

GUIDE SPECIFICATION

VAPORTIGHT COAT[®]-SG2 + LEVEL-HF

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(410) 392-2300 (800-394-1410)

SECTION 07 26 19
SURFACE APPLIED MOISTURE VAPOR MITIGATION SYSTEM + CEMENTITIOUS SELF LEVELING
UNDERLAYMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials, tools and equipment as necessary to perform installation of a surface (topically) applied moisture mitigation system (vapor retarder) overlaid with a cementitious self-leveling underlayment on new and/or existing concrete slabs as shown on drawings and as specified in this section.
- B. Repairs and preparation of concrete floors.
- C. Related Sections: **(Specifier: Delete or add necessary Sections)**
 - 1. See section 033000 Cast-in-Place Concrete.
 - 2. See section 035416 Hydraulic Cement Underlayment
 - 3. See section 096200 Specialty Flooring.
 - 4. See section 096300 Masonry Flooring.
 - 5. See section 096400 Wood Flooring.
 - 6. See section 096500 Resilient Flooring.
 - 7. See section 096600 Terrazzo Flooring.
 - 8. See section 096700 Fluid-Applied Flooring.
 - 9. See section 096800 Carpet.

1.2 REFERENCES

- A. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 1998.
- B. ASTM E 1907 – Standard Practices for Determining Moisture-Related Acceptability of Concrete Floors to Receive Moisture-Sensitive Finishes; 1997.
- C. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials; 1995.
- D. ASTM D 4541 B - Pull-Off Strength of Coatings; 1995, Modified.
- E. ASTM F2170 – Relative Humidity in Concrete Floor Slabs Using in Situ Probes.

1.3 SUBMITTALS

- A. General:
Submit manufacturer's certification that proposed materials, details and systems as indicated and specified fully comply with manufacturer's details and specifications. If any portion of Contract Documents does not conform to manufacturer's standard recommendations, submit notification of portions of design that are at variance with manufacturer's specifications.

- B. Product Data:
 - 1. Submit manufacturer's literature, installation instructions and SDS (Safety Data Sheet) for each product.
 - 2. Test data: Submit independent testing laboratory data for product, evidencing:
 - a. up to 95% reduction of water vapor transmission (tested as per ASTM E 96-95).
 - b. product is insensitive to alkaline environment up to pH 14 (tested as per ASTM D 1308).

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. Company specializing in manufacturing products specified in this Section with minimum 10 years documented experience.
- B. Installer Qualifications:
 - 1. Acceptable to manufacturer with documented experience on at least 3 projects of similar nature in past 5 years and/or training provided by the product manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store in a dry, well ventilated area at minimum 50 deg F (10 deg C) and maximum 90 deg F (32 deg C).
- B. Deliver materials in manufacturer's unopened containers fully identified with brand, type, grade, class and all other qualifying information. Provide Safety Data Sheets for each product.

1.6 SYSTEM REQUIREMENTS

- A. Coordinate floor sealing installation with other trades.
- B. Provide materials and accessories in timely manner so as not to delay Work.

1.7 PROJECT CONDITIONS

- A. Maintain surfaces to be sealed and surrounding air temperature at not less than 50 deg F (10 deg C).
- B. Exercise caution when temperatures exceed 90 deg F (32 deg C).

PART 2 - PRODUCTS

2.1 TOPICAL MOISTURE MITIGATION SYSTEM

- A. Approved Manufacturers: AQUAFIN, Inc. 505 Blue Ball Rd., #160, Elkton, MD, Phone (800) 394-1410 or (410) 392-2300; Fax (410) 392-2324; e-mail info@aquafin.net.
- B. Requests for substitutions will be considered only if submitted to the architect/engineer in writing and must include substantiation of product performance, 10 days prior to the original bid date.
- C. One-Coat Moisture Vapor Emission Reduction Control System (concrete floor sealer) consisting of a two-component, moisture tolerant, high density, low odor, chemically enhanced epoxy based product which must reduce vapor emissions (MVER) to ≤ 3 lbs./24

hrs*1000 SF or ≤ 85% RH and be compatible with floor finishes and adhesives approved by the manufacturer.

Characteristics:

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|---|---|
| 1. Product: | VAPORTIGHT COAT®-SG2 |
| 2. Component-A and B: | Precise blend of white and yellowish liquid |
| 3. Compressive Strength: (ASTM D-695) | >11,000 psi (>80 Mpa) |
| 4. Flexural Strength: (ASTM D-790) | >4,000 psi (>27 Mpa) |
| 5. Bond/Adhesion: (ASTM D-4541) | >500 psi (>3.5 Mpa) at 28 days |
| 6. Permeance: (ASTM E-96) | <1.0 perm (<5.7E-08 grams/Pa*s*m ²) |
| 7. Alkaline Resistance: (ASTM D-1308) | up to pH 14 |
| 8. Vapor Reduction: (ASTM E-96) | up to 95% |
| 9. VOC: | ≤50 g/L |
| 10. Cured for installation of flooring: | 12 hrs at 73 deg F (23 deg C) |
| 11. pH on cured surface: | 7 |

- D. Oven dried #20 – 50 silica sand (ASTM E11, No. 18 – 35 sieve sizes for full broadcast (to “rejection”) into the fresh (wet) SG2.

2.2 HYDRAULIC CEMENT UNDERLAYMENT

- A. Approved Manufacturers: AQUAFIN, Inc. 505 Blue Ball Rd., #160, Elkton, MD, Phone (800) 394-1410 or (410) 392-2300; Fax (410) 392-2324; e-mail info@aquafin.net.
- B. Requests for substitutions will be considered only if submitted to the architect/engineer in writing and must include substantiation of product performance, 10 days prior to the original bid date.
- C. Hydraulic Cement-based Self-Leveling Underlayment with the following characteristics:
- | | |
|--------------------------------------|-----------------------------|
| 1. Product: | LEVEL-HF |
| 2. Aggregate state: | Powder |
| 3. Application: | Pail, barrel mix or pump |
| 3. Compressive Strength: (ASTM C109) | ~5000 psi (~34.5 MPa) @ 28d |
| 4. Flexural Strength: (ASTM C348) | ~1100 psi (~7.6 MPa) @ 28d |
| 5. pH: | 11 |
| 6. VOC: | 0 g/L |
- D. Water shall be clean, potable, and sufficiently cool.
- E. Primer: No primer required if applied over fully sand broadcasted SG2.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all construction substrates and conditions under which concrete floor sealer material (SG2) is to be installed. Do not proceed with the concrete floor sealer installation until unsatisfactory conditions are corrected.
- B. Assure before application that surfaces to be treated do not contain any kind of sealer (sodium, potassium, etc.), chlorides, oil, grease, dirt, curing compounds, or any substance that might act as a bond breaker.

- C. Anhydrous Calcium Chloride Testing as per ASTM F-1869, and/or RH as per ASTM F2170 and/or concrete core analysis.
 - 1. Before installation of concrete floor sealer (SG2): use tests carried out by Architect/Engineer during study phase, and confirm by testing through installer or independent laboratory.

3.2 PREPARATION

- A. Protect adjacent surfaces not designated to receive SG2 concrete floor sealer.
- B. Substrate preparation:
 - 1. Remove existing floor coverings, coatings and adhesives down to bare concrete, curing compounds, efflorescence, dust, grease, laitance, etc. with steel shot blasting, abrasive (sand) blasting or grinding using a diamond cup blade. Acid etching is not allowed.
 - 2. Assure that all slabs have concrete surface profile ICRI CSP 3 - 5 for mechanical bond. Smooth surfaces are not acceptable, they must be steel shot blasted.
 - 3. Burn off reinforcing fibers and collect and vacuum remains.
 - 4. Repair defective areas such as honeycombs, cracks or other defects with a suitable repairing or manufacturer recommended mortar.
 - 5. Treat saw cut and expansion joints as per manufacturer's application guideline.
 - 6. Install cementitious underlayment, leveling mortars, flash patching, on top of surface applied concrete floor sealer (SG2).
 - 7. Carefully rinse or pre-dampen several times all the surfaces to be treated with clean water, leave no standing water.

3.3 INSTALLATION

- A. Mix concrete floor sealer (SG2) material in proportions recommended by manufacturer's printed instructions.
- B. Apply concrete floor sealer (SG2) material in quantities as per manufacturer's specifications and recommendations.
 - 1. Apply SG2 in one coat at 75 SF/gal = 160 SF/2.2 gal kit (~21 mils WFT).
 - 2. Apply using roller or notched squeegee to the still moist substrate, and carefully scrub it into the pores with a long handled scrub brush. Follow with a roller to achieve a uniform coverage.
- C. Immediately (within 2 minutes) broadcast clean, dry, fresh water washed and dried #20-50 silica sand (0.5 to 1.0 mm) to "rejection" (full broadcast) or at a rate up to 30-50 lb/100 SF (1.5 kg/m²) into the fresh/wet concrete floor sealer (SG2). Walk over fresh/wet SG2 using shoes with attached spikes.
- F. Let fully broadcasted SG2 cure for minimum 12 hrs. as per manufacturer's instructions, then broom sweep and vacuum the surface to remove all loose sand. The clean, prepared surface of the sand is the priming system for the LEVEL-HF underlayment. No additional priming is required.
- G. Mix and pour LEVEL-HF at 3/8" (9.5 mm) thickness over the firmly sanded SG2 surface as per manufacturer's instructions.

- H. It is not necessary to re-test the substrate for moisture emissions prior to installing the coating (SG2) or floor covering (LEVEL-HF).

3.3 FIELD QUALITY CONTROL

- A. There is no in-situ test method applicable for this system. Where specified, an entire unopened bag/unit of the product to be installed has to be sent to an independent testing facility to perform testing.

3.4 ACCEPTANCE

- A. Remove left over materials and any foreign material resulting from the work from the site.
- B. Clean adjacent surfaces and materials. Protect the underlayment (LEVEL-HF) from abuse by other trades with plywood, Masonite or other suitable protection materials.

END OF SECTION

Project: (04/17)