

# Petra Coatings LLC - Epoxy Floor Coatings

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## Architectural Specification - Natural Quartz, Double Broadcast

100% Solids Epoxy - Silica Sand Double Broadcast with Aliphatic Urethane Top Coat

### Part 1: General

#### 1. SYSTEM DESCRIPTION

- A. Squeegee & Roller-applied 100% solids, penetrating epoxy primer followed by a squeegee & roller-applied, 100% solids epoxy basecoat with a broadcast of 40 mesh silica sand, followed by an additional squeegee & roller-applied basecoat 100% solids epoxy with a second broadcast of 40 mesh silica sand and sealed with a grout coat of 100% solids epoxy and top coat of aliphatic urethane to achieve 80-100 mil thick, heavy-duty floor system.
- B. This system shall be applied to the prepared substrate(s) as defined by the plans strictly in accordance with the manufacturer's recommendations.

#### 2. SUBMITTALS

- A. Product Data
  - 1. Current edition of manufacturer's product literature including physical data, chemical resistance, surface preparation, and application instructions.
- B. Samples
  - 1. A hard sample of the proposed system shall be submitted to represent the finished system.
- C. Warranty
  - 1. Manufacturer's standard warranty
  - 2. Applicator's standard warranty

#### 3. QUALITY ASSURANCE

- A. Qualifications
  - 1. The manufacturer shall have a minimum of ten (10) years' experience in the production, sales, and technical support of polymer-based floor coatings.
  - 2. The applicator shall have a minimum of three (5) years' documented experience in the application of polymer floor coatings to concrete floors, and with 5 projects of similar size and complexity.
  - 3. Proposed suppliers shall provide certification that they have ten (10) years' experience in the production of polymer floor coatings and be required to meet all provisions of this specification as well as provide evidence for compatibility between components to the satisfaction of the Architect.
- B. Pre-Bid Conference
  - 1. A pre-bid conference should be held between prospective applicators and the Architect to review surface preparation, application, clean-up procedures, and design issues.

# Petra Coatings LLC - Epoxy Floor Coatings

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## C. Packing and Shipping

1. All materials are to be delivered to the job site in the manufacturer's original packaging. The product code and other identification marks should be clearly marked and visible.

## D. Storage and Protection

1. Store resin materials in clean, dry, and secure area. Maintain minimum temperature of 55 degrees F and maximum of 90 degrees F.
2. Material Safety Data Sheets are to be kept on site and made readily available for all personnel.
3. Keep containers sealed and ready for use.

## 1.04 PROJECT CONDITIONS

### A. Environmental Requirements

1. Optimum air and substrate temperature for product application is between 68° F (20° C) and 86° F (30° C). For temperatures outside of this range, consult the manufacturer for product application suggestions.
2. Verify the work environment is properly equipped with vapor barriers and perimeter drains.
3. Provide adequate and continuous ventilation during work and after installation of flooring system.
4. Maintain proper lighting throughout the work environment; it is important to have permanent lighting in place or a close equivalent before installation of floor system.
5. Store and dispose of any waste in accordance with regulations of local authorities.

### B. Safety Requirements

1. "No Smoking" signs shall be posted throughout the work area prior to application.
2. The owner shall be responsible for removing any foodstuffs from the work area.
3. Open flames, spark producing tools/items, and ignition sources shall be removed from the work area prior to application.
4. Only work-related personnel shall be allowed within the work area.

## 1.05 WARRANTY

### A. Coordination

1. The manufacturer to offer one-year warranty against defects in materials. Warranties concerning the installation of the material are solely the responsibility of the applicator.

## Part 2: Products

# Petra Coatings LLC - Epoxy Floor Coatings

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1. MANUFACTURERS

- A. Petra Coatings LLC  
533 Red Bird Lane  
Bowie, TX 76230  
Phone: (940) 872-8832  
Fax: (940) 872-8833  
<http://www.PetraCoatings.com>

2. MATERIALS

- A. Primer
  - 1. The primer shall be a 100% reactive, epoxy-based, penetrating primer that exhibits chemical resistance: Petra Coatings, BF-1 Epoxy Primer.
- B. Basecoats
  - 1. The basecoat shall consist of a tough, impact-resistant epoxy coating in thickness capable of accepting aggregate: Petra Coatings, WH-7000.
- C. Broadcast(s)
  - 1. Broadcast 40 mesh silica sand into the wet basecoat, at .33 pounds per square feet until no wet spots are visible (broadcast to refusal).
- D. Grout Coat(s)
  - 1. Grout with a two-component, 100% solids epoxy grout coat: Petra Coatings – Work Horse 7000.
- E. Top Coat(s)
  - 1. Apply 1 to 2 topcoat(s) of a Petra Coatings high performance, aliphatic urethane: Petra Coatings – Aliphatic Urethane.

2.03                      PROPERTIES

- A. The coating system should meet the following physical properties:

Cured System Properties

Chemical Properties	Natural Quartz, Single Broadcast
Compressive Strength, ASTM C695	10,000 psi
Tensile Strength, ASTM D638	2,000 psi
Tensile Elongation ASTM D638	7.5%
Flexural Strength ASTM D790	6,250 psi
Bond Strength to Concrete ACI-403	335 PSI Concrete fails
Hardness, Shore D, ASTM D2240	75/65
Impact Resistance, MIL D-3134	No cracking or delamination
Coefficient of Linear Expansion ASTM D-696	12°F to 140°F

# Petra Coatings LLC - Epoxy Floor Coatings

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Abrasion Resistance Taber Abrader (CS-17 Wheels, 2000gm. Load, 1000 cycles)	Avg. 24.0 mg. loss
Water Absorption, ASTM D570	0.04%
Linear Shrinkage ASTM D-2566	0.02%
Electrical Conductivity	Non-conductive
Flammability, ASTM D635	Self-Extinguishing

## Part 3: Execution

### 1. INSPECTION

#### A. Examination

1. Examine the areas and conditions where Natural Quartz Single Broadcast is to be installed and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the contractor in a manner acceptable to the Architect.
2. Verify that surfaces are smooth and flat within maximum variation of 1/4" in 10'-0" and are ready to receive work.
3. Verify concrete substrate has cured minimum of 28 days and that moisture content of slab is within manufacturer's limitations, and exhibit negative alkalinity, carbonization, or dusting.
4. Verify concrete subfloors on or below grade is adequately waterproofed beneath and at perimeter of slab.
5. Verify floor and lower wall surfaces are free of substances that may impair adhesion of materials.

### 2. PREPARATION

#### A. General

1. Consult the manufacturer's recommendations for concrete substrate preparation before proceeding.

#### B. Patching and Joint Preparation

1. Before application, the floor shall be examined for spalls, pitting, holes, cracks, non-functional joints, etc. These must be treated after preparation and before application. Patch with appropriate resinous patch and joint filler. For functional or expansion joints, these shall be honored ideally, or treated with elastomeric resin having a minimum elongation of 100%.

#### C. Concrete Surfaces

1. Shot-blast, or diamond grind as required to obtain clean, open porous concrete. Remove sufficient material to provide a sound surface, free of laitance, glaze, efflorescence, and any bond-inhibiting curing compounds or form release agents. Remove grease, oil, and other penetrating contaminants. Repair damaged and

# Petra Coatings LLC - Epoxy Floor Coatings

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deteriorated concrete to acceptable condition; leave surface free of dust, dirt, laitance, and efflorescence.

## D. Materials

1. Mix components when required, and prepare materials according to flooring system manufacturer's instructions.

## 3.03 APPLICATION

### A. General

1. The system shall be installed in the order described below:
  - a. Substrate Preparation
  - b. Priming
  - c. Basecoat and Broadcast Applications
  - d. Grout Coat Applications
  - e. Topcoat Applications
2. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system. Refer to manufacturer's concrete preparation instructions for additional recommendations.
3. The surface should be dry prior to application of any of the aforementioned steps. Furthermore, the substrate shall always be kept clean, dry, and free of any contaminants.
4. The handling and mixture of any material associated with the installation of the system shall be in accordance with the manufacturer's recommendations and approved by the Architect.
5. The system shall follow the contours of the substrate unless otherwise specified by the Architect.
6. A neat finish with well defined boundaries and straight edges shall be provided by the applicator.

### B. Priming

1. All areas considered for the application shall be primed with the manufacturer's primer to seal and penetrate the substrate in preparation for applying the basecoat and grout coat.
2. Porous concrete substrates may require additional applications of primer.

### C. Basecoat & Broadcast (s)

1. The basecoat shall consist of the manufacturer's approved epoxy resin with a broadcast of approved silica sand to resurface the floor, seal the surface, and give the floor impact and chemical resistance.

### D. Grout Coat(s)

1. The grout coat(s) shall be consistent with the manufacturer's recommended epoxy grout coat for the system.

### E. Topcoat(s)

## Petra Coatings LLC - Epoxy Floor Coatings

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1. Topcoat(s) shall be consistent with the manufacturer's recommendation for the system.
2. No traffic or equipment shall be permitted on the floor during the curing period.
4. FIELD QUALITY CONTROL
  - A. Tests & Inspection
    1. The following tests shall be performed by the applicator and recorded during application to submit to the Architect:
      - a. Temperature during installation
        1. Air
        2. Substrate
        3. Dew Point
      - b. Humidity %
5. PROTECTION
  - A. Prohibit traffic on floor finish for 48 hours after installation. Barricade area to protect flooring until cured.