SECTION 099600 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section specifies a fiberglass fiber reinforced, decorative interior wall and ceiling coating system.

B. Sika Descoglas RF with 307W High Performance Fiberglass Fiber Reinforced Wall & Ceiling Surfacing System is a monolithic wall and ceiling coating system able to withstand moderate impact and temperature fluctuations. System can be modified to meet specific project conditions upon consultation with Sika Technical Service.

C. Section includes surface preparation and application of high-performance coating systems on the following substrates:

1. Interior Substrates:

a. Concrete masonry units (CMU).
b. Gypsum board.

1.3 REFERENCES

A. ASTM D 522-88 Test Method for Mandrel Bend Test of Attached Organic Coatings

B. ASTM D 1044-90 Test Method for Resistance of Transparent Plastics to Surface Abrasion

C. ASTM D 1864-88 Test Method for Moisture in Mineral Aggregates

D. ASTM E 84-91 Test Method for Surface Burning Characteristics of Building Materials

E. ASTM D 5420-04 Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact)

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product indicated.

C. Samples for Verification: For each type of coating system and in each color and gloss of topcoat indicated.

1. Submit Samples on rigid backing, 8 inches (200 mm) square.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.
3. Colors available.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Coatings: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.6 QUALITY ASSURANCE

A. Mockups: Apply mockups of each coating system indicated to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each coating system specified in Part 3.

a. Wall and Ceiling Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide an epoxy wall and ceiling coating system that, when cured, produces the following typical properties:

PROPERTY	TEST METHOD	RESULT
Flexibility	ASTM D 522-88	Passes 1" mandrel without cracking
Wear Resistance	ASTM D 1044-90	0.019 gm loss
Impact Resistance	Gardner Impact	>160 in * lb

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.9 FIELD CONDITIONS

A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 60 and 95 deg F.

B. Maintain minimum substrate surface temperature of 60°F (12°C) for a minimum of 48 hours before, during and after installation, or until cured.

C. Provide ventilation, lighting and clean, drinkable water supply.

D. Advise other trades of fixtures and fittings not to be installed until system is cured, such as: radiators, painting, decorating, floor-supported equipment or cabinetwork, caulking, plumbing, fixtures, etc.

E. Work areas shall be kept free of traffic and no trades shall be permitted in rooms during the application and curing of the coating.

F. 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.

G. Gypsum drywall is only suitable for dry areas. Water-resistant board products are suitable in occasionally wet areas. Install drywall in accordance with board product manufacturer's directions and with the factory paper bound edge 1/4 inch (6.4 mm) above floor line. Tape and fill joints; fill all fastener heads and other indentations for smooth finished surface.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design: Sika; Descoglas RF with 307W High Performance Fiberglass Fiber Reinforced Wall & Ceiling Surfacing. Other acceptable manufacturers are:
   1. Dudick; Steri-Seal HB-F with Steri-Coat 200 topcoat.
   2. Stonhard; Stonecoat Stonglaze E4 with Stonglaz VSR (2 coat)

B. Manufacturer shall be certified under ISO 9001: All liquid materials, including primers, resins, curing agents, finish coats, and sealants are manufactured and tested under an ISO 9001 registered quality system.

2.2 SYSTEM

A. Fiberglass Fiber Reinforced Resinous Wall and Ceiling System: Descoglas RF with 307W High Performance Fiberglass Fiber Reinforced Wall and Ceiling Surfacing System.
   1. Primer: Sikagard LPL Bonding Primer 5 mils wft (required on drywall or moisture resistant board products and properly prepared, previously coated substrates)
   2. First and Second Coats: Sikagard 215 Fiber Reinforced Wall Coating, 10-12 mils (coverage rate 130-160 sq.ft./gal)
   3. Top Coats: Two coats of Sikagard 307W Single Component Urethane Wall Coating, 4 mils coverage rate (400 sq.ft./gal) Color selection is often limited because some coating materials yellow or degrade under some environmental conditions.

B. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

   1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

      a. Concrete: 12 percent.
      b. Masonry (CMU): 12 percent.
      c. Gypsum Board: 12 percent.

B. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

C. Plaster Substrates: Verify that plaster is fully cured.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

1. Clean surfaces with pressurized water. Use pressure range of 1500 to 4000 psi (10 350 to 27 580 kPa).

3.3 APPLICATION

A. Apply high-performance coatings according to manufacturer's written instructions.

1. Use applicators and techniques suited for coating and substrate indicated.
2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture.
3. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

B. Follow manufacturer's written instructions.

C. Prime entire surface with recommended primer.

D. Apply coating in accordance with manufacturer's instruction to a total thickness depending upon the agreed to requirements of the installation.

E. Apply each coat at manufacturer's recommended coverage to provide uniform, dense surface.

F. Allow proper cure time for each installation step.

G. Allow the finished system to cure for a minimum of 7 days from completion before putting into service.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

END OF SECTION 099600