



VEXCON
CHEMICALS, INC.

Concrete solutions for architects, engineers and builders since 1974
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SECTION 09 96 00 High Performance Coatings

Specifier Note: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-part format. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building codes. Coordinate this section with other specification sections and the drawings. Delete all “Specifier Notes” when editing this section.

Specifier Note: PowerCoat Epoxy HD High Performance Epoxy floor coating is engineered to deliver superior performance and value for a wide range of industrial and commercial environments. This protective and decorative breathable coating is extremely tough, providing excellent resistance to damage from wear, abrasion, impact and chemical attack. PowerCoat Epoxy HD forms a seamless, breathable attractive surface that is highly durable, long-lasting and easy to clean and maintain.

Colored flakes can be blended to produce flooring that is both aesthetically pleasing and durable.

All PowerCoat products feature Vexcon’s breathable technology which allows moisture vapor to pass through rather than becoming trapped, preventing whitening, blistering, loss of adhesion (peeling) and flaking.

Specifier Note: This guide specification is provided as a start point for the design professional. Any modifications to the specification are the responsibility of the design professional. Contact Vexcon Chemicals with any questions regarding this product.

PART 1 – GENERAL

1.1 SUMMARY

- A. This section specifies PowerCoat Epoxy HD [Clear] [Pigmented] a breathable high performing solvent based epoxy coating for [interior] [exterior] [new] or [existing] concrete floors.

Specifier Note: Edit the list of related sections as required for the project. List other sections dealing with the work directly related to this section.

1.2 RELATED SECTIONS

- A. 033000 - Cast In Place Concrete

1.3 REFERENCES

A. American Society for Testing Materials - ASTM

1. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM D 4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
3. ASTM D 2047 Standard Test Method for Static Coefficient of Friction of Coated Flooring Surface as Measured by the James Machine.
4. ASTM G 53 Standard Practice for Operating Light-and Water Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials.
5. ASTM D 2240 Standard Test Method for Rubber Property-Durometer Hardness
6. ASTM D 3363 Standard Test Method for Film Hardness by Pencil Test
7. ASTM D 4060 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abrader.
8. ASTM D 523 Standard Test Method for Specular Gloss
9. ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Sub-floor Using Anhydrous Calcium Chloride
10. ASTM D 1653 Standard Test Methods for Water Vapor Transmission of Organic Coating Films
11. ASTM D 968 Standard Test Method for Abrasion Resistance of Organic Coatings by Falling Abrasive.
12. ASTM D 1308 Standard Test Method for Effect of House Hold Chemicals on Clear and Pigmented Organic Finishes.
13. ASTM D 1640 Standard Test Methods for Drying, Curing or Film Formation of Organic Coatings at room Temperature.
14. ASTM D 2369 Standard Test Method for Volatile Content of Coatings
15. ASTM C 309 Standard Specification for Membrane Forming Curing Compounds
16. ASTM C 1315 Standard Specification for Liquid Membrane Forming Compounds having Special Properties for Curing and Sealing Concrete.

B. United States Federal Specifications

1. TT-C-535B Coating, Epoxy, Two Component, for Interior Use on Metal, Wood, Wallboard, Painted Surfaces, Concrete and Masonry
2. United States Department of Agriculture Acceptance

C. United States Environmental Protection Agency (EPA)

1. Method 24 – Determination of Volatile Matter Content of Surface Coatings

1.4 SUBMITTALS

- A. Comply with section 013300 – Submittal Procedures
- B. Manufactures product data sheet: Include manufacturer's specifications, surface preparation, special notes and application instructions.
- C. Manufactures material safety data sheet.
- D. Test Data: Confirm compliance with specified requirements from independent testing laboratory.
- E. Samples: Submit 8" x 10" drawdown samples for each color. Samples shall be made of coating specified and color matched as selected by the architect/owner.
- F. Applicators Quality Assurance: Submit list of minimum of 5 completed comparable projects applying epoxy coatings. Include for each project:
 - 1. Project name and location
 - 2. Name of contractor, architect and coating manufacturer
 - 3. Approximate size of project and quantity epoxy coatings applied
 - 4. Date of completion
- G. Comply with section 017700 – Closeout Procedures.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Specialize in manufacture of epoxy coatings with a minimum of 10 years successful experience.
- B. Installation Qualifications: Firm certified in writing by manufacturer as an approved applicator.
- C. Regulatory Requirements: Products shall comply with federal, state and local VOC regulations.
- D. Source Limitations: Materials shall be products of a single manufacturer.
- E. Mock-Up:
 - 1. Provide a 10' x 10' sample for each specified coating, to be applied to each substrate to receive coating using same application equipment and methods as finished job.
 - 2. Mock-up should be applied at the job site on the same surface to be coated as selected by the architect/owner/general contractor.
 - 3. Obtain written approval from architect/owner prior to proceeding.
 - 4. Leave mock-up in place as part of completed project.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage/ Handling: Store in tightly sealed original factory container. Keep from freezing and exposure to moisture. Store at room temperature prior to use. Care should be taken to keep dirt, water and contaminants away from the opening of containers.
- C. Do not use materials beyond manufacturer's shelf life limits.

1.7 PROJECT CONDITIONS

A. Environmental Requirements

1. Follow all manufacturer's written dry time instructions.
2. Do not apply epoxy coating when surface temperatures are below 60°F
3. Do not apply epoxy coating when surface temperatures are above 85°F
4. Do not apply epoxy coating on windy days
5. Keep from freezing
6. Mechanically mix well before each use
7. Coating when adverse weather conditions are expected within 12 to 24 hours of application should be avoided
8. Do not apply to frozen, frost or snowy surfaces

1.8 WARRANTIES

- A. Provide manufacturers 5 year warranty that the product will remain adhered to the surface without cracking or peeling and will provide resistance to molds, fungi, and water penetration. Comply with manufacturer's warranty registration procedures.

PART 2 – PRODUCTS

2.1 Acceptable Manufacturer

- A. Vexcon Chemicals 7240 State Road Philadelphia PA 19135
Toll Free Technical Assistance 888.Vexcon1, fax 215.332.9997, website www.vexcon.com
email sales@vexcon.com or techservice@vexcon.com
- B. Substitutions: Not permitted

2.2 Acceptable Materials

- A. Product: PowerCoat Epoxy HD [Clear] [Pigmented] [Custom Color]
- B. Product: PowerCoat Primer [Clear] [Pigmented] [Custom Color]

C. Description: Breathable solvent base primer and epoxy coating

D. Compliances:

1. ASTM E 84: Class A rating
2. ASTM D 4541:
 - a. Primed: 395
 - b. Unprimed: 350
3. ASTM D 2047:
 - a. Smooth: 0.70 average
4. ASTM G 53: 200 hours unprimed: No chalking, delamination or deleterious effects
5. ASTM D 2240:
 - a. Shore A: 95-96
 - b. Shore D: 84-87
6. ASTM D 3363: Pencil hardness: 3H
7. ASTM D 4060: 1000 g load, cs 17 wheels, 2 coats cured 7 days: 0.22 g , 0.8 percent loss per 1,000 cycles.
8. ASTM D 523: Gloss 90 units
9. ASTM F 1869: 3.0#/1000sq.ft./24 hrs. vs. uncoated of 27#/1000sq.ft./24hrs.
10. ASTM D 1653: 3.30 perms
11. ASTM D 968: Greater than 30 liters/mil.
12. ASTM D 1308: Chemical Resistance 30 day immersion. See Vexcon's Technical Note 168 for complete listing. Available on the web at vexcon.com.
13. ASTM D 1640: Drying Time
 - a. Set to touch: 1 hr
 - b. Tack free: 2 hrs
 - c. Dry hard: 4 hrs
 - d. Dry through: 4 hrs
14. ASTM D 2369: Minimum solids
 - a. 61% [Clear]
 - b. 70% [Pigmented]
15. ASTM C 309: Meets or exceeds
16. ASTM C 1315: Meets or exceeds
17. TT-C 535B: Section 3.4.10: Meets or exceeds
18. USDA: Incidental food contact: Complies

19. US EPA method 24 - VOC

- a. >400 grams/liter or >3.33 #/gal [Clear]
- b. >340 grams/liter or >2.83#/gal [Pigmented]

2.3 Acceptable Material

- A. Product: PowerCoat Primer [Clear] [Pigmented].
- B. Description: Solvent base cure and prime coat for PowerCoat Epoxy HD.
- C. Compliances:
 - 1. ASTM C 309 Standard Specification for Membrane Forming Curing Compounds.
 - 2. ASTM C 1315 Standard Specification for Liquid Membrane Forming Compounds having Special Properties for Curing and Sealing Concrete.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify by examination that the concrete and masonry surfaces are acceptable to receive the epoxy coating. Do not proceed with work until any unsatisfactory conditions have been corrected. Notify architect/general contractor in writing if surfaces are not acceptable to receive the specified product
- B. Commencement of installation will be construed as the applicators acceptance of surface conditions.

3.2 PROTECTION

- A. Adjoining glass, vegetation, metal and painted surfaces should be protected from over spray and splash. Inadvertent splashes should be removed following manufacturers instructions.
- B. Protect completed coated surface from dirt and damage.

3.3 SURFACE PREPARATION

- A. Prepare surface in accordance with manufacturer’s written instructions for specific surface to type to be coated. The use of compatible Vexcon surface prep and specialty cleaning products is recommended.

3.4 MATERIAL PREPARATION

- A. Prepare material in accordance with manufacturer's written instructions. Do not add thinners or dilute.

3.5 APPLICATION

- A. Apply in accordance with manufactures written application instructions.
- B. Apply materials at specified film thickness by method recommended by manufacturer.
- C. Allow each coat to thoroughly dry before re-coating. Follow manufacturers written recommended re-coat and dry times.
- D. Use same lot numbers throughout project.
- E. Make finish coats smooth, uniform in color and free of brush or roller marks, laps, runs, dry spray, overspray and skipped or missed areas.

Specifier Note: Use the following sentence when specifying a nonslip finish

- F. Apply epoxy coating with Vexcon Epoxy Non-Slip Additive in accordance with manufacturer's instructions.

Specifier Note: Use the following sentence when specify a Deco Chip finish

- G. Apply Vexcon Deco Chips in accordance with manufacturer's instructions.

3.6 FIELD QUALITY CONTROL

- A. Inspection: Architect/owner to visually inspect surface. Any defects will be documented and provided to applicator/contractor/general contractor and Vexcon.
 - 1. Applicator/contractor will touch-up, repair and restore any defects in the finished surface until accepted by architect/owner.
 - 2. Applicator/contractor will receive written acceptance of final surface from architect.
 - 3. Applicator/contractor will provide Vexcon with all documentation and application required for warranty.

3.7 CLEANING AND PROTECTION

- A. During course of work, remove discard coating materials, rubbish, cans, rags and other discarded materials from the project site.
- B. Protect completed coated surface from dirt and damage.
- C. After completion of application, clean glass and splattered surfaces.

END OF SECTION