

## PART 1 GENERAL

### 1.1 SUMMARY

- A. Provide labor, materials, equipment and supervision necessary to install a high performance epoxy flooring system as outlined in this specification.
- B. The manufacturer's application instructions for each product used are considered part of this specification and should be followed at all times.
- C. Related Sections:
  - 1. Section 03 30 00: Cast-in-Place Concrete
  - 2. Section 07 90 00: Joint Protection
  - 3. Section 07 95 00: Expansion Control

### 1.2 SYSTEM DESCRIPTION

- A. NeoQuartz HD shall be a complete system of compatible materials supplied by Neogard to create a high performance epoxy flooring system.
- B. NeoQuartz HD shall be designated for application on the specific type of substrate indicated on the drawings.

### 1.3 SUBMITTALS

- A. Technical Data: Submit manufacturer's product data, Safety Data Sheets (SDS) and installation instructions.
- B. Samples: Submit samples of NeoQuartz HD flooring system. Samples shall be construed as examples of finished color and texture of the system only.
- C. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the NeoQuartz HD flooring system.
- D. Warranty: Submit copy of manufacturer's standard sample warranty, identifying the terms and conditions stated in section 1.7 Warranty.

### 1.4 QUALITY ASSURANCE

- A. Supplier Qualifications: NeoQuartz HD, as supplied by Neogard, is approved for use on this project.
- B. Applicator Qualifications: Applicators shall be approved to install specified system.
- C. Requirement of Regulatory Agencies: Specified materials shall meet existing Federal, State and local VOC regulations.
- D. Field Sample:
  - 1. Install a field sample of at least 100 square feet at the project site or pre-selected area as agreed to by owner's representative, applicator and manufacturer.
  - 2. Apply material in accordance with manufacturer's written application instructions.
  - 3. Field sample will be standard for judging color and texture on remainder of project.
  - 4. Maintain field sample during construction for workmanship comparison.
  - 5. Do not alter, move, or destroy field sample until work is completed and approved by Owner's representative.

### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Materials shall be delivered in original sealed containers, clearly marked with supplier's name, brand name and type of material.

- B. Storage and Handling: Recommended material storage temperature is 75°F (23°C). Handle products to prevent damage to container. All materials shall be stored in compliance with local fire and safety requirements. Do not store at high temperatures or in direct sunlight.

#### 1.6 PROJECT CONDITIONS

- A. Read and follow the SDS and container labels for detailed health and safety information.
- B. Apply materials only when substrate temperature is 50°F (10°C) or greater, and to a clean, dry surface. Do not apply if precipitation is imminent, or to a damp, unclean or frosty surface. Maintain a minimum substrate temperature of 50°F (10°C) for a minimum of 48 hours before, during and after installation, or until cured.
- C. Apply materials only if ambient temperature between 50°F (10°C) and 85°F (29°C). Ambient temperature must be a minimum of 5°F (3°C) above dew point. Cure times, flow/leveling, cured physical properties, and overall appearance will be adversely affected if products are applied outside of these temperature ranges.
- D. Due to hydrostatic, capillary and moisture vapor pressure, substrates in contact with ground must have a properly installed, effective vapor barrier. Moisture vapor emission of concrete not to exceed 3 lbs/1,000 sq. ft./24 hrs, when tested by the quantitative calcium chloride test method (ASTM F1869). Relative Humidity is not to exceed 75% when tested by In-situ Probe Test (ASTM F2170).
- E. Coordinate flooring work with other trades. Applicator shall have sole right of access to the specified area for the time needed to complete the application and allow the flooring system to cure adequately.
- F. Protect adjacent surfaces from damage resulting from installation of the system. If necessary, mask and/or cover adjacent surfaces, fixtures, equipment, and others by suitable means.
- G. Provide adequate ventilation.
- H. Provide a suitable work station to mix coating materials.
- I. Maintain work area in a neat and orderly condition, removing empty containers, rags and trash daily from the site.

#### 1.7 WARRANTY

- A. Upon request, Neogard shall offer a manufacturer's standard warranty for institutional, commercial, industrial, and high-rise/multi-family residential projects only, upon substantial completion of the application and receipt of a properly executed warranty request form.

## PART 2 MATERIALS

### 2.1 MANUFACTURER

- A. Neogard, A part of Hempel, 2728 Empire Central, Dallas, TX 75235, 214-353-1600, [www.neogard.com](http://www.neogard.com).

### 2.2 MATERIALS

- A. NeoQuartz HD materials (Hempel product numbers in parentheses):
  1. Crack and Joint Filler: 70718/70719 (25000) flexible epoxy.
  2. Sealant: 70991 (47XJB) or other polyurethane sealant approved by Neogard.
  3. Mortar Aggregate: 86364 (66030) 20/40 mesh silica sand.
  4. Quartz Broadcast Aggregate: Blended colored quartz.
  5. Primer: 70714/70715 (45060) clear epoxy.
  6. Trowel Grade Mortar: 70714/70715 (45060) clear or pigmented epoxy.
  7. Broadcast Coat: 70714/70715 (45060) pigmented epoxy.
  8. Seal Coats: 70734/70735 (45040) low yellowing epoxy.
  9. Optional Seal Coat 70869/70819 (57031) polyaspartic clear.

### 2.3 MATERIAL PERFORMANCE CRITERIA

- A. Typical physical properties of cured 70734/70735 clear epoxy used on this project are:
1. Compressive Strength, ASTM D695, 11,000 psi
  2. Tensile Strength, ASTM D638, 8,000 psi
  3. Elongation at Break, ASTM D638, 14%
  4. Flexural Strength, ASTM D790, 10,000 psi
  5. Flexural Modulus, ASTM D790, 400,000 psi
  6. Modulus of Elasticity, ASTM D790, 170,000 psi
  7. Shore D, ASTM D2240, 82
  8. Adhesion, ASTM D4541, 400 psi
  9. Water Resistance, ASTM D570, < 2%
  10. MVT (20 mils), ASTM E96, 0.10 Perm
  11. Flammability, ASTM D635, Pass
  12. Taber Abrasion, ASTM D4060, 89 mg (1,000 CS-17)
- B. Typical physical properties of cured 70714/70715 epoxy used on this project are:
1. Tensile Strength, ASTM D638, 3,700 psi
  2. Elongation, ASTM D638, 25%
  3. Compressive Strength, ASTM D695, 25,300 psi
  4. Flexural Strength, ASTM D790, 3,180 psi
  5. Flexural Modulus, ASTM D790, 57,700 psi
  6. Water Resistance, ASTM D570, 0.21%
  7. MVT (10 mils), ASTM E96, 0.16
  8. Taber Abrasion, ASTM D4060, 25 mg (1,000 CS-17)
  9. Shore D, ASTM D2240, 78
  10. Adhesion, ASTM D4541, 350 psi
  11. Flammability, ASTM D635, Pass
- C. Typical physical properties of cured 70869/70819 clear polyaspartic used on this project are:
1. Tensile Strength, ASTM D2370, 3,362 psi
  2. Elongation, ASTM D412, 63%
  3. Taber Abrasion, ASTM D4060, 55 mg (1,000 CS-17)
  4. Shore D, ASTM D2240, 70
  5. Anti-Microbial, JIS Z 2801-2010, Pass
- D. The above tested results are typical values. Individual lots may vary up to 10% from the typical value. Further technical information can be found at [www.neogard.com](http://www.neogard.com).

## 2.4 ACCESSORIES

- A. Miscellaneous materials such as cleaning agents, adhesives, closed cell backer rod, deck drains, and others, shall be compatible with the specified NeoQuartz HD system.

## 2.5 MIXING

- A. Comply with manufacturer's instructions for mixing procedures. Refer to Neogard Product Data Sheets for detailed mixing instructions.

# PART 3 EXECUTION

## 3.1 EXAMINATION

- A. Verify that the work done under other sections meets the following requirements:
1. That the concrete deck surface is free of ridges and sharp projections, sound and dry.
  2. That the concrete was cured for a minimum of 28 days. (Minimum of 3,500 psi compressive strength). The use of concrete curing agents, if any, shall be of the sodium silicate base only; others require written approval by Neogard.
  3. That damaged areas of the concrete substrate be restored to match adjacent areas. Use 70714/70715 epoxy and oven-dry silica aggregate approved by Neogard for filling and leveling at a ratio of one part epoxy mixed with four parts aggregate by volume.

4. That due to hydrostatic, capillary and moisture vapor pressure, substrates in contact with ground must have a properly installed, effective vapor barrier. Moisture vapor emission of concrete not to exceed 3 lbs/1,000 sq. ft./24 hrs, when tested by the quantitative calcium chloride test method (ASTM F1869). Relative Humidity is not to exceed 75% when tested by In-situ Probe Test (ASTM F2170).

### 3.2 PREPARATION

- A. **Cleaning:** Surfaces contaminated with oil or grease shall be vigorously scrubbed with a power broom and a strong non-sudsing detergent. Thoroughly wash, clean, and dry. Areas where oil or other contaminants penetrate deep into the concrete may require removal by mechanical methods. Do not apply materials unless surface is clean and dry.
- B. **Shot-Blasting:** Required surface preparation method for remedial construction is also the preferred method for new construction. Mechanically prepare surface by shot-blasting to industry standard surface texture (ICRI's CSP3-4) without causing additional surface defects in substrate. Shot-blasting does not remove deep penetrating oils, grease, tar or asphalt stains. Proper cleaning procedures should be followed to ensure proper bonding of the deck coating. Note: If shot-blasting is not practical, contact Neogard Technical Service.
- C. **Cracks:** After shotblasting, fill all non-moving cracks with 70714/70715 epoxy, mixed with P1934 fumed silica to form a paste. The mix ratio is one part 70714/70715 epoxy to 3 parts P1934 fumed silica by volume.
- D. **Control and Cold Joints:** Fill control and cold joints flush with 70718/70719 flexible epoxy at 3/4" depth. Install backer rod if necessary to limit depth to 3/4"
- E. **Expansion and Isolation Joints:** Expansion and isolation joints  $\leq$  1" in width, shall be sealed with 70991 sealant. Sealant shall be applied to inside of joint only, not applied to floor surface.

### 3.3 APPLICATION

- A. **Factors That Affect Dry Film Thickness:** Volume solids, thinning, surface profile, application technique and equipment, overspray, squeegee, brush and roller wet out, container residue, spills and other waste are among the many factors that affect the amount of wet coating required to yield proper dry film thickness. To ensure that specified dry film thickness is achieved, use a wet mil gauge to verify actual thickness of wet coating applied, adjusting as needed for those factors which directly affect the dry film build.
- B. **Primer:** Mix and apply 70714/70715 clear epoxy at a rate of 200 sf/gal (8 wet mils) to yield 8 dry mils. Immediately lightly broadcast 86364 aggregate into wet primer, creating an anchor profile for mortar mix. Allow to cure until tack free (8–9 hours at 75°F, 23°C).
- C. **Trowel Grade Mortar:** Mix 70714/70715 clear or pigmented epoxy with 86364 aggregate at a ratio of 1 part mixed epoxy to 4 parts aggregate by volume. Screed, rake or trowel mix to desired thickness. Smooth and tightly close surface by hand or power trowel. Lightly mist surface with mineral spirits or 7055 Odorless Reducer (086JB) as a lubricant to help smooth surface. Allow to cure 6–12 hours at 75°F (23°C). Lightly sand to remove rough spots or trowel marks.
- D. **Broadcast Coat:** Mix 70714/70715 pigmented epoxy at a ratio of 2:1 by volume. Apply at a rate of 80 sf/gal (20 wet mils) to yield 20 dry mils. Backroll to ensure even coverage.
- E. **Aggregate:** Broadcast color quartz aggregate into wet epoxy until refusal at a rate of approximately 50 lbs/100 sf. Allow to cure 8-12 hours at 75°F (23°C) Once cured remove excess aggregate and lightly sand to remove rough spots.
- F. **First Seal Coat:** Mix 70734/70735 clear epoxy or 70869/70819 clear polyaspartic. Apply at a rate of 160 sf/gal (10 wet mils) to yield 10 dry mils. Allow to cure until tack free 12-16 hours at 75°F (23°C).
- G. **Second Seal Coat:** Mix 70734/70735 clear epoxy or 70869/70819 clear polyaspartic and apply at a rate of 200 sf/gal (8 wet mils) to yield 8 dry mils. Allow to cure 24 hours before foot traffic and 48 hours before heavy loads.
- H. **Applicator is responsible for applying sufficient coating to the substrate.**

# Guide Specification

## NeoQuartz HD

### Section 09 67 23 Resinous Flooring



#### 3.4 CLEANING

- A. Remove debris resulting from completion of flooring operation from the project site.
- B. Refer to the Preventive Maintenance Manual for Neogard Floor Coating Systems for typical cleaning methods.

#### 3.5 PROTECTION

- A. After completion of application, allow system to cure for 24 hours at 75°F (23°C) before allowing foot traffic, 48 hours before allowing heavy load.

**END OF SECTION**

Issued by: Hempel (USA) – Neogard NeoQuartz HD

This Guide Specification supersedes those previously issued.

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