SECTION 03540

CEMENTITIOUS UNDERLAYMENT

This is the recommended specification for DSP™ Lightweight SLU System for lightweight, deep fill, self-leveling and smoothing of indoor concrete. This specification consists of a deep fill base using Dramatic Surface ProductsTM DSP 520 Premium Self-Leveling Underlayment that has been filled with expanded polystyrene beads (lightweight foundation layer), followed by the installation of a top cap of DSP 520 Premium Self-Leveling Underlayment or DSP 530 Ultra Wear Surface as specified.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Dramatic Surface Products, DSP 500 Multipurpose Primer

B. Dramatic Surface Products, DSP 520 Premium Self-Leveling Underlayment

C. Dramatic Surface Products, DSP 530 Ultra Wear Surface

D. Expanded Polystyrene Beads, size “B”, 1.0 lb/cu. ft. density

1.2 RELATED SECTIONS

A. Section 03300 - Cast Underlayment Concrete

B. Section 09000 - Finishes

1.3 REFERENCES

A. ASTM F 1869 Standard Test for measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

B. ASTM F 2170 Relative Humidity in Concrete

1.4 SUBMITTALS

A. Submit under provisions of Section 01300

B. Manufacturer's MSDS and Product Data Sheets on each product to be used, including:

1. Surface preparation instructions and recommendations
2. Storage and handling requirements and recommendations
3. Installation methods

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing Products specified in this section

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship

C. Prepare area designated by Architect

D. Mock-up area shall be 6 feet by 6 feet (1.83 m by 1.83 m)

E. Do not proceed with remaining work until workmanship, is approved by Architect

F. Incorporate mock-up into final construction upon approval

G. Warranty: Product shall be free from manufacturing defects and will not break down or deteriorate under normal use for 5 years.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of section 01650 and section 01660

B. Store products in manufacturer's unopened packaging until ready for installation

C. Store products in a cool dry place out of direct sunlight

D. Maximum shelf life on DSP 520 Premium SLU is 6 months from date of manufacture in unopened packaging and DSP 500 Primer is 1 year from date of manufacture in unopened container

1.7 PROJECT CONDITIONS

A. For interior application only

B. Never mix with cement or additives other than DSP approved products

C. Observe the basic rules of concrete work.

D. Do not install below 43 degrees F substrate temperature

E. Not for use in conditions of hydrostatic pressure or excessive moisture (>95% Relative Humidity) per ASTM F2170

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Brand/Manufacturer: Dramatic Surface Products/H.B. Fuller Construction Products Inc.; 1105 S Frontenac Street, Aurora, IL 60504 ASD. Tel: 800-832-9023. Fax: 800-952-2368.

Web: www.DramaticSurfaceProducts.com

B. Substitutions: Not permitted.

2.2 MATERIALS

A. The cement-based foundation Dramatic Surface Products DSP 520 mixed with expanded polystyrene beads, size B, 1.0 lbs/cu. ft. density.

B. Primer for all substrates shall be Dramatic Surface Products DSP 500 Primer.

C. Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

D. Self-Leveling Underlayment / Wear Surface cap shall be Dramatic Surface Products DSP 520, to be covered by finish floorig.

E. Self-Leveling Wear Layer shall be Dramatic Surface Products DSP 530.

F. The finished DSP 530 Wear Layer surface must be coated with a suitable sealer.

2.3 MIXING

A. Mix the DSP 520 Premium SLU 1 bag at a time. For each bag of powder, add 4.75 quarts (4.5 Liters) of water. Put the water in the mixing barrel followed by one bag of DSP 520 Premium SLU while mixing with a mixing paddle and a 1/2" heavy-duty drill (650 rpm). Mix thoroughly for approximately 1 minute to obtain a lump-free mix. DO NOT OVERWATER!

B. After initial mixing is complete, add 5 gal. (20 qt.) of size "B" expanded polystyrene beads and continue to mix for an additional 1 minute to ensure that the materials are blended thoroughly.

C. Mixing instructions for DSP 520 Premium SLU and DSP 530 Ultra Wear Surface are provided in their respective product data sheets.

PART 3 EXECUTION

3.1 EXAMINATION

A. Test moisture content of substrates:

1. Per ASTM F2170, do not install if relative humidity is >95%

2. For moisture sensitive floor finishes refer to the finish floor manufacturers specifications for moisture limitations. Remediation of excessive moisture conditions must be done prior to installation of Self Leveling Underlayment. To reduce moisture vapor emissions to an acceptable level, contact Dramatic Surface Products.

B. Notify the Architect and General Contractor in writing of any unsatisfactory conditions

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions

1. All surfaces shall be structurally sound and free from any contaminants that may inhibit bond, including oil, grease, dust, loose or peeling paint, sealers, floor finishes, curing compounds or other contaminants
2. Concrete subfloors and other subfloors such as ceramic and quarry tile as well as Cement terrazzo should be clean and free of all waxes and sealers. Mechanically clean if necessary using shot blasting or other methods
3. For installation over cutback adhesive, remove adhesive by scraping until all that remains is a thin transparent layer of adhesive residue

C. Joint Preparation: Repair and reinforce all cracks in the subfloor to minimize telegraphing through the underlayment
1. Moving Joints – honor all expansion and isolation joints up through the underlayment.
2. Saw Cuts and Control Joints – fill all non-moving joints with DSP 502 Skim Coat or DSP 504 Patch as required.
3. Seal all floor openings

3.3 APPLICATION OF PRIMER

A. Install products in accordance with manufacturer's instructions

B. Prime standard subfloors with DSP 500 Primer (refer to coverage chart on product data sheet for extreme conditions)
1. Mix 1 part Primer and 3 parts water (1:3) and apply evenly with a paintbrush, short nap roller or soft bristled push broom
2. Apply an even continuous coat
3. Allow to dry to a clear film (typically 1 – 3 hours)
4. Do not apply underlayment until the primer is dry
5. Primer coverage is approximately 400 to 450 sq. ft. per gallon depending on surface texture

C. Prime cutback adhesive residues over concrete as follows:
1. Prime with DSP 500 (undiluted)
2. Apply evenly with a paintbrush, short nap roller or soft bristled push broom
3. Apply an even continuous coat
4. Allow to dry to a clear film (typically 1 – 3 hours)
5. Do not apply underlayment until the primer is dry

6. Primer coverage is approximately 140 square feet per gallon

3.4 APPLICATION OF LIGHTWEIGHT FOUNDATION LAYER

A. Placement of the lightweight foundation layer should be completed within 5 - 10 minutes after mixing. Pour the blended liquid mixture onto the prepared substrate divided into 3' to 4' lanes. If necessary, assist the placement of the material with a screed or smoother.

Note: Keep from over-working the material. These narrow lanes will insure the strategic placement of the barrel mixed material and allow the product to seek its desired level within the lanes provided. Over-working the product will drive the beads to the surface creating additional sanding and primer the next day.

B. Continue mixing. Strategic placement in each lane will optimize the self-leveling of the mix, with marginal repositioning, using a screed or smoother. It is recommended that several mixing barrels and mixers be used simultaneously to keep the process flowing smoothly. This lightweight foundation layer will be ready to receive light foot traffic after 3-4 hours (allow 12-16 hours before preparing surface to receive the top cap).

C. The DSP Lightweight SLU System's lightweight foundation layer is not to be used as a finished surface. This layer must be topped with a minimum of 3/8" of DSP 520 Premium SLU prior to the installation of the floor covering, or ½" of DSP 530 Ultra Wear Surface, if a wear surface is desired. To prepare the surface to receive the cap. It is recommended to remove any of the loose expanded polystyrene beads from the surface, by using a sanding machine with 12 grit sandpaper. Sanding will insure a surface of uniform density to receive the primer and SLU top cap. Once sanding is completed, vacuum the surface thoroughly to remove all loose materials.

D. The DSP Lightweight SLU System can be installed from 3/4" to virtually any thickness in a single pour. Leave the topping thickness at least 3/8" – ½" below the finished elevation to account for the top cap.

3.5 INSTALLATION OF TOP CAP

A. After preparing the DSP Lightweight SLU System lightweight foundation layer to receive the top cap, prime the surface with DSP 500 Primer. Prime surface with two coats: first coat 1:3 (1 part primer and 3 parts water), second coat 1:2 (1 part primer and 2 parts water) allowing primer to fully dry between coats. Refer to DSP

520 Premium SLU or DSP 530 Ultra Wear Surface data sheets for application instructions.

B. Floor covering can be applied over the DSP 520 Premium SLU top cap after 12-16 hours. The DSP 530 Ultra Wear Surface must be coated with a wear protection coating suitable for the intended use of the floor. See the DSP 530 Ultra Wear Surface product data sheet for further information on coatings.

3.6 PROTECTION

A. Prior to the installation of the floor covering or sealer, the surface of the finished DSP Lightweight SLU System must be protected from abuse by other trades by the use of plywood, masonite or other suitable protection course.

END OF SECTION