

GREEN UMBRELLA



TECHNICAL DATA SHEET

COLORSHIELD

GREEN UMBRELLA

Product Description

Green Umbrella™ ColorShield is an environmentally friendly concrete finish product that colors the floor it penetrates. Quick installation and easy to change colors make this the right product for your concrete floors. Green Umbrella™ ColorShield provides UV stable color with a glossy that can be used both inside and outside, beautifying concrete with or without diamond polishing. Green Umbrella™ ColorShield eliminates the need for acid stains, neutralizers and other hazardous waste disposal issues significantly reducing your impact on the environment.

Green Umbrella™ ColorShield is a responsible alternative for professionals concerned about the environmental impact of acid stains, sodium densifiers, and other harmful concrete treatments. Unlike many traditional products, Green Umbrella Color Shield is pHneutral, compliant with all state VOC standards, and contains no sodium or potassium which can contribute to Alkali Silica Reaction (ASR). The harder, denser, and less porous surface created by Green Umbrella Color Shield means the substrate will stain less and wear longer, reducing maintenance frequency and extending the life of concrete and masonry.

Basic Use

For Non GHP (Non Polished Concrete):
Green Umbrella™ ColorShield can be used as stand alone color concrete hardener. After final troweling is finished on the substrate Green Umbrella™ ColorShield can be applied. Proceed with wet cure or ASTM C-309.

For Ground Honed Polished Floors (Polished Concrete):
Green Umbrella™ ColorShield can be applied as part of GUEPC system (described in section below). Hardens the concrete for a longer shine. It is designed to be introduced into the substrate after grinding and honing steps as the foundation treatment for the floor. It has superior abrasion resistance and allows for a variety of colors to be concrete.

Varied Locations: Green Umbrella™ ColorShield is specially formulated for use in the DIY environment - homes garages and patios. It can also be used in assembly plants, warehouse/distribution centers, food service operations, retail stores & showrooms, parking decks, garages, airports, hospitals, and any other areas where concrete surfaces are maintained.

Features & Benefits

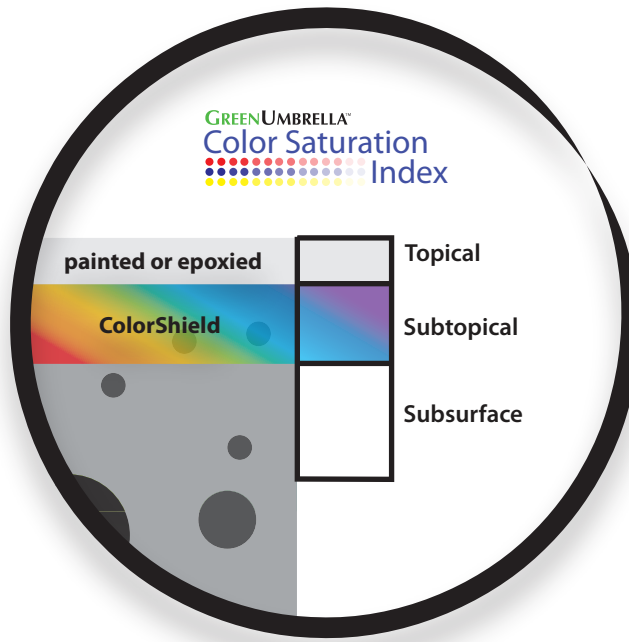
- Quick installation, easy to change colors or repair if necessary
- UV stable color - can be used both inside and outside without fading
- No need for sealers, paints or epoxies that flake off
- Increases hardness and density while reducing porosity
- Not a stain - no harmful or toxic chemical exposure
- Beautiful sheen with or without diamond polishing
- No need for concrete to be flat, ColorShield follows contoured surfaces
- Stands up to heavy abrasion while providing excellent slip resistance
- Increased chemical resistance
- Formulation will not contribute to ASR

Technical Information:

Chemical Family.....	Amorphous Silica
Substrate Location.....	Deep Subsurface
Appearance.....	Color of choice
Odor.....	None
Film Forming.....	No
Active Ingredients.....	100%
Type.....	Color Hardener/Densifier
pH.....	6.5 May vary with Color Choice
Boiling Point.....	212° F
Packaging.....	5-gal bucket, 55-gal barrel, 275-gal tote
Shelf Life.....	2 years
VOC (grams/liters).....	less than 50
Freezing Point.....	32° F (Do Not Allow to Freeze)



SDS sheets for all products are available at www.GreenUmbrellaSystems.com



 **Websites & Consulting**

Architects & General Contractors:
GreenUmbrellaSystems.com

Product Consulting:
Info@GreenUmbrellaSystems.com

Estimating

Container Sizes: Green Umbrella™ ColorShield is available in containers holding 5, 55, and 275 gallons and only through Green Umbrella™. Each container is properly labeled with information including the product name, description, and condensed application instructions.

Dilution: None

Coverage Rates: When applied using a Green Umbrella™ sprayer, Green Umbrella™ ColorShield has a coverage rate of up to 700 sq. ft. per gallon, but on average covers 400 sq. ft. per gallon. Only one coat is necessary, but two coats will produce a deeper color. Coverage depends on the porosity of concrete substrate, time, temperature and humidity.

Specifications

Short Specification
DIVISION THREE
SECTION 03 3536

Non-Ground Honed & Polished (GHP)
Thoroughly clean surfaces and remove all curing agents and coatings. If surfaces are to be ground, process to the specified extent by means of a planetary grinding machine. Apply Green Umbrella™ ColorShield, an amorphous silica solution, to chemically harden, seal, and densify concrete surfaces. Green Umbrella™ ColorShield should only be installed by certified Green Umbrella™ Craftsmen.

Ground Honed & Polished (GHP)
A Green Umbrella Engineered Polished Concrete (GUEPC) floor requires that surfaces must be processed by means of a planetary grinding machine to mechanically remove existing coatings, surface imperfections and flatten concrete floors. To reach the desired surface cut and clarity of reflection additional abrasive steps may be required to grind, hone or polish floors to the specified extent. When a polished surface is desired, Green Umbrella™ ColorShield is typically applied in one coat after floors have been cut using a 200 grit Green Umbrella™ resin (GUr) diamond internet abrasive. The application of this water based, odorless amorphous silica solution that chemically hardens, seals, and densifies ground, honed or polished concrete surfaces. Green Umbrella™ ColorShield is a component of the GUEPC system and should only be installed by certified Green Umbrella™ Craftsmen. To find a certified contractor, call (844) 200-7336. A ten-year limited warranty will be issued to the owner upon receipt of a completed -

(continued from pg 2)

and signed job survey form, detailing the steps, cuts and products used in the processing of the floor.

IMPORTANT: FOR A SUCCESSFULLY POLISHED CONCRETE FLOOR MORE IS NEEDED THAN SPECIFYING CHEMISTRY. WAYS AND MEANS MAY BE NECESSARY, PLEASE CONSIDER THE FOLLOWING: SPECIFYING GREEN UMBRELLA™ ENGINEERED POLISHED CONCRETE (GUEPC)

Green chemistry; like Green Umbrella™ ColorShield is just one part of a successful specified concrete floor. GUEPC system is a complete concrete polishing system from design to completion it uses our Green Umbrella™ chemistry in the polished concrete market.

A green mechanical process involves processing the floor wet to avoid silicosis issues affecting either installers themselves or by endangering future inhabitants by contaminating air ducts in the building. The process uses a progression of diamond grits on a machine built for wet concrete processing. The use of water enables a higher quality cut to the floor. The wet grinding system has been well supported in the industry for the best approach to clarity and time savings for exposure of aggregate among other advantages.

GUEPC equipment carries the weight to see the concrete grinding, honing and polishing process through to completion and can even expose aggregate if desired. GUEPC uses alternative fuels to leave a lesser impact on the environment. Meeting GS-24 and other sustainable requirements. Green Umbrella™ grinders (Green Grinder or Stone Extreme) and edger (Green Umbrella™ Low Profile Edger) process the entire floor, with the same profile within ¼ inch of walls or under shelving. Green Umbrella™ controls the diamond matrix of all our cutting abrasives, eliminating the inconsistencies often found in the industry and maintaining a consistent look throughout the entire floor.

Green Umbrella™ concrete treatments are nonsodium and do not generate hazardous waste. The Green Umbrella™ line of densifiers are not water soluble and do not contribute to alkali-silica reaction. Green Umbrella™ treatments that are pH neutral they will not resist color introduction or promote "walk off", which is common with many hardeners. Green Umbrella™ dyes are a standard in the industry. Green Umbrella™ colorants are micro-pigments (Color Polish or Color Shield), and have superior color fastness compared to traditional stains and dyes.

GUEPC floors include accountability through onsite management. Green Umbrella™ Craftsmen are experienced and have many certifications through indepth training. From design to completion, the GUEPC system covers all aspects of the GP Nine. We simply offer the greenest options for grey concrete. FROM DESIGN TO COMPLETION, YOU EXPERIENCE A COMPLETE SYSTEM.

Environmental Responsibility and LEED Considerations

GUEPC specified process is specially designed to require less labor and downtime while lowering environmental impact. Green Umbrella™ ColorShield is easy to apply, and because the application is simple fewer laborers are required. Green Umbrella™ ColorShield has low VOCs and has a minimal impact on indoor air quality.

Optimize Energy Performance

- Polished concrete allows the advantage of utilizing the thermal mass of concrete in heating and cooling.
- Polished concrete provides the ability to increase the benefit of ambient natural lighting and/or reduce the required lampage.

Building Reuse/Construction Waste Management/ Recycled Content

- Existing Buildings — Environmental stewardship through the reuse of 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.

Life Cycle Cost

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

Potential LEED Credits

Polished Concrete is a sustainable floor. The intent of the following credits is to rate output efficiency. Polished concrete reduces energy and material waste, thus reducing environmental impact.

New Construction, Schools, Core and Shell, Commercial Interior.

Material and Resources - MR Credit 1 & 1.1 Building Reuse

Material and Resources - MR Credit 1.2 Building Reuse

Material and Resources - MR Credit 3 & 3.1 Material Reuse

Material and Resources - MR Credit 4 Recycled Content

Indoor Environmental Quality - IEQ Credit 4.3 Regional Materials

Testing

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

ACI Standard 302.IR-89 Chemical concrete hardners can be used to increase concrete resistance to chemicals including , but not limited to the following:

Aluminum sulfate	Lead refining solutions, 10%	Potassium persulfate
Ammonium chloride	Lignite oils	Potassium sulfate
Barium hydroxide	Machine oils	Rapeseed oil
Beef fat	Magnesium chloride	Sea water
Calcium hydroxide	Magnesium sulfate	Silage
Calcium nitrate	Manganese sulfate	Sodium bromide
Carbon dioxide	Manure	Sodium carbonate
Carbonic acid	Mash, fermenting	Sodium chloride
Castor oil	Mercuric chloride	Sodium dichromate
Coal-tar oils	Mercurous chloride	Sodium nitrite
Cottonseed oil	Mine water, waste	Sodium sulfite, 10%
Creosote	Mineral oil Molasses	Sodium sulfite, 10%
Cresol	Mustard oil Nickel sulfate	Sodium thiosulfate
Distillers slop	100%Olive oil	Soybean oil
Ethylene glycol	Paraffin	Sugar
Ferric chloride	Phenol, 25%	Sulfite liquor
Ferric sulfate	Phosphoric acid, 85%	Tallow and tallow oil
Ferrous chloride	Pickling brine, 10%	Tannic acid
Ferrous sulfate	Poppy seed oil	Tanning liquor, 10%
Fish oil	Potassium aluminum sulfate, 10%	Tobacco
Fruit juices	Potassium carbonate	Walnut oil
Glucose		Zinc chloride
Glycerin		Zinc sulfate
Hydrogen sulfide		Zinc nitrate
Iodine		
Lactic acid, 25%		

Grind Hone & Polishing Equipment

Green Umbrella™ equipment meets GS-24 and LEED Maintenance Guidelines.

Green Umbrella™ Uses Propane fueled equipment which saves the owner as much as 50 cents a square foot in electrical bills due to three phase and 220 volt equipment that is used by many GHP contractors. Propane in itself is not a direct greenhouse gas and is one of the world's most widely used alternative fuels. In fact, electric power adds 80% more CO2 into our atmosphere than does propane. Propane equipment can be safe, clean, and efficient fuel. However, all Green Umbrella™ propane equipment should have the following to be used in the concrete polishing industry: CARB and EPA certification - the engines are certified annually and independently by CARB and EPA 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.

GHP Equipment:

- High Productivity Rider Grinder — processes larger areas in less time.
 - o Heavy duty commercial floor grinder/polisher by Green Umbrella™, Stonextreme or equivalent.
 - o Minimum 933 pounds head pressure.
 - o 77 inch grinding width.
 - o Minimum 8000 square feet per hour production rate.
- Grinder/Honer/Polisher — grinds, hones, and mechanically polishes floors.
 - o Propane powered, heavy duty commercial floor Green Grinder/Polisher by Green Umbrella™.
 - o Minimum 785 pounds head pressure.
 - o CARB/EPA approved.
 - o 30 inch grinding width.
 - o 12 diamond, counter clockwise rotation.
 - o Minimum 1200 square feet per hour production rate.
 - o Provide minimum of two units on site.
- Edger — processes floors within a ¼ inch of wall.
 - o Propane powered Green Edger by Green Umbrella™ or Productions Team
 - o Minimum 165 pounds head pressure.
 - o CARB/EPA approved.
 - o 1/4 inch cut to wall.
 - o Four diamond head, 640 RPM diamond rotation.
 - o Provide minimum of two units on site.
- Burnisher — removes un-reacted material and gives high gloss shine.
 - o Propane powered, high productivity Green Polisher by Green Umbrella™, Pioneer Eclipse or Eagle.
 - o CARB/EPA approved.
 - o 27 or 39 inch burnishing width.
 - o Head Pressured
 - o Minimum 2000 RPM.
- Auto Scrubber — cleans between abrasive steps to prevent contamination. *Important: not all floor scrubbers are effective in slurry recovery.*
 - o Auto scrubber by Tomcat, Pioneer Eclipse or Nilfisk-Advance.
 - o Minimum 500 pound head pressure.
 - o Water application and minimum 30 gallon recovery tank.

Abrasives for GHP Equipment

- Abrasives — diamond abrasives cut concrete substrate in a sequence of steps.
 - o Metal bond abrasives (GUm), resin bond abrasives (GUr), and coating removal metal bond abrasives (GUcr) by Green Umbrella™.
 - o Match hardness of abrasives to hardness of concrete.
 - o 10-segment diamond pad except for coating removal with GUm or GUr matrix.

(continued from pg 4)

Prep. Equipment

For non-GHP (Grind, Hone and Polish) or vertical concrete:

- Power Washer on low psi
- Industrial Water Broom — cleans and removes dirt buildup before product application.
 - o Heavy duty industrial water broom by WaterMiser Broom or equivalent.
 - o Up to 180 PSI of water.

Application Equipment

- Hand-Pump Sprayer Applicator — used to apply product evenly and consistently.
 - o Industrial hand-pump sprayer by Green Umbrella™, Patriot Sprayers, or equivalent.
 - o Maximum tip pressure 40 psi.
 - o # 8 gray conical tip.
- T-bar with blended applicator — distributes product sprayed on concrete substrate.



All products can be seen at GreenUmbrellaSystems.com

Product Placement/Application

New Concrete: If specifying concrete, preference should be given to ACI 223, concrete using Green Canvas. Before any concrete processing begins, new concrete should be fully cured for seven (7) days and free of all potential contaminants. Green Umbrella™ ColorShield is used neat and does not require any dilution or mixing

Existing Concrete: Existing concrete should be thoroughly cleaned and swept of all debris and potential contaminants — including sealers, wax, coatings and oil or food spills—prior to concrete processing. Green Umbrella™ ColorShield is used neat and does not require any dilution or mixing.

GUEPC floors are only available through certified Green Umbrella™ Craftsmen. Green Umbrella™ Craftsmen are trained in chemical application, dye application and concrete grinding and carry multiple certifications.

Non-GHP Floor

1. Concrete must be open. Apply Green Umbrella™ ColorShield with a Green Umbrella™ solution spreader or sprayer.
2. Distribute product with an exploded-tip bristle broom to ensure uniform coverage.
3. Allow product to air dry. Green Umbrella™ ColorShield will not gel on surface and does not require rinsing.
4. Remove any un-reacted material with a broom after product has dried.

GH Floor

1. It is best to densify with Green Umbrella™ ColorShield after first resin cut. It is recommended to hone floors to a 200 grit GUr diamond abrasive. Clean floor of slurry and contaminants with auto-scrubber.

2. Remove Standing water.

3. Apply one application of Green Umbrella™ ColorShield with a Patriot sprayer using a #8 grey or conical tip. Apply in circular motion.

4. Apply enough ColorShield to keep floor wet for 15 minutes. There is generally no need to spread. If necessary use soft bristle broom. Allow to dry. Usually several hours.

5. Auto scrub residue off with water only. Or burnish with a Green Umbrella™ Black Pad (non-resin transfer, not hi-pro) on medium throttle to remove any excess residue. Remove dye residue off floor to reveal a translucent color.

Note: Time, Temperature & Humidity:

For a chemical reaction to take place successfully, time must be allocated for reactants to fully react. Likewise, when applying Green Umbrella™ ColorShield to concrete, there must be adequate amount of dwell time or the reaction to take place. Doing so will help to achieve the best result. For Green Umbrella™ ColorShield to effectively clean the substrate, the temperature should not be less than 40° F. If temperatures are lower than is recommended, the chemistry may take much longer to react with and penetrate dirt and stains on the concrete substrate. If the temperature exceeds 95° F or conditions are windy, the chemistry may react and dry before penetrating dirt or stains on substrate. In such circumstances, keep floors hydrated with water for recommended dwell time. Humidity also plays a role in the dry time. Product applied to a dry slab of concrete in an arid climate will dry faster than to a dry slab of concrete in a humid climate due to the amount of humidity present in the air. In dry climates with low humidity it may be necessary to hydrate the slab in order to allow for proper dwell time. Please consult a Green Umbrella™ representative if you have any questions.

For Best Results:

Light foot traffic Until dry or 1 hour

Wheeled traffic 3 hours

Clean up: When Green Umbrella™ Dry Shield is applied to a polished concrete floor no rinsing or scrubbing is required, simply proceed to the next honing step. For ground or honed concrete floors remove un-reacted material with a broom or a highspeed propane burnisher and a Green Umbrella™ black pad.

Maintenance

IMPORTANT: Only use pH neutral cleaner.

Non-GHP Floors (GHP)

- Regularly sweep away debris
- Regularly use a water broom to remove dirt build up from treated concrete surfaces

GHP Floors

- Regularly sweep away debris
- Regularly auto-scrub or mop with water or Green Umbrella™ Cleaner
- Use Green Umbrella™ Degreaser as needed
- For GHP floors periodically burnish with a weighted, high speed propane burnisher using Green Umbrella™ black pad to remove dirt build up and restore gloss



Facility Maintenance Training:

www.GreenUmbrellaSystems.com/contact

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™ 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, GREEN UMBRELLA™ 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 manufacturer's representative must be on site to supervise installation. It is the responsibility of the contractor to follow all directions and requirements as outlined in the GREEN UMBRELLA™ installation specifications. A completed Job Survey form 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 GREEN UMBRELLA™, no other representations or statements made by GREEN UMBRELLA™ or its representatives, in writing or orally, shall alter this warranty. GREEN UMBRELLA 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™ APPLIED TO SUBSTANDARD CONCRETE IS EXCLUDED FROM ANY KIND OF WARRANTY. If any GREEN UMBRELLA™ product fails to conform to this warranty, GREEN UMBRELLA™ will replace GREEN UMBRELLA™ product at no cost to the Buyer. Replacement of any 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 fails to

conform to such installation information and instructions shall void this warranty. Product demonstrations, if any are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining suitability of GREEN UMBRELLA™ products for the Buyers intended purposes.

For Professional Use Only.

Made in the USA