

DATA SHEET FOR **GROUNDWORX ULTRA ESD URETHANE CONCRETE**

PRODUCT DESCRIPTION AND USE

GroundWorx Ultra ESD urethane concrete is a self-priming, three or four component, self-leveling urethane concrete slurry to be installed as a base for GroundWorx Ultra ESD primer and top coat. It is formulated as an easy and economical self-leveling 60-90 mil urethane concrete slurry specifically for ease of placement and leveling properties. Because of its fluidity and longer working time, application transitions and seams are minimized compared to the traditional heavier bodied urethane concretes. GroundWorx Ultra urethane concrete provides thermal shock protection against temperatures up to 180°F. It is a semi-rigid mortar and moves with the thermally induced expansion and contraction of concrete substrates. GroundWorx Ultra ESD urethane concrete maintains superior chemical resistance to strong oxidizing agents, organic acids and aromatic solvents.

TECHNICAL DATA

Physical Properties

- Flash Point (ASTM D3278) $\geq 215^{\circ}\text{F}$ (102°C)
- Solids Content (ASTM D2369) 95%
- Mixed Viscosity (D2196) 400-700 cPs
- Volatile Organic Compounds $< 0 \text{ g/l}$

Performance Properties

- Abrasion Resistance (ASTM D4060) 100 mg
- Coefficient of Friction (ASTM D2047, James Test) 0.72
- Tensile Strength (ASTM D2370) 1,000 PSI
- Compressive Strength (ASTM C579A) 6,000 PSI
- Flexural Strength (ASTM C580) 1,800 PSI
- Adhesion to Concrete (ASTM D4541) 350 PSI concrete failure
- Density (ASTM C905) 13.25 lbs/gal
- Impact (ASTM D2794) $>80 \text{ in/lbs}$
- Thermal Coefficient of Linear Expansion (ASTM C531) $8.5 \times 10^{-5} \text{ in/in/}^{\circ}\text{F}$
- Thickness 1/16" minimum

*Properties and results are based on laboratory testing at 72°F (22°C) and 50% RH, theoretical calculations, and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

GENERAL INFORMATION

Storage

Materials should be stored in original un-opened containers indoors between 65°F (18°C) and 90°F (32°C) and at or below 50% RH. Protect liquids from freezing.

Shelf Life

1 year from date of manufacture (un-opened)

Packaging

- Volume mix ratio: 1A: 1B
- One Pint of GwxU UC tints 10 mixed gallons, or 3.2 fl oz per single gallon field mix

2.25 CuFt kit (430 sqft @ 60 mils) (5-1 bag mixes; 86.4 sqft/ea)

- UC part A: 5 gal
- UC part B: 5 gal
- UC Pigment: (x1) pint
- UC Aggregate 25lb bag: (x5) bags

24.3 CuFt kit (4,665 sqft @ 60 mils) (54-1 bag mixes; 86.4 sqft/ea)

- UC part A: 54 gal drum
- UC part B: 54 gal drum
- UC Pigment: (x11) pints
- UC Aggregate 25lb bag: (x54) bags

Substrate

The substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. If the concrete has been treated or sealed, proceed with complete removal. Contact StaticWorx for further instruction if silicate hardeners or membranes have been utilized.

Limitations

GroundWorx Ultra ESD urethane concrete must be applied to a properly prepared, clean concrete substrate. If contaminants of oils, silicones, mold release agents, and/or others are present, GroundWorx Ultra ESD urethane concrete may fisheye or delaminate from the surface. Surface contaminants should be removed with a suitable detergent prior to application. NOTE: GroundWorx Ultra A ESD urethane concrete may amber over time from UV exposure unless coated with GroundWorx Ultra ESD primer and top coat. Do not apply material directly to metallic substrates, elastomeric membranes, fiberglass, plastic, or asphalt without first contacting StaticWorx.

Moisture

Moisture and vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. StaticWorx requires that all concrete slabs are tested using in-situ probes per ASTM F-2170 and with calcium chloride tests per ASTM F-1869. If the relative humidity of the concrete substrate is over 99.0% (per ASTM F-2170), contact StaticWorx prior to product use.

Vapor/Contamination

If there is no known vapor barrier or the vapor barrier is inadequate or damaged, there is an elevated risk of bond failure. Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete may also elevate the risk of adhesion difficulties. Contact StaticWorx for approved mitigation treatments.

Temperature & Humidity

During the application and curing of the coating, the substrate temperature, material temperature, and room conditions must be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30- 80%. DO NOT apply coatings unless the surface temperature is more than five degrees over the dew point.

Equipment

- Protective equipment and clothing
- High speed mix drill with 4" saw tooth dispersing and mixing blade
- Screed rake/Cam rake
- Magic Trowel® (recommended)
- Hand trowel
- Porcupine roller/Loop roller (1/4 in)
- Surface grinders
- Industrial vacuum

Surface Preparation

Surface dirt, grease, oil, and contaminants must be removed by detergent scrubbing and rinsing with clean water. Concrete scarification or shot blasting to a minimum CSP3 surface profile is the preferred method of preparation.

Joint Treatment

Construction joints may need to be re-built and re-cut and then filled with a semi-rigid joint filler. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over. All construction/control joints in the concrete must be honored (i.e. re-cut and filled). Control joints must be filled with a semi-rigid joint compound such as GroundWorx Ultra ESD joint filler.

Mixing Instructions

- Pre-mix Part A with a high-speed drill and jiffy mix paddle for 1 minute.
- Next add the 16 fl. oz. color pack and mix for a minimum of 1-2 minutes until color is uniform throughout the pail.
- After pre-mixing, pour off 1 gallon of tinted Part A into a separate 5-gallon mixing container, then add 1 gallon of Part B. Mix these together for 1-2 minutes with a high speed drill and mortar jiffy mixing paddle.
- With the mixer running, gradually add 1 bag of aggregate until mix is homogeneous. Minimum mixing time is 90 seconds. It is absolutely critical to be consistent with mixing times to achieve uniform handling, flow properties, and final appearance. It is vital to mix until material is lump free. Lumps of undispersed aggregate can cause blisters to form.

Application Instructions

- Apply GroundWorx Ultra ESD urethane concrete at a thickness of 60-90 mils to the floor surface using a notched squeegee (1/4" for 60 mils, 1/2" for 90 mils), screed, or cam rake (1/16" for 62.5 mils, 1/8" for 125 mils). Immediately remove and smooth the applicator lines (Magic Trowel® recommended).
- Level and evenly distribute the material with a loop roller. A final roll with a pin or porcupine roller can be done to further refine the leveling, if necessary.
- Care should be taken not to over roll as material may not level after 15 minutes. It is critical to plan a consistent timing pattern between mixing and application for best results. Wet edge should be kept to a maximum of 10 lineal feet per applicator. To avoid transition lines between mixes, pour the fresh mix onto the wet edge of the previous mix. Never apply GroundWorx Ultra urethane concrete to a floor that has a slope greater than 1/8" per linear foot.

- Working time including mixing is limited to 15-20 minutes. Surface will stiffen and become unworkable after 20 minutes. Mixing equipment and tools must be cleaned multiple times during the application to keep materials from setting up prematurely.

Cure Time

Allow the urethane concrete to cure (dry) for a minimum 6 hours after application at 75°F (24C) and 50% RH before allowing any light foot traffic. Allow more time for low temperatures and higher humidity or for heavier traffic. Full coating properties may take 72 hours to develop.

NOTE: Within the first 12 hours of placement, urethane concrete is still in reaction, slowly releasing water vapor and CO₂ gas. Allow the floor to cure for a minimum of 12 hours to allow for proper evacuation of water vapor and gas before the application of epoxy primers or top coats. Failure to do so may result in tiny bubbles within subsequent coats.

Handling Precautions

Use only with adequate ventilation. Appropriate cartridge-type respirator should be used during application in confined areas. Avoid contact with skin; wear protective gloves. Read Material Safety Data Sheet before using.

Disposal

Dispose in accordance with federal, state, and local regulations.

Maintenance Guidelines

Allow floor coating to cure for at least 7 days before cleaning by mechanical means (i.e. sweeper, scrubber, disc buffer). Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance. Regularly sweep to avoid retention of dirt and grime which can quickly dull the finish, decreasing the life of the coating. Spills should be removed as quickly as possible as certain chemicals may stain and can permanently damage the finish. Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

Damages & Repairs

Heavy objects dragged across the surface will scratch any floor coating. Avoid gouging or scratching the surface. StaticWorx recommends protecting the floor with plywood, Masonite, or Ram boards whenever heavy equipment is being moved in or out of the space. Pointed items or heavy items dropped on the floor may cause chipping or concrete chip damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from forklifts and lift trucks can heat the coating to its softening point, causing permanent damage and marking. Repair gouges, chips, and scratches as soon as possible to prevent moisture and chemical under cutting and permanent damage to the floor coating.

Usage

Installation of all products purchased must be by professional coatings installers. Unapproved modification to any StaticWorx product voids the warranty. The installer shall maintain a written record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). StaticWorx reserves the right to inspect any installed product, installation, and/or maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full.

Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor coatings, creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible, to predict. StaticWorx recommends testing for moisture and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping as detailed above. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended that an independent lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed, or if a failure occurs due to ASR, the StaticWorx limited warranty will not apply.