SECTION 07 1816

VEHICULAR TRAFFIC COATING

PART 1 GENERAL

1.1 SUMMARY

A. Work of this Section consists of fabric reinforced vehicular traffic coatings.

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections.
2. Section 03 3000 – CAST-IN-PLACE CONCRETE

1.2 SYSTEM DESCRIPTION

A. Design Requirements: Contract Documents define design intent and performance requirements. Details show approximate dimensions and locations only. Contractor is responsible for final layout, field measurements and verification of conditions, certificates, permits, and related documentation.

B. Performance Requirements: The new fabric reinforced vehicular traffic coating system will be capable of withstanding building conditions, provide watertight conditions, remain fully adhered to substrates and withstand vehicular traffic for the term of the warranty.

1.3 SUBMITTALS

A. Shop Drawings: Prepare complete project specific installation drawings indicating proposed details of traffic coating, showing size of areas, layout, location and type of penetrations, relationship between exterior and interior walls, parapets, curbs, copings, and flashings. Coordinate all details with existing conditions. Provide procedures showing sequence of installation. All details are to have prior approval of system manufacturer. Submit copy of approved notice of award by manufacturer before beginning work.

B. Product Data: Submit manufacturer’s technical data for each product required, including instructions for preparation and application.

C. Material Safety Data Sheets: Submit manufacturer’s safety data sheets for each product showing from a recognized authority certifying acceptability for use in the project locale.

D. Test Reports:

1. Test reports for each material are to be submitted to Owner for approval.
2. Testing and reports are to be completed by an independent laboratory.

E. Certificates: Prior to delivery, submit to Owner certificates attesting compliance with the applicable specifications for grades, types and classes included in these specifications.

F. Assembly Letter: The vehicular and pedestrian traffic coating systems manufacturer shall provide a letter listing all components of the traffic coating system for the specific level and deck type. The letter should also state that the installations will be warranted for the specified term.

G. Samples and Product Data: Furnish the following samples and data:

1. Pedestrian and Vehicular Traffic Coatings: Three (3) 6 inch x 6 inch samples of each specified type of coating and reinforcing fabric.
2. Color samples of finish coats for vehicular traffic coatings.
3. Warranties: Three (3) copies each of both manufacturer's and contractor's warranties.

H. Contractor Qualification Data: Submit qualification data complying with the requirements specified. Include a list of completed projects with project names, addresses, Architect and Owner's names, plus other information describing project details.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: One who is certified both by the traffic coating system manufacturer and has installed a minimum of five projects of similar size and scope over the past three years. These installations must have been fully guaranteed by the manufacturer. Provide full-time supervisor/foreman on job site while the work is in progress. Representative must have a minimum five (5) years of experience on projects of similar type and scope.

B. Subcontracting of all or a portion of the work is prohibited without the prior notification and written approval of Owner.

C. Coordinate and participate in site meetings between Owner, Architect, General Contractor and Vehicular Traffic Coating Manufacturer to review site conditions, details, application procedures and warranty.

D. QA/QC program: Provide written program describing activities and methods to ensure installation is installed in watertight fashion. Maintain log and provide weekly written reports.

E. Install vehicular traffic coating system mockups prior to starting of work in presence of Owner's representative, Architect and Traffic Coating System Manufacturer's technician. Apply coating to substrate (10' x 10') to demonstrate substrate preparation, crack and joint treatment, quality and composition of coating and related components. Include protection board as needed.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store and handle vehicular traffic coating products in a dry, well ventilated, weather tight place. Store rolls of fabric and other coating materials on end on pallets or other raised surface. Rolls may not be stored without shrink wrapped pallets at exposed areas.

B. Do not leave rolled fabric and other materials overnight or when work is not in progress unless protected from weather.

C. Handle and store materials or equipment in a manner to avoid significant or permanent deflection work.

D. Flammable materials shall be stored in a cool, dry area away from sparks and open flame. Follow precautions outlined on containers or supplied by material manufacturer/supplier. No flammable materials shall be left on work area. Required materials must be brought to work area daily. Follow fire code regulations.

E. Materials as determined to be damaged by the Owner's Representative or system manufacturers are to be removed from the job site and replaced at no cost to the Owner.

F. Remove and replace liquid materials that cannot be applied within their shelf lives.

1.6 PROJECT/SITE CONDITIONS

A. Environmental Conditions: Do not install traffic coatings when air and surface temperatures and conditions are outside the limits recommended by NRCA and industry standards, or those permitted by the material manufacturer. Do not apply membrane in snow, rain, fog or mist, or when weather conditions are imminent during application and curing period.

B. Protection of Work:

1. Surfaces to receive new membrane or flashing shall be dry.
2. New and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude membrane system or equipment damage.
3. Arrange work sequence to avoid use of newly constructed membrane as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer shall be provided for all new traffic coating areas receiving traffic during construction.
4. Cover open and partially completed areas when work is not in progress.
5. Applicator shall verify that all floor drains are functioning correctly, not clogged or blocked, before starting work. Blockages must be reported to the Owner in writing for corrective action, prior to starting traffic coating replacement.
6. Membrane, insulation, flashing and metal work and waste materials removed during construction shall be removed daily from site to a legal dumping area authorized to receive such materials.
7. Prevent staining of adjacent surfaces of existing construction. Remove immediately membrane materials which come into contact with such surfaces. Protect adjacent surfaces during work covered by these specifications.
8. Site cleanup, including both interior and exterior building areas which have been affected by construction, shall be completed to Owner’s satisfaction.

1.7 SEQUENCING

A. Coordinate with requirements of other repair systems, trades and materials. Defer installation at obstructed areas, and install materials when obstructions are removed.

B. Coordinate with requirements of Owner, or Owner’s designated representatives. Defer installation at areas designated by Owner, or Owner’s designated representatives and install materials when directed.

1.8 WARRANTY

A. Pedestrian and Vehicular Traffic Coatings Warranty: Upon successful completion of the project, and after post installation procedures have been completed, furnish Owner with Manufacturer’s twenty-five (25) year No Dollar Limit (NDL) labor and material watertight warranty. The warranty shall be a term type, without deductibles or limitations on coverage amount, and shall cover the cost of removal and replacement of overburden, and shall be issued at no additional cost to Owner.

B. Contractors Warranty: Applicator shall supply Owner with a separate workmanship warranty. In the event any work related to traffic coating application, flashing, or metal is found within the three (3) three years of acceptance to be defective or otherwise not in accordance with the Contract Documents, the Applicator shall repair that defect at no cost to Owner.

PART 2 PRODUCTS

2.1 GENERAL

A. Obtain traffic coating materials from a single source for each type of material required.

B. Compatibility: Provide traffic coating materials that are compatible with one another and adjacent surfaces, as demonstrated by testing and field experience.

C. Colors: Provide traffic coating materials of standard color as selected by Owner.

2.2 MEMBRANE MATERIALS

A. Vehicular Traffic Coating systems shall consist of a reinforced, cold fluid-applied, self-leveling, system for concrete substrates to receive vehicular and/or pedestrian traffic. The traffic coating system shall have an aggregate surfacing, and colored abrasion resistant top-coat as selected by Architect from the manufacturer's standard palette of colors.

B. Products:

1. Vehicular Traffic Coating – Terapro VTS (Reinforced) by Siplast or approved equal by Soprema or Kemper.

C. Traffic Coating Materials:

1. Primer:
   a. Primer for use in vertical applications over concrete, concrete repair materials and masonry substrates – Pro Primer W by Siplast or approved equal
   b. Primer for use in horizontal applications over concrete substrates – Pro Primer T by Siplast or approved equal
2. Flashing Resin: A thixotropic, flexible, acrylic, resin for use in combination with a fleece fabric to form a monolithic, reinforced flashing membrane used in conjunction with a reinforced or unreinforced traffic coating system
   a. Terapro Flashing Resin by Siplast or approved equal
3. Base Resin: A flexible, resin for use as pedestrian and/or vehicular traffic coating in a reinforced traffic coating system
   a. Terapro Base Resin by Siplast or approved equal
4. Fleece: A non-woven, needle-punched polyester fabric used as a reinforcement in catalyzed resin flashing and field membrane systems. Nominal Thickness: 40 mils (1 mm), Weight: 110 grams per square meter.
   a. Pro Fleece by Siplast or approved equal
5. Traffic Coating/Wearing Layer Resin: A resin combined with aggregate filler to provide a traffic coating/wearing layer in a reinforced traffic coating system.
   a. Pedestrian Traffic Coating – Terapro Resin by Siplast or approved equal
   b. Vehicular Traffic Coating – Terapro VTS Resin by Siplast or approved equal.
6. Aggregate Filler for Traffic Coating/Wearing Layer Resin: A quartz aggregate blend/filler added to the traffic coating/wearing layer resin to produce a resin/aggregate slurry traffic coating/wearing layer.
   a. Terapro VTS Aggregate Filler by Siplast or approved equal
7. Color Finish: A pigmented, multi-component, finish layer for use in resin-based traffic coating systems.
   a. Pro Color Finish by Siplast or approved equal.
8. Traffic Markings and Signage: A pigmented, multi-component, finish coating over resin-based traffic coating systems. Traffic markings and signage to be obtained from a single source and to be provided by same manufacturer as traffic coating system.

a. Pro Color Finish by Siplast or approved equal.
b. Color to be selected by Architect.

2.3 TRAFFIC COATING ACCESSORIES

A. Cleaning Solution/Solvent: A clear solvent used to clean and prepare transition areas of in-place catalyzed resin to receive subsequent coats of resin and to clean substrate materials to receive resin.

1. Pro Prep by Siplast or approved equal

B. Paste: A paste used for remediation of depressions in substrate surfaces prior to the application of the traffic coating system or used as a leveling layer at fleece overlaps of reinforced traffic coating systems.

1. Pro Paste by Siplast or approved equal

C. Repair Mortar: A two-component, aggregate filled mortar used for patching concrete substrates.

1. Pro Repair Mortar by Siplast or approved equal

D. Catalyst: A peroxide-based reactive agent used to induce curing of acrylic resins.

1. Pro Catalyst Powder by Siplast or approved equal

E. Natural Quartz: A natural-colored, kiln-dried, silica aggregate suitable for broadcast into the wearing layer of the traffic coating system and subsequently coated with a color finish. Quartz shall be supplied by the manufacturer of the traffic coating.

1. Pro VTS Quartz or approved equal

F. Thixotropic Agent: A liquid additive used to increase the viscosity of the resin products, allowing the resins to be applied over vertical or sloped substrates.

1. Pro Thixo by Siplast or approved equal.

PART 3 EXECUTION

3.1 EXAMINATION

A. Preliminary Inspection: Contractor shall inspect all areas prior to work commencement and report all conditions which may be detrimental to work specified to be performed. Do not proceed until directed by Owners Representative.

1. Pretest all drains to determine they function properly.
2. Inspect interior finishes to establish pre-existing water damage.
3. Inspect substrate conditions.

B. Consequent Inspections: Cooperate with inspections and test agencies engaged or required to perform services in connection with the installation of traffic coating system.

C. Provide all product submittals and shop drawing submittals for review and acceptance before proceeding with work. Perform traffic coating system mock-ups for review by Architect, Owner and system manufacturer.

3.2 SUBSTRATE PREPARATION (CONCRETE DECK)

A. Depressions, holes, deformations, ridges, projections, and other unacceptable conditions greater than 1/16" shall be repaired per manufacturer's specifications using SikaTop 122.

B. All installed surface patching materials must be fully cured and free of any moisture prior to any traffic coating installations. Contractor shall follow all manufacturers' directions for curing times and procedures. Contractor shall verify in writing that and patching products or additives are compatible with the traffic coating systems. Contractor shall additionally verify at the end of the recommended curing period that the installed material is totally dry and free of solvents.

C. Scarify or abrade concrete substrate leaving the surface in a condition acceptable to traffic coating system manufacturer. Concrete substrate shall be equal to a mock-up area standard. Perform traffic coating pull-up test in the presence of the manufacturer and Owner's representatives. Thoroughly sweep or vacuum surface to leave debris free. Surfaces to receive new traffic coating must dry and free of debris.

D. Prime substrates with the appropriate primer applied per the traffic coating system manufacturer's recommendations.

3.3 REINFORCED VEHICULAR TRAFFIC COATING INSTALLATION

A. General: Install waterproofing membrane and vehicular traffic membrane and fluid-applied flashing in compliance with Membrane System Manufacturer's written specifications and installation recommendations. Install flashing and membrane terminations per Contract Drawings and approved shop drawings. Install system only within the acceptable temperature and weather conditions. Apply system only to dry, dust and frost free surfaces

B. Reinforced Vehicular Traffic Coating and Flashing Application:

1. Apply base coat of vehicular traffic coating to the prepared substrate at the minimum film thickness and rate recommended by the vehicular traffic coating system manufacturer.
2. While the base coat is still wet, install fabric reinforcement in base coat in a fashion which is smooth, free of wrinkles and tears. Lap edges and press into first coat of traffic coating
3. Install vehicular traffic coating flashing. Add traffic coating reinforcement where shown on approved shop drawings and seal to field coating.
4. Apply a layer of the specified vehicular traffic coating resin mixed with specified aggregate filler using a trowel at a rate recommended by the vehicular traffic coating system manufacturer.
5. Immediately embed a full covering of the specified natural quartz into the vehicular traffic coating layer of mixed resin and filler at a rate recommended by the vehicular traffic coating system manufacturer. Allow to cure for two (2) hours.
6. Sweep excess aggregate from the surface.
7. Where selected, install a layer of the specified color finish with a roller at a rate recommended by the vehicular traffic coating system manufacturer.

3.4 FIELD QUALITY CONTROL

A. The contractor shall conduct a water test per ASTM D 5957of the membrane for each completed area. The test shall be performed in the presence of Owner and Architect.

1. The water test will consist of flooding the designated area as determined by the Architect to a minimum depth of 2 inches above elevation of the deck membrane for a minimum duration of 48 hours. New drain installations are to be flood tested prior to acceptance. Notify Architect and Owner 48 hours before test is to begin.

2. Sources of any leaks will be thoroughly repaired and areas re-tested until areas exhibit no signs of water penetration at the expense of Contractor.

B. Maintain QA/QC program. Perform daily QA/QC activities and record on log and note any water entry events. Provide written weekly summary of activities, events and remedial efforts.

C. The traffic coating system manufacturer shall perform a minimum of three in-progress inspections: These will be in addition to the manufacturer's final inspection. No area of new traffic coating will receive overburden until inspected by System Manufacturer's technical representative. Representative shall also attend job start-up meeting.

D. Drain testing: The drain leaders will be tested at substantial completion of the project to ensure that blockage has not occurred during construction. A hose will be placed into each drain with water running at maximum rate for a period of thirty minutes. If water does not flow down drain leaders freely and a back-up of water occurs, the drain will be considered clogged. The Contractor is responsible for clearing any clog. All drains will be re-tested after drain line cleaning has been performed.

E. Final Inspection: Arrange for the traffic coating system manufacturer's technical personnel to inspect the traffic coating installation upon completion. The report will be submitted to Architect.

1. Notify Architect and Owner 48 hours in advance of the date and time of inspection.

3.5 PROTECTION

A. Contractor shall protect adjacent construction, adjacent areas and building interior (including elevators) from damage resulting from any spillage, dripping and dropping material and any other aspect of the performance of the work, and shall prevent materials from entering and clogging drains and other water conductors.

B. Contractor shall repair and restore, or replace other work, interior or exterior building components which are soiled or damaged in connection with the performance of this work. Materials shall be protected from water or wind damage and shall be tied down where necessary. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

C. Protect traffic coating membrane and flashing from damage and wear during remainder of construction period. When remaining construction will not affect or endanger traffic coating, inspect traffic coating for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

D. Correct deficiencies in or remove membrane system that does not comply with requirements; repair substrates; re-install system; and repair flashing to a condition free of damage and deterioration at the time of Substantial Completion and according to warranty requirements.

3.6 FINAL CLEAN-UP AND CLOSE-OUT

A. Contractor shall leave all work areas clean and shall remove all unused material or containers from the work site. Clean any asphalt or adhesive stains from adjacent surfaces.

B. Contractor will address all items on Manufacturer's, Architect's, and Owner's punch lists.

END OF SECTION

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