KITCHENGARD 190 EPOXY MORTAR

Section 09 67 23 Heavy Duty Chemical Resistant & Food Processing Flooring System

Guide Specification

PART 1 GENERAL

1.1 SUMMARY

A. Provide labor, materials, equipment and supervision necessary to install a heavy duty chemical resistant and food processing flooring system as outlined in this specification.

B. The manufacturers 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. KitchenGard 190 shall be a complete system of compatible materials supplied by NEOGARD® to create a heavy duty flooring system utilizing silica quartz aggregate to provide an aesthetic, superior chemical and mechanical resistance durable wearing surface.

B. KitchenGard 190 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. Project Reference List: Submit list of projects as required by this specification.

C. Samples: Submit samples of specified heavy duty chemical and food processing flooring system. Samples shall be construed as examples of finish only.

D. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the heavy duty chemical and food processing flooring system.

E. Warranty: Submit copy of manufacturers standard warranty.

1.4 QUALITY ASSURANCE

A. Supplier Qualifications: KitchenGard 190, as supplied 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. Do not store for long periods in direct sunlight.

1.6 PROJECT CONDITIONS

A. Environmental Conditions:
1. Do not proceed with application of materials when substrate temperature is less than 50°F (10°C). It is recommended to maintain a minimum concrete temperature of 50°F (10°C) for a minimum of 48 hours before, during and after installation, or until cured.
2. 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.
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, P.O. Box 35286, Dallas, TX 75235, Toll Free (800) 321-6588, Fax (214) 357-7532, www.neogard.com.

2.2 MATERIALS

A. KitchenGard 190:
   1. Crack and Joint Filler: 70718/70719 flexible epoxy.
   2. Fillers: P1934 fumed silica and 86364 silica quartz aggregates.
   3. Epoxy: 70714/70715
   4. Aggregate: 86468 silica flour and 86364 silica quartz aggregates.
   5. Seal Coat: 70704/70705 novolac epoxy pigmented.
   6. Sealant: 70991 or other polyurethane sealant approved by NEOGARD®.

2.3 MATERIAL PERFORMANCE CRITERIA

A. Typical performance requirements of cured 70714/70715 epoxy mortar used on this project are:

PERFORMANCE REQUIREMENTS OF CURED FILM		
PHYSICAL PROPERTIES	**TEST METHOD**	**RESULTS**
Compressive Strength	ASTM C579	10,900 psi
Tensile Strength	ASTM C307	1,700 psi
Flexural Strength	ASTM C580	4,200 psi
Modulus of Elasticity	ASTM C580	$1.16x10^6$ psi
Heat Resistance	MIL-D-3234F	Pass
Impacted Load	ASTM D6905	Pass @ ≤112 lbs

B. Typical performance requirements of cured 70704/70705 novolac epoxy used on this project are:

PERFORMANCE REQUIREMENTS OF CURED FILM		
PHYSICAL PROPERTIES	**TEST METHOD**	**RESULTS**
Compressive Strength	ASTM D695	10,000 psi
Tensile Strength	ASTM D638	8,500 psi
Elongation	ASTM D638	6%
Flexural Strength	ASTM D790	11,800 psi
Flexural Modulus	ASTM D790	134,000 psi
Shore D Hardness	ASTM D2280	84
Adhesion	ASTM D4541	300 psi
Taber Abrasion (cs17)	ASTM D4060	40 mg/1,000 rev
Water Resistance	ASTM D570	0.15%
MVT @ 10 mils	ASTM E96	0.15 Perm
Flame Spread	ASTM D2843	Class "A"
Smoke Density Rating	ASTM D2843	36.3%

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 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.

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 superior chemical resistant 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 epoxy flooring.
   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 or Control Joints: Route all large cracks, remove dust and debris, and fill flush with 70718/70719 flexible epoxy.
   5. Moving Control Joints: Seal secondary control joints with 70991 sealant. Re-incorporate expan-

sion joints and control joints into flooring system if conditions require. Consult NEOGARD® for details on moving cracks, expansion joint details and moving control joints.

6. 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.
7. Do not apply materials unless surface to receive coating is clean and dry.

3.3 APPLICATION

A. First Base Coat (self level matrix): Mix 70714/70715 clear epoxy at a ratio of 2:1 by volume for three minutes. Add 86468 silica flour at a ratio of 1:1 by volume with mixed epoxy. Continue mixing until a smooth consistency. Spread mix using a 1/4" notched squeegee or notched trowel at a rate of 40 sf/gal to achieve a nominal thickness of 40 mils. Allow to self-level and de-air with a spiked roller.

B. Aggregate: Broadcast blended 86364 silica quartz into wet epoxy self-leveling matrix until refusal at a rate of approximately 1 pound per square foot. Maintain a one to two foot wet edge without any aggregate to allow for a smooth transition to the next pass of self-level epoxy matrix. Allow to cure 8 to 12 hours @ 70°F (21.1°C). Remove excess aggregate and lightly sand with a circular floor sander and #50 grit sandpaper to remove any rough spots.

C. Second Base Coat (self level matrix): Mix 70714/70715 clear or pigmented at a ratio of 2:1 by volume for three minutes. Add 86468 silica flour at a ratio of 1:1 by volume with mixed epoxy. Continue mixing until a smooth consistency. Spread mix using a 1/4" notched squeegee or notched trowel at a rate of 40 sf/gal to achieve a nominal thickness of 40 mils. Allow to self-level and de-air with a spiked roller.

D. Aggregate: Broadcast blended 86364 silica quartz into wet epoxy self-leveling matrix until refusal at a rate of approximately 1 pound per square foot. Maintain a one to two foot wet edge without any aggregate to allow for a smooth transition to the next pass of self-level epoxy matrix. Allow to cure 8 to 12 hours @ 70°F (21.1°C). Remove excess aggregate and lightly sand with a circular floor sander and #50 grit sandpaper to remove any rough spots and vacuum.

E. First Seal Coat: Mix 70704/70705 novolac pigmented epoxy at a ratio of 3:2 for three minutes. Apply first seal coat of 70704/70705 novolac epoxy at a rate of 200 sf/gal (8 mils DFT). Allow to cure 24 hours @ 70°F (21.1°C).

F. Second Seal Coat: Mix 70704/70705 novolac pigmented epoxy at a ratio of 3:2 for three minutes. Apply first seal coat of 70704/70705 novolac epoxy at a rate of 200 square feet per gallon (8 mils DFT). Allow to cure 24 hours @ 70°F (21.1°C) before allowing foot traffic.

G. Optional Topcoat: To maximize chemical resistance and ease of maintenance, please consult NEOGARD® flooring technical department for finish coat.

3.4 CLEANING

A. Remove debris resulting from completion of coating operation from the project site.

B. Reference Seamless Flooring Systems Manual 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 24 hours at 75°F (23.8°C), or until completely cured 7 days @ 70°F (21.1°C).

END OF SECTION

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