

GUIDE SPECIFICATION
VAPORTIGHT COAT®-SG3

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

SECTION 072600
SURFACE APPLIED VAPOR REDUCTION SYSTEMS

or

SECTION 099656
EPOXY MOISTURE MITIGATION SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials, tools and equipment as necessary to perform installation of a surface applied moisture mitigation system (vapor retarder) on new and/or existing concrete slabs free of oil contamination or previously treated with a sealer, 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 096200 Specialty Flooring.
 - 3. See section 096300 Masonry Flooring.
 - 4. See section 096400 Wood Flooring.
 - 5. See section 096500 Resilient Flooring.
 - 6. See section 096600 Terrazzo Flooring.
 - 7. See section 096700 Fluid-Applied Flooring.
 - 8. 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 F 2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2009.
- C. ASTM E 1907 - Standard Practices for Determining Moisture-Related Acceptability of Concrete Floors to Receive Moisture-Sensitive Finishes; 1997.
- D. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials; 1995.
- E. ASTM D 4541 B - Pull-Off Strength of Coatings; 1995, Modified.
- F. ASTM E 648-03 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems using a Radiant Heat Energy Source.

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 do 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 MSDS (Material Safety Data Sheet) for each product.
 - 2. Test data: Submit independent testing laboratory data for product, evidencing:
 - a. up to 97% 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)
 - c. no after flaming, no delamination, warpage or flaming pieces when subjected to radiant heat as per ASTM E 648-03.

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 Material 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 MANUFACTURERS

- 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.

2.2 MATERIALS

- A. Moisture Vapor Emission Reduction Control System (concrete floor sealer): One-part system consisting of a two-component, 100% solids, solvent free, 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 less and be compatible with floor finishes and adhesives approved by the manufacturer. Characteristics:
 - 1. Product: VAPORTIGHT COAT®-SG3
 - 2. Component-A and B: Precise blend of clear and yellowish liquid
 - 3. VOC content: 0 g/L
 - 4. Bond/Adhesion: (ASTM D-4541) >220 psi (>1.5 Mpa) at 28 day old concrete
 - 5. Permeance: (ASTM E-96) <0.5 perm (<3.1E⁻⁰⁸ grams/Pa*s*m²)
 - 6. Alkaline Resistance: (ASTM D-1308) up to pH 14
 - 7. Vapor Reduction: (ASTM E-96) up to 97%
 - 8. Cured for installation of flooring: 12 hrs at 73 deg F (23 deg C)
 - 9. pH on cured surface: 7
 - 10. Average Critical Radiant Flux: 1.00 W/cm² (ASTM E 648-03)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all construction substrates and conditions under which concrete floor sealer material is to be installed. Do not proceed with the concrete floor sealer installation until unsatisfactory conditions are corrected.
- B. Assure that surfaces to be treated do not contain any kind of sealer or organic compounds.
- C. Anhydrous Calcium Chloride Testing as per ASTM F-1869 and/or Relative Humidity Testing as per ASTM F-2170:
 - 1. Before installation of concrete floor sealer: use tests carried out by Architect/Engineer during study phase, and confirm by testing through installer or independent laboratory prior to installation of concrete floor sealer.
 - 2. After installation of concrete floor sealer: not required by manufacturer of specified concrete floor sealer, unless to be carried out on a test application, specified during bid stage.
 - 3. Alternatively or in addition to Calcium Chloride Testing use Relative Humidity tests carried out by Architect/Engineer during study phase, and confirm by testing through installer or independent laboratory prior to installation of concrete floor sealer.

3.2 PREPARATION

- A. Protect adjacent surfaces not designated to receive 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 (run in low gear to prevent polishing effect). Acid etching is not allowed.

2. Assure that all slabs have surface profile ICRI CSP 3 - 5 (ICRI, Des Plaines, IL, Guideline No.03732.) for mechanical bond (i.e. medium grit sandpaper). Smooth surfaces are not acceptable, they must be 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.
7. Do not apply floor sealer to unprotected surfaces or surfaces where water has accumulated (puddles).

3.3 INSTALLATION

- A. Mix concrete floor sealer material in proportions recommended by manufacturer.
- B. Apply concrete floor sealer material in quantities as per manufacturer's specifications and recommendations.
 1. Apply in one coat at specified rate.
 2. Apply using non-shed synthetic 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 non-shed synthetic roller to achieve a uniform coverage.
- C. Where specified install leveling course as per manufacturer's specifications and recommendations.
- D. Where specified install floor covering as per manufacturer's specifications and recommendations.
- G. Note:
 1. Water based adhesives under VCT, sheet vinyl, linoleum, rubber backed carpet or other non-breathable flooring systems require a cementitious underlayment on top of the concrete floor sealer for their curing process. Consult adhesive manufacturer for recommended minimum thickness of cementitious underlayment.
 2. Pressure sensitive adhesives installed directly over concrete floor sealer require a longer "tack" time than listed on manufacturer's literature to prevent adhesive moisture entrapment.

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.

END OF SECTION

Project: (12/10)