

TRANSMITTAL

To: Wenger Excavating, Inc./ Jeff Gaul/Gjorgi Kondev Date: 3/19/2014

From: Frederick P Werner

Re: 2013 Levee Infrastructure Improvement Project Date Submitted: 3/19/2014

WE ARE SENDING YOU:

☒ ATTACHED ☐ DRAWINGS ☒ SHOP DRAWINGS/ SUBMITTAL ☐ CONTRACTS ☐ CHANGE ORDER

Notes: SpectraShield -, **APPROVED**,

Submittals have been reviewed with the following exceptions:

SUBMITTAL/ SHOP DRAWING REVIEW

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF THE GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. NOTHING HERE IN AUTHORIZES ADDITIONAL COST. THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; PERFORMANCE; SELECTING FABRICATION PROCESS AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS OR HER WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.

CITY OF MASSILLON
151 LINCOLN WAY EAST
MASSILLON, OHIO 44646

BY _____ FPW
DATE 3/19/2014 _____

(x) APPROVED () NOT APPROVED
() APPROVED AS NOTED () REVISE/RESUBMIT

CC: File, RPR

SIGNED: _____

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4767

8158

Phone 330-837-

Fax 330-828-



26 N. Cochra St. • P.O. Box 499 • Dalton, Ohio 44618

City of Massillon – Division of Engineering
Municipal Government Annex
City Administration Building
Massillon, Ohio 44646

3/19/14

Attn: Fred Werner

Re: Proposal to line SCR-4

Mr. Werner,

Wenger Excavating would like to propose lining of interior walls in the existing Siphon/MH Chamber SCR-4. The company we would like to use is Advanced Rehabilitation Technology. All lining work shall be considered part of Sanitary Siphon Rehab Work Item with no additional cost to the City of Massillon.

Please review product data and If you have any questions feel free to call me at (330)495-6010

SUBMITTAL SHOP DRAWING REVIEW

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BY 
DATE 3/19/2014



SINCERELY,
GEORGE BOSU
PROJECT MANAGER
WENGER EXCAVATING, INC.



APPROVED
APPROVED AS NOTED



NOT APPROVED
REVISE/RESUBMIT

"An Equal Opportunity Employer"

corrosion, infiltration, exfiltration, missing mortar joints, exposed rebar . . .

SpectraShield's 4 step Process can renew your aging infrastructure and restore your system.



Existing structures are properly prepared to remove soils and eroded surfaces. Water blasting provides a sound, reliable surface to receive the SpectraShield coating.



The lining process begins with a barrier coat of silicone modified polyurea. This moisture barrier and adhesion coat becomes the inside layer of a multi-layer system that will form a stress-skin panel when complete.



Next a surfacing coat of closed cell polyurethane foam is applied. The foam fills all the voids, eroded areas, bugholes, and missing mortar joints and restores the surface to its original emplacement.



Finally, a barrier coat of silicone modified polyurea provides the corrosion barrier as well as the third layer of the multi-layer stress-skin panel.

visit www.SpectraShield.com

SpectraShield™ is a multi-layered liner system specifically designed for manhole, wetwell and WWTP structures. Introduced in 1993, SpectraShield has been installed in thousands of structures throughout the United States and Caribbean. The multiple layering process eliminates groundwater intrusion, restores a structure's profile and provides a light reflecting, impervious barrier to environmental penetration. Multiple patents have been issued for the SpectraShield process. Installation is done by way of trenchless application (CIP) thereby causing minimal disruption to the surrounding environment. *A seven foot deep manhole can be lined in less than one hour.*

- Eliminates Infiltration
- Restores Wall Surfaces
- Prevents Corrosion
- 100 Year Design Life
- 10 Year Warranty
- Trenchless Application

SpectraShield is installed through a network of Certified Licensed Applicators using the latest technology. SpectraShield Applicators are thoroughly trained in all facets of system preparation and application, as well as safety and quality control. Audits occur at least annually; this process assures uniform quality throughout the applicator network.

CITY OF MASSILLON
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DATE 11/11/11 **APPLICATIONS**

- Manholes
- Wetwells

SUBMIT -
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 A SAFE AND SATISFACTORY MANNER.

• Mantelburg
 • Wetwells

SNOWPLOW 1/10/14

SUBMITTAL SHOP DRAWING REVIEW

SPECTRA SHIELD

LINER SYSTEMS

BARRIER COAT SILICONE MODIFIED POLYUREA

PRODUCT DESCRIPTION:

SpectraShield Barrier Coat, is a two component 100% solid Silicone Modified Polyurea with superior performance in water/wastewater applications. *Barrier Coat* displays extremely fast cure times with excellent adhesion to a variety of substrates such as concrete, brick and steel. It can be spray applied at temperatures ranging from 20°F to 150°F. *Barrier Coat* has excellent chemical resistance, excellent water insensitivity, and a temperature range of -40°F to 250°F. Additionally, it conforms to USDA and FDA guidelines for incidental food contact.

PRIMARY APPLICATIONS:

Barrier Coat adheres well to several substrates including concrete, steel, and wood. Some typical uses include:

- MANHOLES
- WET WELLS & PUMP STATIONS
- WWTP STRUCTURES
- SECONDARY CONTAINMENT
- WASTEWATER LAGOON & POOL LINING
- COLD STORAGE AREAS
- WASH BAYS & SHOWERS
- COOLING TOWERS
- PETROCHEMICAL REFINERIES
- OILFIELD PIPELINE COATING
- WATERPROOFING
- INDUSTRIAL COATING
- COATING POLYURETHANE FOAM

TYPICAL PHYSICAL PROPERTIES:

Tensile Strength (PSI)	ASTM D412	2420
Elongation (%)	ASTM D412	350
Tear Strength (PLI)	ASTM D624	550
Hardness (Shore D)	ASTM D2240	45
Flexibility (1/8" Mandrel)	ASTM D522	Pass
Flash Point (°F)	Pensky-Martin	>200
Taber Abrasion (mg loss) CS17 Wheel, 1 kg per 1000 cycles	ASTM D4060	25
Viscosity – B Side	CPS	300
Viscosity – A Side	CPS	500
Ratio – A/B	PBV	1:1

TYPICAL PROCESSING PROPERTIES:

Gel Time	Seconds	9
Tack Free Time	Seconds	15
Open to Foot Traffic	Minutes	5
Open to Industrial Traffic	Minutes	60

RECOMMENDED EQUIPMENT SETTINGS:

A-Side Hose Temperature	°F	150
B-Side Hose Temperature	°F	150
Block Temperature	°F	150
Spray Pressure (PSI)	Graco, GX-7	2000
Spray Pressure (PSI)	GlasCraft, Probler	1500

COLOR: **SUBMITTAL SHOP DRAWING REVIEW**

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BY
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3/19/2014



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SPECTRUM

9716 Florida Mining Blvd

Jacksonville, FL 32257

(904) 268-4951

FAX (904) 268-4823

www.spectrashield.com

APPLICATION EQUIPMENT:

This material must be applied utilizing a high pressure plural component pump (1: 1 by Volume) such as a GlasCraft-MX® equipped with a Probler® Gun or a Graco® H-2035 proportioning unit and a Graco® GX-7 (400 Series) or GX-8 spray gun. This proportioning unit must be capable of supplying the correct pressure and heat for the required hose length on a consistent basis. This characteristic is mandatory to apply this elastomer in a consistent, efficient manner.

INSTALLATION RECOMMENDATIONS:

Substrate surfaces should be free of loose particles, laitance, rust, grease and spills. Chloride, moisture and pH levels should be checked prior to application. Always agitate the B-side before using.

CONCRETE:

Old Concrete - Sandblasting, shot blasting or water blasting is highly recommended to remove surface contaminants. Any oils or grease must be removed prior to product application.

New Concrete - The concrete should be allowed to cure for a minimum of 30 days. Shot -blasting, sand blasting, water blasting or acid etching is required to remove the surface laitance that appeared during the curing process.

Carbon Steel- The steel must be prepared to a "near white metal," equivalent to SSPC 10 or NACE 2. For immersion service, a 3-mil blast profile is recommended. A 2-mil blast profile is generally accepted. A 10 - 40 mil coat of *Barrier Coat* is generally recommended based on chemical resistance issues.

SAFETY AND HANDLING:

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Six months in factory delivered unopened drums. Keep away from extreme heat, cold, and moisture. Maintain at a proper storage temperature of 60°F - 100°F.

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BY [Signature]
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CHEMICAL RESISTANCE:

<u>Chemical</u>	<u>Result (25°C)</u>
Acetic Acid (100%)	RC
Acetone	RC
Ammonium Hydroxide (50%)	R
Benzene	RC
Brine-Saturated H2O (310g/l)	R
Chlorinated H2O	R
Clorox® (10%) H2O	R
Diesel Fuel	RC
Gasoline	RC
Gasoline / 5 % MTBE	RC
Gasoline / 5% Methanol	RC
Hydrochloric Acid (20%)	R
Hydrofluoric Acid (50%)	R
Hydraulic Fluid (oil)	RC
Isopropyl Alcohol	R
Lactic Acid	RC
MEK	RC
Methanol	R
Methylene Chloride	C
Mineral Spirits	RC
Motor Oil	R
MTBE	C
Muriatic Acid (10%)	R
NaCl / H2O (10%)	R
Nitric Acid (50%)	R
Phosphoric Acid (10%)	R
Phosphoric Acid (50%)	R
Potassium Hydroxide (10%)	R
Potassium Hydroxide (20%)	R, Dis
Propylene Carbonate	RC
Skydrol®	C
Sodium Hydroxide (25%)	R
Sodium Hydroxide (50%)	R
Sodium Hypochlorite (10%)	R
Sodium Bicarbonate	R
Stearic Acid	R
Sugar / H2O	R
Sulfuric Acid (10%)	R
Sulfuric Acid (>50%)	RC
Toluene	R
1,1,1-Trichlorethane	C
Trisodium Phosphate	R
Vinegar / H2O (5%)	R
H2O	R
H2O (14 days @ 82°C)	R
Xylene	RC

R → Recommended → Little or no visible damage

RC → Recommended Conditional → Some effect, swelling, discoloration

C → Conditional → Crackling – wash down within 1 hour of spillage to avoid defects

NR → Not Recommended

Dis → Discoloration

ADHESION RESULTS:

ASTM D-4541 Elcometer

Concrete >900 psi → Substrate Failure

Steel >1050 psi → Material Failure

Wood >250 psi → Delamination

Advanced Rehabilitation Technology

SpectraShield Liner System Advantages

SpectraShield Liner Systems provides a 10 Year Warranty, backed by the Manufacturer and Installer.

After each installation a date stamp is impregnated into the Polyurea coating at an easily viewable location. The warranty is not prorated and you will not need to find any paper work to know when the liner was installed. (see attached warranty)

The SpectraShield Liner System has a 100 Year Design Life.

The SpectraShield Liner System has been in use for over 15 years and has been installed in thousands of structures throughout the United States. 3rd party testing has indicated that the SpectraShield Liner System when installed properly has a Service Life of 100 years. (report attached)

No Secondary Chimney Seal Required.

The SpectraShield Liner System is rigid but retains some flexibility throughout its lifetime. This ability allows the liner system to prevent infiltration in the chimney while resisting cracking caused by freeze/thaw cycles and heavy traffic.

Adds Additional Structural Support to the Structure.

The SpectraShield Liner System adds additional strength by way of the multilayer system. Most cementitious systems base strength on ASTM compression testing. Because The SpectraShield Liner System is from the elastomeric family and will not break under a compression test ASTM does not evaluate its strength in that manner. Attached is a 3rd party testing report using a compression type test to evaluate additional strength the SpectraShield System adds.

Superior Resistance to H2S.

The Polyurea corrosion barrier has superior resistance to H2S deterioration. Cracking of epoxy top coats or cementitious build-back material is the main cause of H2S deterioration after a structure has been rehabilitated. Not only is the Polyurea resistant to sulfuric acid created by the H2S, its resistance to cracking eliminates H2S from getting to the host structure. Polyurea is very resistant to many other chemical also (see attached data sheet)

SUBMITTAL SHOP DRAWING REVIEW

Resistance to Cracking Keeps Infiltration Out.

Resistance to cracking in the chimney as well as the barrel sections of manholes prevents infiltration from returning.

Fast Curing

The SpectraShield Liner System cures in seconds. No need to close to traffic for 24 hours and generally bypass pumping is not needed.

Competitive Pricing

SpectraShield Liner Systems are competitively priced while providing a 10 Year Warranty and a 100 Year Design Life.



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SPECTRASHIELD

LINER SYSTEMS

TEN YEAR LIMITED WARRANTY

CCI Spectrum, Inc. (manufacturer) and Advanced Rehabilitation Technology. (applicator) warrant the SPECTRASHIELD lining against failure for a period of 10 years. "Failure" will be deemed to have occurred if the protective liner fails to (a) prevent the internal deterioration or corrosion of the structure (b) protect the substrate and environment from contamination by effluent or (c) prevent groundwater infiltration. If any such failure occurs within 10 years of initial completion of work by Advanced Rehabilitation Technology (A.R.T.) on a structure, A.R.T. will repair the damage and restore the lining at no cost to the Owner within 60 days after written notification of the failure. "Failure" does not include damage resulting from mechanical or chemical abuse or by an act of God. Mechanical or chemical abuse means exposing the coated surfaces of the structure to any mechanical force or chemical substance not customarily present or used in connection with structures of the type involved.

WARRANTY DISCLAIMER:

CCI Spectrum, Inc. and Advanced Rehabilitation Technology make no warranties express or implied other than those specifically stated in this Ten Year Warranty.

LIMITATION OF LIABILITY:

Any liability for consequential and incidental damages is expressly disclaimed. CCI Spectrum, Inc.'s liability in all events is limited to, and shall not exceed, the purchase price paid.

SUBMITTAL SHOP DRAWING REVIEW

This warranty effective _____, 2014.

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CCI Spectrum, Inc.

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151 LINCOLN WAY EAST
MASSILLON, OHIO 44646

Robert Kloprenstein, CEO

BY
DATE

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Advanced Rehabilitation Technology

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Dustin Schlachter, Partner

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