

**Guide Specification****PART 1 GENERAL****1.1 SUMMARY**

- A. Provide labor, materials, equipment and supervision necessary to install a heavy duty cementitious polyurethane and color flake floor system as outlined in this specification to new or existing concrete surfaces.
- 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 92 00 - Joint Sealants
 - 3. Section 07 95 00 - Expansion Control

1.2 SYSTEM DESCRIPTION

- A. NEOCRETE® SL FLAKE shall be a complete system of compatible materials manufactured by NEOGARD® to create a seamless flooring surface.
- B. NEOCRETE® SL FLAKE shall be designated for application on the specific type of substrate indicated on the drawings.

1.3 SUBMITTALS

- A. Product Data: Submit NEOGARD® product literature and installation instructions.
- B. Samples: Submit samples of specified heavy duty cementitious polyurethane and color flake floor system. Samples shall be construed as examples of finish only.
- C. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the heavy duty cementitious polyurethane and color flake floor system.
- D. Product Warranty: Submit copy of manufacturer's product warranty to cover a period of one year.

1.4 QUALITY ASSURANCE

- A. Supplier Qualifications: NEOCRETE® SL FLAKE, as manufactured by NEOGARD®, is approved for use on this project.

- B. Applicator Qualifications: Applicators shall be approved to install specified system.

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 (23.8°C). Handle products to avoid damage to container.

1.6 JOB CONDITIONS

- A. Environmental Conditions:
 - 1. Do not proceed with application of materials when substrate is less than 34°F (1°C) or above 90°F (32°C).
 - 2. Moisture content of concrete not to exceed four pounds per 1,000 square feet per 24 hours when tested by the referee or quantitative calcium chloride test method.
 - 3. Do not apply materials unless surface to receive coating is clean and dry.

1.7 WARRANTY

- A. Upon request, NEOGARD® shall offer the manufacturer's standard warranty upon receipt of a properly executed warranty request form.

PART 2 PRODUCTS**2.1 MANUFACTURER**

- A. NEOGARD® Division of JONES-BLAIR® Company, 2728 Empire Central, Dallas, TX 75235, Phone (214) 353-1600, Fax (214) 357-7532, www.neogard.com.

2.2 MATERIALS

- A. NEOCRETE® SL FLAKE Floor System:
 - 1. Resin: 70800 series, gray or red in color
 - 2. Hardener: 70801
 - 3. Powder: NEOCRETE® SL 70804
 - 4. Flexible Epoxy: 70718/70719
 - 5. Epoxy (100% Solids): 70714/70715 clear
 - 6. Fumed Silica: P1934
 - 7. Flake: Blended Color Flakes
 - 8. Chemical Resistant Urethane (CRU): 70815/70816
 - 9. Sealant: 70991 or other polyurethane sealant approved by NEOGARD®.

2.3 MATERIAL PERFORMANCE CRITERIA

- A. Typical performance requirements of cured heavy duty cementitious polyurethane mix used on this project are:

PERFORMANCE REQUIREMENTS OF CURED MIX		
PHYSICAL PROPERTIES	TEST METHOD	RESULTS
Compressive Strength	ASTM C597	7,700 psi
Tensile Strength	ASTM C307	712 psi
Flexural Strength	ASTM C580	2,200 psi
Modulus of Elasticity	ASTM C580	446,000 psi
Shore D Hardness	ASTM D2240	84
Adhesion (Concrete)	ASTM D4541	400 psi
Water Resistance	ASTM C413	< 0.42%
Flame Spread	ASTM D635	Pass/Self Extinguish HB-1
Coefficient of Thermal Expansion	ASTM C531	2.4 x 10 ⁻⁵ in/in/°F
Resistance to Fungal Growth	ASTM G21	No Support of Growth

- B. Typical performance requirements of cured Chemical Resistant Urethane (CRU) topcoat used on this project are:

PERFORMANCE REQUIREMENTS OF CURED FILM		
PHYSICAL PROPERTIES	TEST METHOD	RESULTS
Tensile Strength	ASTM D412	4,800 psi
Impact Resistance	Mil-D-3134, Section 4.7.3	Passes 16 ft/lbs
Taber Abrasion (cs17)	ASTM D4060	5 mg/1,000 rev
Shore A Hardness	ASTM D2240	100
Resistance to Fungal Growth	ASTM G21	No Support of Growth

2.4 MIXES

- A. Comply with manufacturer's instructions for mixing procedures.
- B. Carefully measure and mix the components together.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that the work done under other sections meets the following requirements:
1. That the concrete substrate 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 a sodium silicate base only; others require written approval from NEOGARD®.
 3. That damaged areas of the concrete substrate be restored to match adjacent areas. Use heavy duty cementitious polyurethane floor material for filling and leveling.

3.2 PREPARATION

- A. Protection:
1. Protect adjacent surfaces from damage resulting from work of this trade. If necessary, mask and/or cover adjacent surfaces, fixtures, equipment, etc. by suitable means.
 2. Provide a suitable work station to mix the coating materials.
- B. Surface Preparation:
1. 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.
 2. Steel shotblast the surface to remove surface contaminants. Proper care and procedure should be taken to leave the concrete surface as unopened as possible. An improper steel shotblast can cause "pinholes" in concrete surfaces, which can result in blister problems during the application of the heavy duty polyurethane flooring system. Note: Shotblasting does not remove deep penetrating oils, grease, tar or asphalt stains. Proper cleaning procedures should be followed to insure proper bonding of the heavy duty self level polyurethane floor.
 3. Non-moving 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 2 (up to 3) parts P1934 fumed silica by volume.
 4. Moving Cracks: Route all large cracks (over 1/16" in width), remove dust and debris, and fill flush with 70718/70719 flexible epoxy.
 5. Moving Joints: Seal construction, expansion and isolation joints with 70991 sealant. Re-incorporate moving joints into flooring system if conditions require. Consult NEOGARD® Technical Service for additional details.
 6. Control Joints: Fill all control joints with 70718/70719 flexible epoxy.
 7. Surface Condition: Concrete must be free of hydrostatic, capillary or moisture vapor pressure. Substrates in contact with ground must have a properly installed, effective vapor barrier to help prevent potential problems resulting from hydrostatic, capillary or moisture vapor pressure. Moisture content of concrete not to exceed four pounds per 1,000 square feet per 24 hours when tested by the referee or quantitative calcium chloride test method.
 8. Do not apply materials unless surface to receive coating is clean and dry.

3.3 APPLICATION

- A. Primer: NEOCRETE® SL FLAKE does not require a primer.
- B. Cementitious Polyurethane Mix: Mix 90 fluid oz. of 70800 series resin with 63 fluid oz. of 70801 hardener for one minute. Slowly add one bag of NEOCRETE® SL 70804 powder to the resin mix. Continue mixing until the powder has been uniformly blended with the resin mix. Mix blended material for an additional 2 minutes. Pour the cementitious polyurethane mix onto the floor and spread using a gauge rake or notched trowel to desired thickness. Note: One unit of mixed material covers approximately 28 to 30 square feet at 1/8" thickness. Thickness and coverage rate can vary due to finish of substrate. Immediately backroll with a spike roller to de-air and level the material.
- C. Color Flakes: Immediately broadcast blended color flakes into wet cementitious polyurethane mix at a rate of 4 to 12 ounces by weight per 100 square feet until desired pattern is achieved. Make sure the blended color flakes are thrown up into the air so they will fall vertically into the wet cementitious polyurethane mix. Note: Maintain a one to two foot wet edge without any flakes to allow for a smooth transition to the next application of cementitious polyurethane mix. Allow to cure 8 to 12 hours @ 70°F (21.1°C). After curing, remove excess aggregate and lightly sand with a circular floor sander and #50 grit sandpaper to remove any rough spots. All debris from sanding must be removed to provide a clean, moisture free surface.
- D. Chemical Resistant Urethane (CRU) Topcoat: Mix 70815/70816 clear at a ratio of 1:1 by volume for three minutes. Apply 70815/70816 at a rate of 120 square feet per gallon to achieve 12 mils DFT to prepared substrate and allow to cure 8 to 12 hours @ 70°F (21.1°C) before allowing foot traffic.

3.4 CLEANING

- A. Remove debris resulting from completion of coating operation from the project site.
- B. Reference Seamless Flooring Maintenance Guide for typical cleaning methods.

3.5 PROTECTION

- A. After completion of application, do not allow heavy traffic on coated surfaces for a period of at least 18 hours at 75°F (23.8°C).

END OF SECTION

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