1. Product Name
FGS/PermaShine® Concrete Polishing System for new and existing floors

2. Manufacturer
L & M Construction Chemicals, Inc.
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3. Product Description

BASIC USE
The FGS/PermaShine® Concrete Polishing System transforms ordinary concrete surfaces into exceptionally durable, attractive, colorful floors. The system uses a patented, dry grinding process that includes special techniques and products to smooth, polish, color and densify both new and existing concrete floor surfaces.

Concrete surfaces benefit from the FGS/PermaShine process, displaying an attractive floor finish with exceptional durability. When color and accent aggregates are added, FGS/PermaShine produces unique floor finishes that are both visually attractive and cost competitive with new vinyl tile, ceramic tile, terrazzo and epoxy coatings. Powerful abrasive equipment and VOC-free chemical treatments specified in the FGS/PermaShine system renew worn, irregular concrete floors that suffer from years of use and abuse, transforming them into safe, attractive surfaces with light-reflective and durable polished finishes. FGS Hardener Plus, a proprietary and powerful chemical densifier and vital component of this system, permanently transforms the comparatively soft cement paste found in the top 1/16" - 1/8" (1.6 - 3.2 mm) below the concrete into a hard, dense, easy to clean and wear-resistant surface.

Treating polished surfaces with FGS Hardener Plus completely eliminates the need for wax coatings and dramatically reduces floor maintenance costs. When used in conjunction with the patented FGS/PermaShine System, treated floors are permanently dust-proofed, and with simple maintenance will hold their attractive, polished maintenance far into the future. The exceptional durability of this system adds significant economic value to the building owner, as maintenance costs are typically reduced by half or more when compared with other flooring options.

FGS/PermaShine is GreenSpec® listed and can contribute points for LEED® certified projects in environmentally responsible new construction and building rehabilitation projects.

FGS/PermaShine includes the following:
- A patented, dry grinding and polishing process
- Certified, trained installing contractors who use pre-tested and approved equipment
- High performance, chemical densifier that extends the life of the polished floor finish
- Unique cleaning and conditioning chemicals to help floors retain gloss and durability
- 10 year warranty
- Attractive color options for new and existing floors

FGS/PermaShine is recommended for exposed concrete floors where beauty, durability and use of environmentally friendly materials are important. Applications include:
- Schools
- Restaurants
- Public buildings
- Factories
- Commercial buildings
- Vehicle maintenance facilities
- Grocery stores
- Condominiums
- Distribution centers
- Food processing plants
- Retail outlets
- LEED-NC and LEED-EB certified projects

FINISH
The final floor finish appearance is dependent upon the condition and quality of the pre-existing concrete finish. A trained, certified FGS applicator and the owner’s representative will determine the attainable finish level. Specifiable appearances include a standard HG-1 high gloss finish (1500 grit), optional MG-2 medium gloss finish (800 grit) and optional VH-3 very high gloss (3000 grit) reflective floor finish. All finish levels are non-slip and conform to ADA and OSHA requirements.

BENIFTS
- Achieves stunning visual and functional rejuvenation of concrete floors, transforming them into colorful and expressive no-wax wear surfaces
**SHELF LIFE**

When stored in an unopened container in a clean, dry area between 40 and 100 degrees F (4 and 38 degrees C), FGS Hardener Plus has a shelf life of at least 2 years.

**ACCESSORIES**

- Joint Title 750 - Polyurea polymer, semi-rigid joint filler
- Petrotex - Oil repellent penetrating sealer
- Vivid Concrete Dyes
- FGS Concrete Conditioner

**LIMITATIONS**

- Do not freeze. Apply when temperatures are above 40 degrees F (4 degrees C)
- Not recommended for protection against strong acid or applications subject to severe chemical attack
- Variations in concrete finishing and concrete mixes may affect final appearance

**4. Technical Data**

**APPLICABLE STANDARDS**


American Concrete Institute (ACI) - ACI 302.1R Guide for Concrete Floor and Slab Construction

National Roof Safety Institute (NFSI) - NFSI 101-A Standard for Evaluating High-Traction Flooring Materials, Coatings, and Finishes

**APPROVALS**

- Canadian Food Inspection Agency - Accepted
- GreenSpec listed
- National Roof Safety Institute (NFSI) approved
- United States Department of Agriculture (USDA) authorized

**PHYSICAL/CHEMICAL PROPERTIES**

- VOC (g/L) - 0
- Flash point - None
- Abrasion resistance (ASTM C779) - 30 minute reading, 0.008" (0.2 mm), excellent
- Skid resistance (NFSI 101-A) - High traction
- Static coefficient of friction (Wet) - > 0.6
- Odor - None
- Film forming - None
- Reflectance - Increase up to 35%
- Weathering - No adverse effect to ultraviolet light and water spray
- Moisture reduction - Rilem tube, 24 hours exposure, > 70% reduction

**ENVIRONMENTAL CONSIDERATIONS**

FGS/PermaShine is GreenSpec listed and can contribute points towards MR1, MR3, EA and EQ 4.1 Leadership in Energy and Environmental Design (LEED) Green Building Rating System credits for certified projects in environmentally responsible new construction and building rehabilitation projects.

FGS Hardener Plus uses an odorless, VOC-free formula. It contains no solvents, making it friendly to both humans and the environment. Spaces can be reoccupied shortly after the floor treatment’s final rinse, and rinse residue may be safely flushed into sanitary sewers.

**5. Installation**

**PREPARATORY WORK**

Deliver products in manufacturer’s original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to harmful environmental conditions and at temperature recommended by the manufacturer.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

Concrete floors to receive the FGS/PermaShine treatment must first be inspected by a factory-trained, approved installer. An evaluation of floor conditions will precede recommendations regarding the steps and repairs necessary to prepare the floor.

**METHODS**

**Existing Floor Preparation and Polishing**

Remove all sealers, paints, wax, coatings, floor coverings and their mastics, as well as any surface contaminants, such as oil or food spills. Non-moving cracks and saw-cut control joints must be routed, cleaned and filled with L & M Joint Title 750. Repair large or deep surface irregularities with a rapid setting L & M patching compound that meets the requirements of the project. Proceed with grinding and polishing as necessary. Polish floor to gloss required by project.

**New Floor Preparation and Polishing**

Finish concrete floor surfaces in accordance with ACI 302.1R, paragraph 8.3.11, Class 5 floor with hard steel troweled finish or Class 6 floor with colored shake-on floor hardener and hard steel troweled finish. All concrete surfaces to be polished require a hard steel-troweled finish (3 passes) during placement. Do not leave trowel burn marks.
A final rinse is required prior to use. Rinse successive coats and after final application. Warranty. Drying time is 2 - 4 hours between face and are required for compliance with significantly improve the durability of the floor sur-

brushes is required. Equipment utilizing soft scrubbing pads or automatic floor scrubber or other mechanical process are available exclusively through L & M Construction Chemicals, Inc., and through its dealers and its certified, trained and approved installers. Contact the manufacturer for information on local availability.

PRECAUTIONS

- Refer to the Material Safety Data Sheet (MSDS) before using.
- Wear skin and eye protection
- Protect floor from all petroleum and other stains during construction
- For best long-term results, mechanically scrub floor with approved cleaner, FGS Concrete Conditioner
- The penetrating, non-film forming FGS PermaShine concrete treatment will not change the natural non-slip properties of a given concrete floor finish. However, any floor can be slippery when wet or when contaminated with dry, foreign material. Promptly clean up spills
- Chemical treatment permanently densifies the wear surface. For best results, during the first 6 months of use wipe up oil spills immediately. For extra oil protection, apply L & M Petrotex penetrating oil repellent to polished floor surface
- Do not allow FGS Hardener Plus residue to dry before flushing excess from surfaces

**BUILDING CODES**

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

**6. Availability & Cost**

**AVAILABILITY**

FGS Hardener Plus and the FGS/PermaShine

**COST**

Consult L & M Construction Chemicals, Inc., for detailed pricing information.

**7. Warranty**

FGS Hardener Plus is a component of the FGS/PermaShine floor process. As a component, sound and properly treated concrete floors are guaranteed to resist dusting due to abrasion for a minimum of 10 years. Should FGS Hardener Plus fail to perform as specified, sufficient labor and material to retreat the affected area will be provided to the owner at no cost.

Complete warranty terms and conditions are available from the manufacturer. For details, consult L & M Construction Chemicals, Inc.

**8. Maintenance**

To obtain the maximum benefit from the FGS/PermaShine process, clean the treated floor on a regular basis with a solution of water and FGS Concrete Conditioner. This conditioner contains mild, fast-acting cleaning and degreasing agents, as well as active hardening ingredients that continue to enhance the hardened and densified properties of the treated floor. Frequent and continued use of this treatment ensures satisfactory, long-term performance.

Good housekeeping practices, such as regular mechanical sweeping, scrubbing and wet mopping, will both maximize densification and increase the resulting life expectancy of FGS Hardener Plus treated surfaces.

**9. Technical Services**

Technical assistance, including more detailed information, product literature, MSDS, test results, project lists and Fax on Demand, is available. Call (800) 362-3331, or visit www.lmcc.com or www.fgs-permashine.com.

**10. Filing Systems**

- Reed First Source®
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.

FGS/PermaShine can contribute to LEED® certification. It uses a VOC-free, environmentally responsible process and is GreenSpec® listed.

For best results, new floors can be polished and treated after they cure for a minimum of 28 days or attain a minimum compressive strength of 3500 psi (24 MPa).

Remove all surface sealers and film forming curing compounds. Proceed with grinding and polishing steps as determined by project requirements. Polish floor to gloss required by project. Fill joints with approved compound.

**Dyed & Polished Concrete (optional)**

For transitions from dyed and polished concrete surfaces to other finishes, a straight-line transition is recommended. Verify the exact location for the demarcation line.

Follow floor preparation steps described in the above section. Polish concrete to the final finish level. Apply the specified and diluted L & M Vivid Dye and allow to dry. Remove dye residue with dry mechanical buffer. Reapply as necessary for desired result.

**Densifier Installation - All Floors**

Install FGS Hardener Plus in accordance with manufacturer’s printed instructions. Use of an automatic floor scrubber or other mechanical equipment utilizing soft scrubbing pads or brushes is required.

Two coats of FGS Hardener Plus will significantly improve the durability of the floor surface and are required for compliance with warranty. Drying time is 2 - 4 hours between successive coats and after final application. A final rinse is required prior to use. Rinse residue is nonhazardous and can be flushed into sanitary sewers.

**PRECAUTIONS**

- Wear skin and eye protection
- Protect floor from all petroleum and other stains during construction
- For best long-term results, mechanically scrub floor with approved cleaner, FGS Concrete Conditioner
- The penetrating, non-film forming FGS PermaShine concrete treatment will not change the natural non-slip properties of a given concrete floor finish. However, any floor can be slippery when wet or when contaminated with dry, foreign material. Promptly clean up spills
- Chemical treatment permanently densifies the wear surface. For best results, during the first 6 months of use wipe up oil spills immediately. For extra oil protection, apply L & M Petrotex penetrating oil repellent to polished floor surface
- Do not allow FGS Hardener Plus residue to dry before flushing excess from surfaces

**BUILDING CODES**

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

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**AVAILABILITY**

FGS Hardener Plus and the FGS/PermaShine

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