

product data

SELECTION & SPECIFICATION DATA

TYPE & DESCRIPTION	Greenstone 440 is a portland cement-urethane based monolithic floor surfacer designed application using a screed rake. Formulated for optimum chemical resistance and physical properties, applied at 1/4" nominal film thickness.
ADVANTAGES	Cures quickly to form an exceptionally tough, impact and abrasion resistant surface. Excellent adhesion to concrete, steel, and wood. Minimum down time. Skid resistant, sanitary, non-shrinking. Easy to clean - USDA acceptable.
CHEMICAL RESISTANCE	Not affected by water, oil, brine, most acids and alkalines. For specific recommendations, please refer to Greenstone's Chemical Resistance Guide.
USES	Resurfacing floors in food production plants, aisle ways, chemical spill containment area's, industrial production facilities, and pulp and paper mills.
GOVERNMENT AGENCY	Meets the requirements of the U.S. Department of Agriculture (USDA) for use as an incidental food contact flooring system.

FOR INDUSTRIAL USE ONLY!

PHYSICAL DATA	<p>Compressive Strength, ASTM D695 - 8500 psi Modulus of Elasticity, ASTM D580 - 1.7×10^5 Tensile Strength, ASTM D638 - 950 psi Flexural Strength, ASTM D790 - 1,900 psi Thermal Coefficient of Linear Expansion, ASTM D696 - 1.1×10^{-5} in/in/°F. Bond Strength, ASTM C-321 - Greater than 350 psi (100% substrate failure). Impact Strength - 120 in/lbs. Indentation - MIL-D-3134F - No Indentation Water Absorption - ASTM C-413 - 0.047% Shelf Life - Minimum 6 months when storage temperature is between 70°F and 85°F. Working Time - approximately 20 minutes at 75°F. Potlife - 15 minutes at 75°F. Cure Time - Greenstone 440 Surfacers will harden in 16-24 hours at 75°F. The warmer the temperature, the faster it cures. Allow a minimum cure of 24 hours for light traffic, and 96 hours for heavy traffic loads and chemical spillage. Maximum chemical and physical properties will be attained after 28 days at 75°F. Flammability - Does not support combustion Solids - 100% Colors - Natural</p>
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PACKAGING / COVERAGE	<p>440 Surfacers - packaged in batches -</p> <p>1 Batch - covers approximately 41 square feet at 5/32" to 3/16" slurry (1/4 inch finished) - containing the following -</p> <ul style="list-style-type: none">1 container - Part A (resin)1 container - Part B (Isocyanate hardener)1 bag - Part C (chemical resistant slurry aggregate)50# (1 bag) - Part D - (chemical resistant broadcast aggregate)
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SUPPLEMENTAL PRODUCTS	450 Grout, 102 Sealer, 100 CR Coating, 100 Coating
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SURFACE PREPARATION AND SUBSTRATES

SURFACE PREPARATION	<p>New Concrete: must have a minimum of 28 days cure, and no curing agents or sealers shall be used. Remove oil, grease or other loose or foreign materials and contaminants. A good bonding tooth, the texture of rough sandpaper, is required to maximize adhesion, with the removal of all glaze. Examples of mechanical surface prep including, but not limited to -</p> <ul style="list-style-type: none">A. Sandblast with steel shot, fine silica, or other similar material.B. Wheel Abrader
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C. Scarify

Existing Concrete: remove all loose, weak concrete, and any paint wax, oil, grease or other contaminants. Once the concrete has been cleaned and neutralized, mechanical surface preparation shall be used to provide a good bonding tooth, a texture of rough sandpaper, with the removal of all glaze. Examples of mechanical surface preparation including, but not limited to -

- A. Sandblast with steel shot, fine silica, or other similar material.
- B. Wheel Abrader
- C. Scarify

Note: Holes and depressions should be prefilled with 450 grout, or a similar system, prior to application. Target application of the slurry is 5/32" to 3/16". All surfaces must be dry prior to application of polymer system.

Metal Surfaces: Degrease surface prior to sandblasting. Use organic solvents, alkaline solutions, steam, hot water with detergents, or other systems that will completely remove dirt, oil, grease, etc. Blast the surface to near white SSPC-SP 10-70, or NACE No. 2 using a Venturi blast nozzle with 100psi air. To produce the 4 mil minimum anchor pattern or tooth, the blasting media used shall be a properly graded, clean, sharp angular abrasive similar to Humble Abrasive Flint S7 (6-30 mesh), Steel Grit (HG25), or Black Beauty (BB1040).

MIXING AND EQUIPMENT

MIXING

Surfacer - Mix the contents of Part A & Part B thoroughly. When completed, start the mixer, and slowly add the Part C, chemical resistant aggregate, and mix the three components until the aggregate is completely "wet out" / completely homogeneous. Note - Person mixing should wear a dust mask or respirator.

Storage - Material storage, of all components, at cooler temperatures (65°F) will improve working time.

Mixer: A heavy duty 1/2 horsepower drill with large mixing paddle or a mechanical mixer designed for quick, thorough mixing of aggregate systems similar to those manufactured by -

Kol Mixal	Quick Stir, INC.
Div. of Man U Fab Inc.	P.O. Box 327
7740 Main St. N.E.	Port Clinton, Ohio 43452
Minneapolis, MN 55432	

Important! - The working life of the mixed blend is approximately 15 minutes. Always pour mixed batches as soon as possible. Mixed materials remaining in a container will produce heat. Keep away from combustible materials. Do not reseal mixed containers!

APPLICATION AND SAFETY

APPLICATION

To prevent undercutting or lifting, keyways (minimum 5/16" wide by 5/16" deep) must be formed at all degess, bay joints, columns, doorways, drains and at rectangular centers, spaced a minimum of 12 feet apart across the substrate.

SURFACER: Pour the entire batch onto the floor in a ribbon approximately 10" wide. Spread evenly with a screed rake (or similar) at a rate of approximately 41 square feet per batch, and back roll with a "pin" / fine spiked roller (slowly) to smooth any irregularities in the film. (Do not apply wet material (prior to broadcast) at more than 3/16" if possible to minimize surface imperfections of the finished system.) Leaving a wet edge for the next batch, broadcast the Part D aggregate into the freshly leveled surface. Repeat this process until entire floor is covered. After the 440 Surfacer has cured for 18-24 hours, sweep of all excess Part D aggregate and topcoat with the specified system.

FINISHING THE EDGES - Cut approximately 1/8" deep chase or groove into concrete. Chisel a shoulder into the saw cut, back approximately 2 to 4 inches. Trowel smooth to meet adjoining floor level. Do not use a feather edge.

CURE TIME - Greenstone 440 Surfacer will harden in 18-24 hours at 75°F. The warmer the temperature, the faster the cure. Allow 24 hours, at 75°F, for light traffic, and 96 hours for full cure. Maximum chemical resistance and physical properties with be attained after 28 days at 75°F.

CLEAN-UP - Cured or hardened Greenstone 440 Surfacer is almost impossible to remove. Clean tools and equipment immediately with hot soapy water, or a mixture a acetone and ethanol.

SAFETY

Observe good personal hygiene. Certain personnel may be sensitive to various types of resins which may cause dermatitis. Avoid contact with skin and breathing of vapor. Read and follow all caution statements on product info bulletin, material safety data sheet and container labels for this product. This bulletin provides standard information for the system and application procedure. Since varying application conditions may not be covered, consult GREENSTONE Technical Service Department for further information.

We guarantee our product to be free of defects in material and workmanship, and to be in accordance with our company quality control standards. All data, statements and recommendations made herein are based upon information we believe to be reliable, but are made without any representation or guarantee or warranty of accuracy and are made with reservation of all patent rights. Our products are sold on the condition that the user will evaluate them, as well as our recommendations, to determine their suitability for his own purpose before adoption. Also, statements regarding the use of our products or processes are not to be construed as recommendations for their use in violation of any patent rights or in violation of any applicable laws or regulations. Liability under any condition shall be limited to replacement of material only. No liability is assumed or implied, for injury to personnel, labor costs, product loss or any other expenses incidental to the structure or operation of the plant and equipment where the system is being applied.