ROAD COMMISSION FOR OAKLAND COUNTY

SPECIAL PROVISION
FOR
SPRAYED-IN-PLACE STRUCTURE REHABILITATION COATING

a. Description.

This work shall be done in accordance with the requirements of Section 403 of the *2020 Michigan Department of Transportation (M.D.O.T.) Standard Specifications for Construction*, and as modified herein. This work consists of installing a full depth sprayed-in-place coating/liner for the interior of existing drainage structures and/or sanitary sewer manholes and/or combined use systems.

References:

- *ASTM D412 Tensile Properties*
- *ASTM D624 Tear Strength*
- *ASTM D1621 Compressive Strength*
- *ASTM D1622 Density*
- *ASTM D638 Tensile Strength*
- *ASTM D2240 Durometer Hardness*
- *ASTM D4060 Abrasion Resistance*
- *ASTM D5162 for steel, or ASTM D4787 for concrete Continuity Verification*
- *ASTM G210-13 S.W.A.T.*

b. Materials.

All work shall be in accordance with the contract documents.

1. Structure Repair/Patching/Plugging
   Use compatible cementitious and/or chemical grouts for repair/patching/plugging materials as appropriate for the work needed on interior surfaces to patch all defects such as leaks, holes, mortar joints, bug holes, etc... Materials shall be capable of providing structurally sound surfaces that are prepared to accept the cured-in-place liner system. Ensure all materials are fast setting and specifically designed to stop infiltration and for leak control, to be applied directly to active leaks under hydrostatic pressure in structures. Repair/patching/plugging materials shall be compatible with coating systems in accordance with the manufacturer's recommendations.

2. Coating/Lining Systems
   A. Use OBIC Armor 1306 & 1000 system or approved equal. (Adhesion layer per manufacturers recommendations.)
   B. Furnish materials meeting applicable ASTM quality standards or other standards and specifications approved by the Engineer.
   C. Products shall be capable of being installed and cured, and capable of performing properly in the intended environments.
   D. The coating/lining system must have documented service of satisfactory performance in similar usage and manufacturers written guarantee of performance for the application under the intended conditions when installed per the manufacturer's instructions. At the completion of the project, the Contractor must provide a 5-year warranty for every structure where a coating/liner system was installed. The warranty

must cover all material and labor costs associated with the repair or replacement of a defective coating/lining system.
E. Resistance to chemicals and corrosion.
F. Abrasion resistance.
G. Essentially non-toxic in a cured form.
H. Non-corrosive.
I. Sprayable application.
J. Capable of passing Holiday Detection Testing to identify pinholes, thin material, and any defects that may have a negative effect on the life of the installed system.

3. Submittals
Furnish submittals to the Engineer at least 21 calendar days prior to scheduling the work. Product data submittals required for the cured-in-place liner must include:
A. Material type and manufacturer to be used including catalog data sheets, ASTM references, material composition, manufacturer's recommended specifications, component physical properties, and chemical resistance.
B. Manufacturer's detailed description of the recommended procedures for handling and storing materials.
C. Manufacturer's detailed description of the recommended material installation and application process including mixing, additives, set time, cure time (return to service), and all equipment required for quality product delivery.
D. Technical data sheets describing each rehabilitation component to be applied/installed.
E. Material safety data sheets.
F. Manufacturer's detailed description of all required field-testing processes and procedures.
G. Certified statement, from the manufacturer, that the Contractor is an approved installer of the product.
H. Furnish evidence to the satisfaction of the Engineer that the Contractor is properly trained and has at least 5 years of experience and five projects of similar size and complexity doing this type of specialty work.
I. If requested by the Engineer, furnish references and contact information from past projects.
J. Written copy of the 5-year warranty.

c. . Construction.

All work shall be in accordance with the contract documents. Construction shall be in accordance with the contract documents, manufacturers' recommendations, and as specified herein.

1. Planning and Sequencing
A. Provide a sequencing plan and schedule as it relates to other work operations and operations of the infrastructure system, for review and approval by the engineer.
B. Structures shall be returned to full operational service as soon as possible after successful completion of the work in that structure.
C. Provide a bypass pumping plan, if applicable.
D. Coordinate contractors that are performing various different portions of the work.

2. Structure Cleaning and Cleanout
Clean out structures and properly dispose of debris prior to coating/lining. Use vactor or other appropriate methods prior to installation of the system. Clean out sumps and bottoms of structures. Clean and prepare surfaces prior to lining per the liner

manufacturer's specified guidelines. Structures must be clean after installation of the system prior to final acceptance of the work.

3. Structure Repair/Patching/Plugging
   Provide structurally sound surfaces that are prepared to accept the cured-in-place liner system. Coating/lining shall not be performed until the repair or stabilization is complete. Interior surfaces must have all defects such as leaks, holes, mortar joints, bug holes, etc., patched with compatible patching/plugging compounds. Patch/plug all defects providing structurally sound surfaces that are prepared to accept the cured-in-place liner system. Stop infiltration by using a material which is compatible with the specified liner manufacturer's guidelines. Repair materials shall be used to fill voids, structurally reinforce and/or rebuild surfaces.

4. Coating/Lining Systems
   A. Procedures shall conform to the recommendations of the manufacturer.
   B. Application of multi-layer/multi-component coating/liner systems shall be in strict accordance with manufacturer's recommendations.
   C. The coating/lining system will not be applied to structure bottoms.
   D. Apply coating/lining after structure cover adjustments are complete.

5. Testing and Acceptance.
   A. Final coating/liner system shall be completely free of pinholes or voids.
   B. Application thickness shall be verified by a means acceptable to manufacturer recommendations as approved by the Engineer.
   C. Visual inspection. Visually inspect for water tightness upon completion and at any time during the warranty period. Repair any visible leaks or defects, at no additional cost to the contract.
   D. Cleanup structure and work area.
   E. Perform testing when recommended by the manufacturer.

d. Measurement and Payment.

The completed work, as described, will be measured and paid for at the contract unit price for the following item:

Pay Item	**Pay Unit**
Sprayed-in-Place Structure Rehabilitation Coating..……..……..…	Foot

Payment for **Sprayed-in-Place Structure Rehabilitation Coating** shall include all labor, equipment and materials necessary to complete the item.

Sprayed-in-Place Structure Rehabilitation Coating will be measured and paid for each vertical foot coated/lined within a structure for various sized structures and will include cleanout and disposal of debris, structure cleaning, structure repair/patching/plugging, bypass pumping and/or diversion of sewage flows if needed, cleaning equipment, product installation, curing, all quality controls, testing, cleanup and warranty.

After work within a structure is completed and accepted by the Engineer that work will be eligible for measurement and payment. Work that is partially completed in a structure will not be paid for until the structure is completed and accepted by the Engineer.