

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 SUMMARY

- A. This Section includes a complete waterproofing system suitable for use as a traffic coating at the following locations:
  - 1. Horizontal Traffic Surfaces.

### 1.03 REFERENCE STANDARDS

- A. ASTM C1127 - Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with an Intergral Wearing Surface.
- B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension; 2006a (Reapproved 2013).
- C. ASTM D903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds; 1998 (Reapproved 2010).
- D. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser; 2010.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
- F. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2013.

### 1.04 SUBMITTALS

- A. General: Prepare and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections.
- B. Product Data: For each type of product specified, include data substantiating that materials comply with requirements. Include Manufacturer's written instructions for evaluating, preparing, and treating substrate, application, curing, technical data, and tested physical and performance properties. Include product characteristics and limitations. Identify dissolving solvents, fuels, and potential destructive compounds.
  - 1. Material List: An inclusive list of required materials. Indicate each material and cross-reference the specific material, finish system, and application. Identify each material by Manufacturer's catalog number and general classification.
  - 2. Manufacturer's Information: Technical information including label analysis and instructions for handling, storing, and applying each material.
  - 3. Include Material Safety Data Sheets, if applicable.
- C. Submit color samples for each type of coating illustrating range of colors and textures for each finishing product scheduled. Use representative colors when preparing Samples for review. Resubmit until required color and texture are achieved.

- D. Samples for Verification: For each type of traffic coating required, prepared on rigid backing and of same thickness and material indicated for the Work.
  - 1. Provide stepped samples on backing large enough to illustrate build-up of traffic coatings. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
  - 2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
  - 3. Submit three (3) samples on the following substrates for Architect's review of color and texture only:
    - a. Plywood: 6-inch square Samples of substrate material for each color and texture
- E. Manufacturer's Installation Instructions: Include special field conditions required to install traffic membrane and potential incompatibilities with adjacent materials.
- F. Applicator Certificates: Signed by Manufacturers certifying that installers comply with requirements.
- G. Submit Qualification Data of firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Architects and Owners, and other information.
  - 1. For products required to be installed by workers approved by product manufacturers, include letters of acceptance by product Manufacturers certifying that applicators are approved to apply their products.
- H. Product Certificates: Signed by Manufacturer certifying that traffic coatings comply with requirements, based on comprehensive testing of current product formulations within the last three (3) years.
- I. Maintenance Data: Submit Manufacturer's written instructions for recommended maintenance practices. To include in maintenance manuals specified in Division 1. Identify substrates and types of traffic coatings applied. Include recommendations for periodic inspections, cleaning, care, maintenance, and repair of traffic coatings.
- J. Submit Manufacturer's certification that products supplied comply with local regulations controlling use of volatile organic compounds (VOC's).
- K. Warranty: Submit Manufacturer's confirmation of the existing traffic coating system and the warranty Samples according to the Specifications and the warranty extension options available for the Owner's selection.
- L. Maintain one (1) copy of each document on-site.

#### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this Section, with not less than ten (10) years of documented experience.

- B. Applicator Qualifications: Engage an experienced applicator to perform Work of this Section who has specialized in installing the specified product; who is approved, authorized, or licensed by the Manufacturer to install Manufacturer's product; and who is eligible to receive the standard roofing manufacturer's warranty.
  - 1. Certification or license by the Membrane Manufacturer as a locally based, authorized applicator of the product the Installer intends to use, for a minimum of five (5) years.
  - 2. Workers: Thoroughly skilled and specially trained in the techniques applying the specified product. Applicators shall be able to demonstrate acceptable level of skill for review and acceptance by the Architect.
- C. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the Work of this Section.
- D. Coating materials shall be evenly coated in accordance with Manufacturer's directions and printed specifications. Finish surfaces shall be free of runs, sags, skips, and other defects.
- E. The specification of the number of coats is a minimum requirement. If full coverage is not provided with the specified number of coats, additional coats shall be applied to achieve the required finish.
- F. Coordinate inspections of the assembly by the Manufacturer's Representative at no additional cost. Provide Manufacturer's inspection reports to the Architect.
- G. Source Limitations:
  - 1. Use traffic coatings of a single manufacturer.
  - 2. Obtain primary traffic coating materials, including primers, from traffic coating manufacturer. Obtain secondary materials including aggregates, sheet flashings, joint sealants, and substrate repair materials of type and from source recommended by traffic coating manufacturer.
- H. Fire-Test-Response Characteristics:
  - 1. Fire-response testing was performed by UL, ITS, or another independent testing and inspecting agency that is acceptable to authorities having jurisdiction and that performs testing and follow-up services.
- I. Pre-installation Conference: Conduct conference at Project site to comply with Division 1 requirements.
  - 1. Before installing traffic coatings, meet with representatives of authorities having jurisdiction, Manufacturer's Technical Representative, Architect, consultants, independent testing agency, and other concerned entities. Review requirements for traffic coatings. Notify participants at least seven (7) days before conference.
- J. All Work shall be subject to acceptance by the Owner and Architect. All Work that does not comply with the intent of the Specifications shall be corrected by the Contractor.

#### 1.06 MOCK-UP

- A. Owner's Representative will select one (1) representative surface for each traffic coating and each substrate to receive traffic coatings.
  - 1. Apply each coating to at least 10 sq. ft. of each substrate to demonstrate surface preparation, joint and crack treatment, thickness, texture, color, and standard of workmanship.
  - 2. Apply mock-up according to requirements for the completed Work. Provide required sheen, color, and texture on each surface.
  - 3. Mock-up shall be tested for adhesion.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver liquid materials to Project site in original containers with seals unbroken, labeled with Manufacturer's name, product brand name and type, date of manufacture, UL labels, and directions for storing and mixing with other components.
  - 1. Manufacturer's brand name and stock number.
  - 2. Product name or title of material.
  - 3. Directions for storage and handling instructions and precautions.
  - 4. Date of manufacture and shelf life.
  - 5. Mixing and application instructions.
  - 6. Contents by volume, for pigment and vehicle constituents.
  - 7. Thinning instructions (if permitted).
  - 8. VOC content.
- B. Store materials in their original undamaged containers in a clean, dry location protected from water and direct sunlight and within the temperature range required by waterproofing manufacturer. Materials shall be stored in a neat, safe manner, not to exceed the allowable structural capacity of the storage area.
- C. Store all coating materials at temperatures between 60° F (15.5° C) and 80° F (26.6° C). If exposed to lower temperatures, restore materials to 60° F (15.5° C) minimum temperature before using.
- D. Follow the special handling or storage requirements of Manufacturer for cold weather, hot weather, etc.
- E. Environmental requirements: Proceed with Work of this Section only when existing and forecasted weather conditions will permit the application to be performed in accordance with the Manufacturer's recommendations.

- F. Safety: Refer to all applicable data, including, but not limited to MSDS sheets, PDS sheets, Product labels, and specific instructions for specific personal protection requirements.
- G. Ventilation: General ventilation is recommended; zero VOC materials do not generate harmful or flammable vapors. Secondary materials may present hazards to be addressed.
- H. Remove all materials, including cloths, tarps, and empty containers from the area of Work at the close of each day.

#### 1.08 REGULATORY REQUIREMENTS

- A. Conform to applicable Federal, State, and local regulatory requirements including flame and smoke rating requirements for finishes.
- B. Flammable liquids serve all current regulation regarding flammable liquids such as posting "No Smoking" signs. Allow no open flames, welding, or other ignition sources in the Work.
- C. Conform to all applicable laws, codes, and regulations for disposal of all materials, debris, and containers.
- D. Materials shall be VOC Compliant.

#### 1.09 PROJECT CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not install materials when temperature is below 50 degrees F (10 degrees C) or above 110 degrees F (43 degrees C), when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F above dew point.
  - 1. Maintain this temperature range, 24 hours before, during, and 24 hours after application.
  - 2. Do not apply waterproofing in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.
- B. Maintain adequate ventilation during application and curing of waterproofing materials.
- C. Restrict traffic from area where materials are being installed or are curing. General Contractor shall assure adequate protection during installation of the waterproofing assembly.

#### 1.10 WARRANTY

- A. General: Warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace traffic coatings that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Three (3) years from date of Substantial Completion.

- C. Manufacturer's Warranty: Written warranty, signed by Waterproofing Manufacturer agreeing to repair or replace traffic coating that does not comply with requirements or that do not remain watertight within specified warranty period. Warranty does not include deterioration or failure of traffic coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of new substrate cracks exceeding 1/16 inch in width, fire, vandalism, or abuse by snowplow, maintenance equipment, and truck traffic.
1. Failures include, but are not limited to, the following:
    - a. Adhesive or cohesive failures.
    - b. Abrasion or tearing failures.
    - c. Surface crazing or spalling.
    - d. Intrusion of water, oils, gasoline, grease, salt, deicer chemicals, or acids into deck substrate.
  2. Warranty Period: Five (5) years from date of Substantial Completion.

## PART 2 PRODUCTS

### 2.01 GENERAL

- A. Products: Subject to compliance with requirements.
- B. Physical Requirements: Provide traffic coatings complying with ASTM C 957. A durable and waterproofing surface applied membrane consisting of a 100% volume solids urethane elastomeric coating system for traffic decks and ramps. It is chemically cured, contains no solvent fumes, allows for high film build and possesses excellent toughness and elongation.
- C. The traffic coating system meets the requirements of Class A rating on non-combustible substrates when tested under ASTM E-108/UL 790.
- D. Material Compatibility: Provide primers; base-, intermediate-, and topcoat; and accessory materials that are compatible with one another and with substrate under conditions of service and application, as demonstrated by Manufacturer, based on testing and field experience.

### 2.02 TRAFFIC COATING

- A. Vehicular Coating: Manufacturer's standard, traffic bearing, seamless, cold fluid-applied polyurethane membrane system with slip-reducing aggregate surface.
  1. Finished Coating Thickness: 50 mils (1.3 mm), minimum.
  2. Manufacturers:
    - a. Neogard Division of Jones-Blair Company; Auto-Gard E: [www.neogard.com](http://www.neogard.com).
      - i. Components:
        - (a) Primer: Concrete and metal primers as required.
        - (b) Flashing Tape: 86218 Flashing Tape (Eternabond Webseal); 30 mils minimum thickness.
        - (c) Reinforcing Fabric: 86220 stitchbond polyester fabric.

- (d) Liquid Flashing: FC7500/FC7960 or FC7520/FC7962 polyurethane coating.
- (e) Elastomeric Base Coat: FC7500/FC7960 polyurethane coating; gray in color.
- (f) Elastomeric Wear Coat: 70714/70715-09 clear 100% solids epoxy.
- (g) Elastomeric Top Coat:
  - (1) Epoxy: 70714/70715-09 pigmented 100% solids epoxy.
  - (2) Urethane: FC7540/FC7964 aliphatic urethane.
- b. Sika Corporation; Sikalastic 710/715 Traffic System: [www.sikausa.com](http://www.sikausa.com)
  - i. Components:
    - (a) Primer: Sikafloor FTP primer
    - (b) Elastomeric Base Coat: Sikalastic 710 Base Coat
    - (c) Elastomeric Top Coat: Sikalastic 736 AL Lo-VOC Top Coat
- c. LymTal International, Inc.; Iso-Flex 780/750U-HL HVT: [www.lymtal.com](http://www.lymtal.com)
  - i. Components:
    - (a) Primer: Concrete and metal primers as required.
    - (b) Elastomeric Base Coat: 780 Base Coat.
    - (c) Elastomeric Intermediate/Wear Coat: 780 Intermediate Coat.
    - (d) Elastomeric Top Coat: 750 AL Top Coat.

## 2.03 ACCESSORY MATERIALS

- A. Water: Clean and potable water.
- B. Aggregate: (16/30) mesh oven dried silica (quartz) sand or as required by the membrane manufacturer.
- C. Sealants: As recommended by membrane manufacturer, and compatible with system and adjacent materials.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, with Manufacturer representative and Applicator present, for compliance with requirements and for other conditions affecting performance of traffic coatings.
  - 1. For the record, prepare written report, endorsed by Applicator, listing conditions detrimental to performance.
  - 2. Verify compatibility with and suitability of substrates.

3. Begin coating application only after minimum concrete repair curing and drying period recommended by traffic coating manufacturer has passed, after unsatisfactory conditions have been corrected, and after surfaces are dry.
  4. Verify that substrates are visibly dry and free of moisture. Test for moisture by method recommended in writing by Manufacturer.
  5. Verify that all other Work involved with this area, done under other Sections, has been completed and accepted by the Owner's Representative and General Contractor prior to starting the waterproofing application.
  6. Start of coating application will be construed as Applicator's acceptance of surface conditions.
- B. Test primer for compatibility with substrate materials.
- C. Verify that sealant work is in place.
- D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
1. Notify Architect about anticipated problems when using coatings specified over substrates primed by others.

### 3.02 PREPARATION

- A. Clean and prepare substrates according to Manufacturer's written recommendations to produce clean, dust-free, dry substrate for traffic coating application. Clean substances that could impair bond of coating systems. Remove oil and grease before cleaning.
1. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.
- B. Mask off adjoining surfaces not receiving traffic coatings, deck drains, and other deck substrate penetrations to prevent spillage, leaking, and migration of coatings.
- C. Concrete Substrates: Mechanically abrade concrete surfaces to a uniform profile according to ASTM D 4259. Do not acid etch.
1. Remove grease, oil, paints, and other penetrating contaminants from concrete.
  2. Remove concrete fins, ridges, and other projections.
  3. Remove laitance, glaze, efflorescence, curing compounds, concrete hardeners, form-release agents, and other incompatible materials that might affect coating adhesion.
  4. Remove remaining loose material to provide a sound surface, and clean surfaces according to ASTM D 4258.
- D. Concrete Spalls and Crack Repair: Prepare, treat, rout, and fill joints and cracks in substrates according to ASTM C 1127 and traffic coating manufacturer's written recommendations. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D 4258.
- E. Material Preparation: Mix and prepare materials according to coating manufacturer's written instructions.
1. Provide a suitable workstation to mix the coating materials.



### 3.03 TERMINATIONS AND PENETRATIONS

- A. Prepare vertical and horizontal surfaces at terminations and penetrations through traffic coatings and at expansion joints, drains, and sleeves according to ASTM C 1127 and Manufacturer's written recommendations.
- B. Provide sealant cants at penetrations and at reinforced deck-to-wall butt joints. Comply with recommendations in ASTM C 1193 for joint-sealant installation.

### 3.04 APPLICATION

- A. Apply traffic coating material according to ASTM C 1127 and Manufacturer's written recommendations.
  - 1. Start traffic coating application in presence of Manufacturer's technical representative.
- B. Detail Work: Install approved sealant as required and tool the surface smooth. Install Manufacturer approved fabric reinforced flashing at all changes of plane, and as required by the Manufacturer. Treat cracks in the surface with Manufacturer approved products.
- C. Prime concrete or other substrates as required by the Manufacturer. Allow primer to cure to the Manufacturer's standard prior to application of the base coat. For substrates that require no priming, prepare substrate as recommended by the Manufacturer.
- D. Apply base coat using method approved by the Manufacturer. Allow base coat to cure to the Manufacturer's standard prior to application of the body coat but no more than the recommended period.
- E. Apply body coat using method approved by the Manufacturer. Allow body coat to cure to the Manufacturer's standard prior to application of the topcoat but no more than the recommended period.
- F. Apply aggregate using method approved by the Manufacturer. Broadcast aggregate at rate recommended by the Manufacturer. Omit aggregate on vertical surfaces.
- G. Apply topcoat using method approved by the Manufacturer. Allow to cure and provide protection until topcoat is fully cured.
- H. Apply traffic coatings to prepared wall terminations and vertical surfaces to height indicated and omit aggregate on vertical surfaces.

### 3.05 FIELD QUALITY CONTROL

- A. The Contractor for Work under this Section shall maintain a quality control program specifically to verify compliance with this Specification.
- B. Inspections: A minimum of three (3) (Substrate, Application and Final) inspections, by an approved Manufacturer's representative, will be required on all Work requiring a warranty.
- C. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when coating is being applied:
  - 1. Owner may engage a qualified independent testing agency to sample coating material being used. Samples of material delivered to Project site shall be taken, identified, sealed, and certified in presence of Contractor.
  - 2. Testing agency shall perform tests for characteristics specified, using applicable referenced testing procedures or, if not referenced, using tests cited in Manufacturer's product data.

3. Testing agency shall verify thickness of coatings during traffic coating application.
  4. Owner may direct Contractor to stop coating application if test results show materials being used do not comply with requirements. Contractor shall remove non-complying materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. If necessary, Contractor may be required to remove rejected materials from previously coated surfaces if, on recoating with specified materials, the two (2) coatings are not compatible.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional Work with specified requirements.

### 3.06 CURING AND PROTECTION

- A. Cure waterproofing according to Manufacturer's written recommendations, taking care to prevent contamination and damage during application stages and curing.
- B. Do not permit traffic over unprotected surfaces.
- C. Protect waterproofing from damage and wear during remainder of construction period.
- D. Protect work of other trades from damage. Correct damage by cleaning, repairing, replacing, and recoating as approved by Architect. Leave in an undamaged condition.

### 3.07 CLEANING

- A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. Collect waste material that may constitute a fire hazard, place in closed metal containers and remove daily from site.
- C. Clean off excess products smears adjacent surfaces as the Work progresses by methods and with cleaning materials approved in writing by Manufacturers.
- D. Clean spillage from adjacent construction using cleaning agents and procedures recommended by Manufacturer of affected construction. Restore to original condition or replace with new materials to the satisfaction of the Architect.
- E. Contractor shall replace all materials in kind that are damaged during Work of this Section.
- F. Provide continuous dust control to protect all areas of the Work.
- G. Legally dispose of debris in accordance with Local, State, and Federal regulations.
- H. Upon completion of the Work, remove all debris and surplus items from the site.

END OF SECTION 071800