SECTION 09671

RESINOUS FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Related Work
   1. Section 03300 - Concrete

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical data, installation instructions, and general recommendations for each resinous flooring material required. Include certification indicating compliance of materials with requirements.

B. Samples: Submit, for verification purposes, 4-inch square samples of each type of resinous flooring required, applied to a rigid backing, in color and finish indicated.
   1. For initial selection of colors and finishes, submit manufacturer's color charts showing full range of colors and finishes available.

1.04 QUALITY ASSURANCE

A. Manufacturer qualifications: Obtain primary resinous flooring materials including waterproof membrane, crack treatment system, patching mortar, sealant, primers, aggregates, resins, hardening agents, and finish or sealing coats for floors from a single manufacturer with not less than five years of successful experience in manufacturing principal materials described in this section.

B. Contractors Qualifications: Installer (applicator) shall have no less than 5 years experience, shall specialize in installing resinous floor systems similar in material, design and extent to that indicated for this project and shall be certified by the manufacturer as trained and approved by that same manufacturer. Provide a minimum of 5 references of projects of similar scope, design and materials.

C. Pre-Installation Conferences: Contractor shall arrange a meeting not less than 10 days prior to the concrete pour and include the Architect, Plumbing Contractor, Concrete Contractor and the Resinous Flooring Contractor where details such as sloping, drains and elevation requirements will be discussed. There will be a second meeting required 15 days prior to the installation of the resinous flooring to include the Contractor, Architect and resinous flooring contractor.

D. ISO 9002: All materials, including primers, resins, curing agents, finish coats, aggregates and sealants shall be manufactured and tested under an ISO 9002 registered quality system.

1.05 DELIVERY, STORAGE AND HANDLING

A. Material shall be delivered to job site and checked by flooring contractor for completeness and shipping damage prior to start of work.

B. All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on-site weighing or volumetric measurements allowed.

C. Material shall be stored in a dry, enclosed area protected from exposure to moisture. Temperature of storage area shall be maintained to comply with Manufacturer's instructions.

1.06 PROJECT CONDITIONS

A. Concrete substrate shall be properly cured for a minimum of 30 days. The contractor shall perform non-destructive tests to insure that the moisture content of the concrete substrate is acceptable before proceeding with the work. Test results are to be reported in writing to the Owner and Architect.

B. Job area to be free of other trades during, and, for a period of 24 hours, after floor installation.

C. Protection of finished floor from damage by subsequent trades shall be the responsibility of the Contractor.

1.07 WARRANTY

A. Manufacturer shall furnish a single, written warranty covering both materials and workmanship for a period of one (1) full year from date of installation.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Products by Stonhard, Inc., Maple Shade, NJ, (800) 257-7953 are provided as a basis of design.

B. "OR EQUAL", All manufacturers with equal systems as described below from a single source (1.04.A) may participate. If systems provided by flooring contractors bidding are from sources other than a single manufacturer, prior approval as equal must be received from the architect 14 days prior to the bid date.

2.02 EPOXY FLOORING

A. Provide Stonshield HRI as manufactured by Stonhard, Inc., Maple Shade, NJ, (800) 257-7953,. This shall be a nominal 3/16"/5mm thick floor system comprised of a penetrating two-component epoxy primer, three-component mortar consisting of epoxy resin, curing agent and finely graded silica aggregate, three-component, epoxy undercoat, brightly colored, quartz silica aggregate broadcast and a high performance, two-component, clear epoxy sealer. Medium texture shall be provided. Apply where designated in the finish schedule and/or on the plans. Selected colors shall be of standard colors provided by the manufacturer and selected by the Architect.

1. Physical Properties: Provide flooring system in which physical properties of topping including aggregate, when tested in accordance with standards or procedures referenced below, are as follows:

Compressive Strength (ASTM C-579)	10,000 psi
Tensile Strength (ASTM C-307)	2,000 psi
Flexural Strength (ASTM C-580)	4,300 psi
Hardness (ASTM D-2240/Shore D Durometer)	85-90
Bond Strength (ASTM D-4541)	>400 psi (100% concrete failure)
Abrasion Resistance (ASTM D-4060, Taber Abrader CS-17 wheel)	0.06 gm max. weight loss
Coefficient of Friction (ASTM D-2047)	0.7-0.8

Flexural Modulus of Elasticity ..... 2.0×10^6 psi
(ASTM C-580)
Flammability ..... Self Extinguishing
(ASTM D-635) Extent of burning 0.25 inches max.
Thermal Coefficient of
Linear Expansion ..... >160 in./lbs.
(ASTM D-4226)
Water Absorption 0.1%
(ASTM C-413)

Heat Resistance Limitation ..... 140°F/60°C
(for continuous exposure)
..... 200°F/93°C
(for intermittent spills)
Cure Rate allow ..... 8 hours for foot traffic
(at 77°F/25°C) 18 hours for light traffic
24 hours for normal operations

B. Provide Stonblend GSI as manufactured by Stonhard, Inc., Maple Shade, NJ, (800) 257-7953. This shall be a nominal 3/16"/5mm thick system comprised of a penetrating two-component 100% solids epoxy primer, three-component 100% solids mortar consisting of epoxy resin, curing agent and colored quartz silica aggregate, two-component, clear, 100% solids epoxy grout coat sealer, a UV resistant clear epoxy sealer and a final coat of a two-component, clear, VOC compliant, aliphatic polyurethane non-reflective finish sealer. Selected colors shall be of standard colors provided by the manufacturer and selected by the Architect.

1. Physical Properties: Provide flooring system in which physical properties of topping including aggregate, when tested in accordance with standards or procedures referenced below, are as follows:

Compressive Strength ..... 6,000 psi
(ASTM C-579)
Tensile Strength ..... 1,500 psi
(ASTM C-307)
Flexural Strength ..... 2,200 psi
(ASTM C-580)
Flexural Modulus of Elasticity ..... 5.0×10^5 psi
(ASTM C-580)
Hardness 85-90
(ASTM D-2240/Shore D Durometer)
Bond Strength ..... >400 psi
(ASTM D-4541) (100% concrete failure)

Impact Resistance.....> 160 in. lbs.
(ASTM D-4226)
Abrasion Resistance .....0.06 gm max. weight loss
(ASTM D-4060, Taber
Abrader CS-17 wheel)
Coefficient of Friction..... 0.6
(ASTM D-2047)
Flammability ..... Self Extinguishing
(ASTM D-635) Extent of burning 0.25 inches max.
Thermal Coefficient
of Linear Expansion..... 1.8×10^{-5} in/in°C
(ASTM C-531)
Water Absorption..... 0.1%
(ASTM C-413)

Heat Resistance Limitation .....140°F/60°C
(for continuous exposure)
.....200°F/93°C
(for intermittent spills)
Cure Rate allow..... 16 hours for light traffic
(at 77°F/25°C) 24 hours for normal operations

2.04 CRACK TREATMENT/ SUB-FLOOR PREPARATION

A. Stonproof CT5, a flexible resin reinforced with a fiberglass engineering fabric shall be used to isolate dynamic cracks and control joints 1/8" wide or greater.

B. Stonset PM5, a two-component, non-sag, 100% solids epoxy patching shall be used to fill all cracks less than 1/8" prior to application of flooring systems.

2.05 JOINT SEALANT MATERIALS

A. Provide Stonflex MP7 urethane joint sealant to be used at the location of isolation/expansion joints in concrete and to provide a joint between the interface of adjacent resinous flooring materials.

2.06 INTERFACE WITH OTHER FLOORING MATERIALS

A. Where resinous flooring abuts other flooring materials, provide manufacturer's continuous metal strip trim piece for a clean, straight interface.

PART 3 - EXECUTION

3.01 PREPARATION

A. Substrate: Concrete preparation shall be by mechanical means and include use of a shot blast machine and high speed grinders (for close areas) for removal of bond inhibiting materials such as curing compounds or laitance.

B. Control joints and shrinkage/tension cracks are to be filled with epoxy patching material (Stonset PM5) and overlayed with resinous flooring.

3.02 APPLICATION

A. General: Apply each component of resinous flooring system in compliance with manufacturer's directions to produce a uniform monolithic wearing surface of thickness indicated, uninterrupted except at divider strips, sawn joints or other types of joints (if any), indicated or required.

B. Primer: Mix and apply primer over properly prepared substrate with strict adherence to manufacturer's installation procedures and coverage rates. Coordinate timing of primer application with application of troweled mortar to ensure optimum adhesion between resinous flooring materials and substrate.

C. Troweled Mortar: Mix mortar material according to manufacturer's recommended procedures. Uniformly spread mortar over substrate using manufacturer's specially designed screed box adjusted to manufacturer's recommended height. Hand trowel apply mixed material over freshly primed substrate using steel finishing trowels or power trowel material.

D. HRI Undercoat: Remove any surface irregularities by lightly abrading and vacuuming the floor surface. Mix and apply undercoat/coating with strict adherence to manufacturer's installation procedures and coverage rates.

E. HRI Broadcast: Immediately broadcast quartz silica aggregate into the undercoat using manufacturer's specially designed spraycaster. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.

F. HRI Sealer: Remove any surface irregularities by lightly abrading and grinding excess unbonded granules or by lightly brushing and vacuuming the floor surface. Mix and apply sealer with strict adherence to manufacturer's installation procedures.

G. GSI Grout Coats: Remove excess unbonded granules by lightly abrading or

scraping and vacuuming the floor surface. Mix and apply grout coat with strict adherence to manufacturer's installation procedures and coverage rates. Allow to cure and apply a second grout coat of a UV resistant clear epoxy.

H. GSI Mar Resistant Finish: Lightly sand or scrape surface to remove any floor Surface irregularities. Mix and roller apply mar resistant finish with strict adherence to manufacturer's installation procedures.

J. Coved Base: Where resinous flooring meets a vertical wall surface, provide a monolithic, integral coved base of the same resinous flooring material 6 inches high or as noted on Plans.

K. Steps: Where resinous flooring is applied to steps, the flooring shall be of a uniform thickness and continuous over the riser and tread. Radius the resinous flooring material with a curved-edged trowel at the edge of the tread.

3.03 CURING, PROTECTION AND CLEANING

A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 24 hours.

B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.

C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

END OF SECTION

SECTION 09678

TOP-SET RESILIENT BASE

PART 1 - GENERAL

1.01 SUMMARY

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Special Conditions and/or other such Provisions as the City may require, and Division 1 of these Specifications.

B. Section Includes:
1. Resilient base.
2. Application to all walls as scheduled on Drawings.

1.02 REFERENCES

A. American Society for Testing and Materials.
1. ASTM E84 - Surface Burning Characteristics of Building Materials.
2. ASTM F1861 - Resilient Base.

1.03 FIRE CLASSIFICATION REQUIREMENTS

A. ASTM E84; flame spread less than 25, smoke density less than 450.

1.04 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Provide product data on specified products, describing physical and performance characteristics, height and colors available.

C. Submit three 6 inch long samples of base material for each color selected.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver products to job site in manufacturer's original unopened cartons.

B. Protect adhesive materials from freezing or overheating, in accordance with manufacturer's instructions.

C. Store and protect products in dry, secure areas.

1.06 MAINTENANCE DATA

A. Submit maintenance procedures and recommended maintenance materials.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Store materials for three days prior to installation in area of installation to achieve temperature stability.

B. Maintain minimum 70 degrees F temperature three days prior to, during and 24 hours after installation of materials.

C. Provide adequate ventilation to carry off volatile fumes.

D. Install resilient base only after other finishing operations including painting, have been completed.

1.08 EXTRA MATERIALS

A. Provide minimum three percent of all materials furnished for each color and size of materials installed, for Owner's use in replacement and maintenance.

B. Package securely to prevent damage and label clearly.

PART 2 - PRODUCTS

2.01 MANUFACTURERS - RUBBER

A. Approved Manufacturers:
1. Burke Flooring Products, City of Commerce CA.
2. The Johnson Rubber Co., Middlefield OH.
3. Nora Flooring Systems, Lawrence MA.
4. Flexco Co., Tuscumbia GA.
5. Azrock Industries, Inc., San Antonio TX.
6. Roppe Corp., Fostoria OH.

2.02 MANUFACTURERS - VINYL

A. Approved Manufacturers:
1. The Johnson Rubber Co., Middlefield OH.
2. Flexco Co., Tuscumbia GA.
3. Armstrong World Industries, Fullerton CA.
4. Kentile Floors, Inc., Scottsdale AZ.
5. Mercer Products Co., Orlando FL.
6. Roppe Corp., Fostoria OH.

2.03 BASE MATERIALS

A. Base: Rubber or vinyl, as may be scheduled on the Drawings, 1/8 inch gage, standard toe, toeless at carpet, 4 inches high, or heights as may be indicated on Drawings, color as scheduled. When not scheduled, as selected by the Architect from manufacturer's standard list of colors, up to 5 color selection.

B. Base material shall meet ASTM F1861, Type I for rubber, Type II for vinyl.

C. Base Accessories: Premolded end stops, internal and external corners of same material, size and color as base.

D. Adhesive: As recommended by the manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft and are ready to receive Work.

B. Verify that surfaces are finished, ready to receive base installation.

C. Beginning of installation means acceptance of existing substrate and site conditions.

3.02 INSTALLATION - BASE MATERIAL

A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches between joints.

B. At all 90 degree external corners use premolded units only. At corners more or less than 90 degrees, shave a vertical strip down the back side of the material, 1/4 inch wide and not more than 1/2 the thickness at the point of bend.

C. Bend coved toe to required angle. Bond material firmly to wall on both sides of joint to ensure a tight fit with no open void at top.

D. At 90 degree internal corners use premolded units or as an alternate, miter material to exact angle.

E. Install base on solid backing. Bond tight to wall and floor surfaces.

F. Scribe and fit to door frames and other interruptions.

3.03 CLEANING

A. Provide cleaning under provisions of Section 01710.

B. Remove excess adhesive from floor, base and wall surfaces without damage.

C. Protection: Protect work until completion. Repair or make good any damage to this work and other materials damaged during installation of base material.

D. Repair or make good any damage to this work and other materials damaged during installation of base materials.

END OF SECTION - 09678

SECTION 09680

CARPETING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide carpet tile and carpet accessories where shown on the Drawings, as specified herein, and as needed for a complete and proper glue-down installation.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

C. Codes: Materials and work shall conform to the governing Building Code. In case of conflict between these specifications, the standard specifications, and the Building Code, the more stringent shall govern.

1.02 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section;
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
   3. Shop Drawings showing location of seams and locations and types of carpet metal and accessories.
   4. Samples of the colors and patterns of carpet tile and of exposed accessories.
   5. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

C. Submit three Samples of each specified color and pattern from the stock proposed to be installed. Secure the Architect's approval of these Samples prior to installation.

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01600.

1.05 WARRANTIES

A. Provide 10 year manufacturer's warranty against product defects and performance deficiencies.

PART 2 - PRODUCTS

2.01 Carpet tile manufacturer and color(s) as shown on the Drawings from Interface FLOR Commercial, 2825 Penasco, San Clemente, CA 92673, (800) 336-0225, Ext. 1608.

2.06 INSTALLATION METHOD

A. Installation method: Direct glue-down.

B. Lay pattern: Refer to drawings and finish schedules for lay patterns.

2.07 OTHER MATERIALS

A. Adhesives for Carpet Tile:
1. Grid Set (Interface).
2. Use only Re: Source 2000 Pressure Sensitive Adhesive.

B. At intersection of carpet and floor tile, provide Johnsonite Transition Strips as indicated on Plans.

C. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 SURFACE PREPARATION

A. Immediately prior to installation of the work of this Section, thoroughly clean substrata and remove oil, grease, paint, varnish, hardeners, and other items which would adversely affect the bond of adhesives.

B. Make substrata level and free from irregularities. Assure one constant floor height after carpet is installed, filling low spots and grinding high spots as required.

3.03 INSTALLATION

A. General:
1. Glue directly to the floor, using no pads and no foam.
2. Scribe the carpet accurately to vertical surfaces.
3. Align the lines of carpet tile, as woven, using no fill strips less than 6" wide, laying all carpet in the direction indicated for each type of tile on the Drawings.

B. In addition to the cleaning requirements stated elsewhere, thoroughly clean carpet and adjacent surfaces prior to final acceptance of the carpeted areas by the Owner.

3.04 PROTECTION

C. Provide a heavy non-staining paper or plastic walkway as required over carpeting in direction of traffic, maintaining intact until carpeted space is accepted by the Owner.

3.5 SURPLUS MATERIAL

A. Carpet Tile:

1. Deliver to the Owner for his use in future modifications, an extra stock of approximately 10% of each color and pattern of carpet tile. Provide 10% extra stock of carpet tile. Box each type of material separately, distinctly marked, and adequately protected against deterioration.

END OF SECTION - 09680