

TECHNICAL DATA SHEET

SURFACE & SUBSURFACE / REACTIVE GROUT / INSOLUBLE

GREENUMBRELLA® ProfileFil Plus+

PRODUCT DESCRIPTION

Green Umbrella® ProfileFil Plus™ Green Umbrella's latest advancement in reactive grouting technology with GUnanoInside, for profiled floors. Creating an invisible bond that improves surface strength. ProfileFil Plus's innovative bonding formula and colorant acceptance ensure a long-term solution for abrasively polished architectural concrete problemed floors. It is formulated to be non-polluting, environmentally safe, and quick curing grout. Introduced during the profiling process @MatureAge, it fills concrete micro-holes, micro-cracks, and even small aggregate roll-outs. Additionally, by closing off the surface, it allows for a highly reflective finish, if desired. ProfileFil Plus simply is "The Slab Saver" for damaged architectural concrete that could not be honed without surface grout, helping to lessen your environmental impact.

BASIC USE

Profile & Polishing @EarlyAge & @MatureAge

ProfileFil Plus™ basic use is a *Ionic Bonding Reactive Surface & Subsurface Grout*, with GUnanoInside. Used @MatureAge applications to correct poorly preformed or aged retrofit architectural concrete floors that have micro-holes, micro-crack or small aggregate roll outs that prevent floor from being correctly processed.

Designed as a grout that mixes with dry abrasive dust, Green Umbrella ProfileFill Plus is introduced during the profiling of a profile, hone, polish (PHP) process resulting in voids being filled that closes off surface porosity that allows damaged floors to be abrasively hone and polished.

Green Umbrella ProfileFill Plus can be used as part of a Green Umbrella System (*Green Umbrella Architectural Polished Concrete described in Note to Specifier section*).

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

- DESIGNED FOR DAMAGED OR RETRO-FIT FLOORS, IMPROVES SUSTAINABILITY
- FILLS VOIDS DURING THE ABRASIVE PROCESS, CREATING BONDING AT RIGHT TIME
- SUPERIOR REFLECTIVITY WHEN HONE & POLISHED, SLAB SAVER
- INCREASED COLORANT ABSORPTION, IMPROVED APPEARANCE
- IMPROVED SUBSURFACE ABSORPTION, ELEVATES DENSIFIER EFFECTIVENESS
- IONIC & REACTIVE, LONGER LIFE-CYCLE
- NON-RESINOUS, MORE COMPLETE BOND
- VOC COMPLIANT, LESSENS ENVIRONMENTAL IMPACT

TECHNICAL INFORMATION

Formulation	Ionic Bonding Reactive Surface & Subsurface Grout
Chemical Family	Lithium Hybrid
Substrate Location	Surface & Subsurface
Appearance	Opaque
Odor	None
FilmForming	No
Active Ingredients	11-12
Specific Gravity	100%
Type	1.1
pH	Grout
Boiling Point	212°F/100°C
Packaging	5-gal bucket, 55-gal drum, 275-gal tote
Shelf Life	1 years.
VOC(grams/liters)	<50
Freezing Point	32°F / 0°C (Do Not Allow to Freeze)

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

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 ProfileFill Plus container is properly labeled with information, including the product name, description, batch number, and application instructions.

Dilution:

1:2 with water in a dedicated low pressure, high-volume battery back or manual sprayer.

Coverage Rates:

Green Umbrella ProfileFill Plus has an average coverage rate of 300 SF (Diluted) per gallon (7.4 m2 per liter). Coverage depends on concrete porosity.

SPECIFICATIONS

GreenUmbrella® CUTSPEC™

Simplified Product Spec

MatureAge Conventional Concrete To Be Abrasively Polished:

ProfileFil Plus™ by Green Umbrella® of Rochester, NY (844) 200-7336 is a Ionic Bonding Reactive Surface & Subsurface Grout. 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) Dry profile 2) Spray ProfileFil Plus 3) Grind the wet floor until slurry grout slurry thickens and has filled desired areas. 4) Allow to cure for three hours 5) Hone with GC™ abrasives with GreenCut™ 6) Optional: Apply Green Umbrella Nano-Dye™ for colorant 7) 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. 8) Hone and polish to desired finish with GC™ abrasives. 9) 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 & 0

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 033000

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® ProfileFil Plus™ 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 ProfileFil Plus 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 ProfileFil Plus is easy and quick to apply, requiring less labor. ProfileFil Plus 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, amplify-

ing 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.

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 Water-broom by GreenUmbrella 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

MatureAge Conventional Concrete to be Abrasively Polished:

Green Umbrella ProfileFil Plus is placed before the first profile 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. ProfileFil Plus, is sprayed down before first 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 ProfileFil Plus 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 ProfileFil Plus 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 ProfileFil Plus 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 ProfileFil Plus diluted at 300 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 ProfileFil Plus.

@EarlyAge & @MatureAge Concrete To Be Abrasively Polished

Generally applied on @MatureAge concrete, for damaged @EarlyAge concrete use Green Umbrella ProfileFil Plus a few days after concrete placement & finishing.

@MatureAge Concrete To Be Abrasively Polished

Use only during the conclusion of Profiling. Do not use during Honing or Polishing. Do a mock-up for best results.

1. Dilute ProfileFil Plus treatment 1:2 in a sprayer.
2. Profile Wet. For Specified or desired Aggregate Exposure Class select metal or fusion abrasive(s) and proceed.

1. Introduce ProfileFil Plus with final Profile Abrasive - Use with GCX™ metal abrasives or GU Fusion abrasives. Do Not introduce under honing or polishing abrasives.
2. Spray sufficient product to cover the working path of the Grinder. Work a section at a time, applying only to the area being profiled.
3. Work into the floor, agitating with a dedicated soft bristle broom.
4. Allow the GCX Metal or Fusion abrasive to generate a slurry to create the fill.
5. Squeegee behind the completed area and allow to dry.

Proceed with Abrasive Polishing

3. Double-scrub with an auto-scrubber equipped with GU recommended pads/brushes. Do not use 'drum style' brushes.
4. Important: For high temperature or windy application, see Note to Applicator: Time, Temp. & Humidity.
5. If there will be topical color application: Apply Green Umbrella NanoDye™ colorants (use as directed) before proceeding to the next step.
6. Double-scrub with an auto-scrubber equipped with

GU recommended pads/brushes. Proceed to honing abrasive cut. This is required if sub-topical or penetrating surface treatment is applied for HydroShield to bond properly.

7. Use Green Umbrella DryShield (a Densifier), following manufacturers instructions.
8. Double-scrub with an auto-scrubber, equipped with GU recommended pads/brushes.
9. Proceed to Honing abrasive cut(s) and Polish abrasive cut(s), if specified.
10. Apply Green Umbrella Microfilm™ (a surface treatment) according to instructions.
11. Maintain the Profiled, Honed and Polished surface using Health Sentinel Maintenance - designed for sustainable architectural concrete.

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.

PROFILE FIL PLUS

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.

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