SECTION 09672 – RESINOUS FLOORING

PART 1 - GENERAL

1.01. SUMMARY

A. Provide labor, materials, 1 and supervision necessary to install a seamless, medium-duty, textured epoxy floor system with an epoxy topcoat 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.

1.02. SUBMITTALS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. Technical Data: Submit manufacturer's product data, Safety Data Sheets (SDS) and installation instructions, to the Contracting Officer for approval.

C. Samples: Submit samples of Traffic-Tuff flooring system. Samples shall be construed as examples of finish only.

D. Samples: Submit samples of resinous flooring. Samples shall be construed as examples of finish only.

1.03. QUALITY ASSURANCE

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

B. Requirement of Regulatory Agencies: Specified materials shall meet existing Federal, State and local VOC regulations.

1.04. 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.

1.05. PROJECT CONDITIONS

A. Read and follow the SDS and container labels for detailed health and safety information.

B. Do not apply materials when substrate temperature is less than 50°F (10°C), if precipitation is imminent, or to a damp, unclean or frosty surface. It is recommended to 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. Do not apply materials if ambient temperature is less than 50°F (10°C) or greater than 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, etc. 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.

PART 2 - PRODUCTS

2.01. MATERIALS

A. **Basis of Design:** Neogard Traffic-Tuff or approved equal are acceptable provided they meet the materials and standards of quality specified herein.

B. **Resinous Flooring System**:

1. Crack and Joint Filler: 70718/70719 flexible epoxy or other approved flexible epoxy.

2. Sealant: Sika 1a or other approved polyurethane sealant.

3. Primer/Base: 70714/70715 100% solids "clear" epoxy or approved equal.
4. Wear Coat: 70714/70715 100% solids "pigmented" epoxy or approved equal.
5. Aggregate: 86364 (20/40 mesh) or 7992 (16/30 mesh) silica sand or approved equal.
6. Topcoat: 70714/70715 100% solids "pigmented" epoxy or approved equal.

2.02 MATERIAL PERFORMANCE CRITERIA

A. Typical physical properties of cured 70714/70715 epoxy:

PERFORMANCE REQUIREMENTS OF CURED FILM		
PHYSICAL PROPERTIES	**TEST METHOD**	**RESULTS**
Compressive Strength	ASTM D695	25,300 psi
Tensile Strength	ASTM D638	3,700 psi
Elongation	ASTM D638	25%
Flexural Strength	ASTM D790	3,180 psi
Flexural Modulus	ASTM D790	57,700 psi
Shore D Hardness	ASTM D2240	78
Adhesion	ASTM D4541	350 psi
Taber Abrasion (cs17)	ASTM D4060	25 mg/1,000 rev
Water Resistance	ASTM D570	0.21%
MVT @ 10 mils	ASTM E96	0.16 Perm
Flammability	ASTM D635	Pass

B. The above tested results are typical values. Individual lots may vary up to 10% from the typical value.

2.03 ACCESSORIES

A. Miscellaneous materials and accessory items shall be compatible with the specified system.

2.04 MIXING

A. Comply with manufacturer's instructions for mixing procedures.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that the work done under other sections meets the following requirements.

B. That the concrete deck surface is free of ridges and sharp projections, sound and dry.

C. 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 the Manufacturer.

D. That damaged areas of the concrete substrate are restored to match adjacent areas. Use 70714/70715 epoxy and oven-dry silica aggregate approved by the Manufacturer for filling and leveling at a ratio of one part epoxy mixed with four parts aggregate by volume.

E. 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).

3.02 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: Mechanically prepare surface by shot-blasting to industry standard surface texture (ICRI's CSP 3-4) without causing additional surface defects in substrate. Shot-blasting does not remove deep penetrating oils, grease, tar or asphalt stains. Where shot-blasting is not achievable; i.e, edges, perimeters, etc..., mechanical diamond grinding or similar scarification is acceptable provided a suitable surface profile is achieved. Proper cleaning procedures should be followed to ensure proper bonding of the deck coating. Do not acid etch.

C. Cracks: After shot-blasting, fill all non-moving cracks with 70714/70715 epoxy, mixed with silica flour or cabosil to form a paste. The mix ratio is one part 70714/70715 epoxy to 3 parts silica flour or cabosil by volume.

D. Control and Cold Joints: Fill control and cold joints flush with 70718/70719 flexible epoxy @ 3/4" depth. Install backer rod if necessary to limit depth to ¾.

E. Expansion and Isolation Joints: Expansion and isolation joints =/< 1" in width, shall be sealed with urethane sealant. Sealant shall be applied to inside of joint only, not applied to floor surface.

F. Surface Condition: Surface shall be clean and dry prior to coating.

3.03 APPLICATION

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 and/or grid layout to verify actual thickness of wet coating applied, adjusting as needed for those factors which

directly affect the dry film build.

A. **Primer/Base Coat:** Mix 70714/70715 "clear" epoxy at a ratio of 2:1 by volume and apply at a spread rate of 100 sf/gal (1.0 gals/100 sf or 16 wet mils), to yield 16 dry mils.

B. **Wear Coat:** Mix 70714/70715 "pigmented" epoxy at a ratio of 2:1 by volume and apply at a spread rate of 200 sf/gal (0.5 gals/100 sf or 8 wet mils), to yield 8 dry mils, and immediately broadcast desired aggregate, evenly distributed, into wet epoxy at an approximate rate of 10 lbs/100 sf. When dry, remove excess aggregate.

C. **Topcoat:** Mix 70714/70715 "pigmented" epoxy at a ratio of 2:1 by volume and apply at a spread rate of 133 sf/gal (0.75 gals/100 sf or 12 wet mils), to yield 12 dry mils.

System thickness yields an average 36 dry mils excluding aggregate.

3.04 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.

3.05 PROTECTION

A. After completion of application, do not allow foot traffic on coated surfaces for a minimum of 48 hours at 75°F (23°C), heavy traffic for a minimum of 48 hours at 75°F (23°C), or until system has reached full chemical cure (7 days at 75°F, 23°C).

END OF SECTION