge Conventional Concrete To Be Abrasively Polished:**

HydroShield™ 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 Hydrophobic 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 HydroShield™ 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](http://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 032400 - Synthetic Fiber Reinforcement

Section 033119 - Shrinkage Compensating Concrete

Section 033550 - Integrally Colored Concrete

Section 033000 - Cast place concrete

Section 033500 - Concrete Finishing

Section 033900 - Concrete Curing

Section 079200 - Joint Sealer



For CSI Specifications Contact a Consultant:  
[info@greenumbrellasystems.com](mailto:info@greenumbrellasystems.com)

### **Note to Specifier**

Green Umbrella Architectural Concrete System treatments like Green Umbrella® HydroShield™ 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](http://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 033509 – 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 HydroShield 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 HydroShield is easy and quick to apply, requiring less labor. HydroShield 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.

### **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 HydroShield  
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](http://GreenUmbrellaSystems.com)

## End Note to Specifier

## Product Placement

### EarlyAge Conventional Concrete:

HydroShield 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. HydroShield 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:

HydroShield 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 HydroShield and an abrasive cut must be performed before surface treatments can be applied.

### MatureAge Conventional Concrete:

HydroShield 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 HydroShield 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 HydroShield, 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 HydroShield 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 HydroShield 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 HydroShield 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 HydroShield 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 HydroShield.*

### EarlyAge Concrete (28 days or earlier):

1. **Important:** For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.
2. Green Umbrella HydroShield 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 HydroShield in addition to Green Umbrella IceStart™ (cure) and IceStop™ (fixative) unless being abrasively polished. Green Umbrella HydroShield should not be used in place of either of these products. HydroShield 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 HydroShield. **Important: HydroShield is hydrophobic and will resist the introduction of any colorant once it is applied.**
5. **Important:** For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.
6. HydroShield 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 HydroShield 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 HydroShield 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 HydroShield 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. **Important: HydroShield is hydrophobic and will resist the introduction of any colorant once it is applied.**
4. **Important:** For high temperature or windy application, see *Note to Applicator: Time, Temp. & Humidity*.
5. HydroShield 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 HydroShield 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 HydroShield should be applied even when Green Umbrella IceStart™ (cure) and IceStop™ (fixative) were used during placement.

### Unusually Damaged and Weak Floors

For the most damaged concrete floors, the DryShield applications method can be changed to maximize the potential of the floor. DryShield is not an over layment 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 pick. 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 pick. If desired, reapply DryShield at 500 SF 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.

1	HEALTH
0	FIRE
0	REACTIVITY/INSTABILITY
C	PERSONAL PROTECTION
X	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](http://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](http://www.GreenUmbrellaSystems.com)

## **Warranty & Limitations**

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

It is the contractor's responsibility to follow all directions and requirements, as outlined in the Green Umbrella installation specifications. A completed Project Survey form or equivalent document outlining the steps and products used in the process must accompany this warranty request.

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

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