



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

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Note: This products list encompasses 2023 Quarter 3 revisions and is applicable beginning 2023-10-05.

Created: 02/27/13
Revised: 10/05/23

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WW-0



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

OVERVIEW

The City of Mesa (City) has established procedures for the review and approval of products used in the wastewater system. All products considered for use in the wastewater system must be reviewed and approved by the City prior to being included in the Approved Product List (APL).

Through previous investigation, usage by the City, and industry performance history, certain types, brands and models of products and materials have established a satisfactory in-service reliability record. These products have been tabulated by manufacturer's names and identifying numbers on the APL.

Use by Design Engineers: The APL includes products that meet the needs of most wastewater construction projects within the City. Design engineers must, however, confirm that products in the APL meet their project needs. If the project requires products of different size, material, or design than those listed in the APL, the design engineer must seek approval by the City prior to their use.

Use by Contractors: The APL, by itself does not constitute a submittal by the contractor. The contractor must submit manufacturer technical data sheets of sufficient detail to adequately describe the product or materials for each project. Submittals shall address all requirements contained in the APL data sheet as well as applicable project specifications. The corresponding APL data sheet should accompany the submittal for listed projects.

Use by Contractor Submittal Reviewers: The APL is intended to expedite reviews of product submittals made by contractors. Contractor submittal reviewers must confirm the following to ensure that products comply with the APL:

- The product meets the functional needs of the project.
- The product is of the type specified for use on the project.
- The product is in the category covered by the APL.
- The manufacturer of that product is listed on the APL.
- The product is within the size range listed on the APL.
- The model number, serial number or manufacturer designation is listed on the APL.
- The product meets all requirements in the applicable specifications, special provisions, details, and construction notes in the project contract documents.

GENERAL NOTES AND REQUIREMENTS

1. Contractors shall confirm that the construction contract documents for City of Mesa allow for use of products on the APL. Project-specific Special Provisions or Technical Specifications in the project contract documents may specify other products, in which case the project specifications shall govern if approved by the City.
2. Projects under construction shall only utilize products on the current Approved Products List. No substitutions or "approved equal" products will be allowed. Product manufacturers or representatives wishing to submit products for consideration shall follow the procedures listed in this document and furnish the requested information.
3. Standards referenced in the Approved Product List shall be the latest version of that standard, regardless of the year or date indicated.
4. After an item is approved, the product manufacturer or representative shall inform the City in writing, of any subsequent modifications in product design or material. Changes in product design or material may require further evaluation to determine continued approval of the product. Failure to inform the City of such changes may result in removal of the item from the Approved Products List.
5. The City may withdraw any approval as a result of design or material change, field observation, testing, product failure, or other factors, which, in the City's opinion, warrant such withdrawal.

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GENERAL NOTES AND REQUIREMENTS

WW-1



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

GENERAL NOTES AND REQUIREMENTS (CONTINUED)

6. Projects under construction that include wastewater system components by private developers, or other non-CIP projects shall adhere to the APL requirements and only use listed products where applicable unless otherwise approved in writing by the City.
7. Assembled products, and the materials associated with assembled products, may be subject to testing for conformance to applicable standards and manufacturer's specifications for that product.
8. The City may limit the number of approved products for certain items that require specialized tools, training, excessive storage or reduce the efficiency of maintenance and operations activities.

NEW PRODUCT SUBMITTAL AND REVIEW PROCESS

New Product Submittal Checklist

Product and equipment manufacturers or vendors wishing to have a product reviewed for inclusion on the APL shall submit a complete written request to the City. This should be submitted as a single package for each product and include the following:

1. Identify the product and City of Mesa APL number to which the product would be added (if applicable).
2. Identify the Maricopa Association of Governments (MAG) Standard Specification and City of Mesa MAG supplemental standard specifications that govern the product, where applicable.
3. Describe the product, providing technical specifications, dimensional drawings, product weights, and catalog information.*
4. If the product is proposed as an addition to a current Approved Product sheet, demonstrate compliance with listed requirements in the corresponding sheet.*
5. Indicate compliance with applicable AWWA, ASTM, ANSI, IEC, UL, FM, ISO 9001 or other related standards or specifications that govern the product.*
6. Provide an example submittal for review by the City. The example submittal shall contain the same level of detail as that provided by a contractor during construction.
7. Indicate country of origin for all product components.**
8. Name, address, and phone number of local product representative.
9. Product availability, delivery time, pricing, and manufacturer's location. If both foreign and domestic options are offered, provide availability, pricing, and delivery time for each.
10. Provide test results showing compliance with applicable standards, or other relevant testing information, including independent laboratory test results.
11. Provide manufacturer's installation procedures for the product.
12. List maintenance requirements, special equipment and procedures and recommended maintenance schedules.
13. List a minimum of three (3) project owners (public utilities) who have the product installed and currently in use. Include project name and location, project owner's contact name, address, and telephone number, and product application (including sizes) and number of years in use.

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CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

NEW PRODUCT SUBMITTAL AND REVIEW PROCESS (CONTINUED)

- 14. Provide a material safety data sheet (MSDS), if applicable.
- 15. Describe recent product revisions or improvements.
- 16. Explain how the product would benefit the City of Mesa in terms of prolonged service life, reduced maintenance, and reduced life-cycle cost compared to products now in use.

*This information must be shown as part of the manufacturer's publicly available product literature. Separate letters or statements indicating compliance with these requirements may be rejected.

**If portions of the product are cast, manufactured, or assembled outside of the U.S.A, provide specific information as required for each component. If the product is primarily non-domestic and a "Domestic" option is available, manufacturers shall indicate this. If the "Domestic" option is not 100% made-in-the U.S.A., the submittal package shall indicate which components are cast, manufactured, or assembled outside of the U.S.A, and the corresponding country for each.

New or Revised Product Submission

Electronic submittals in PDF-format or other common formats (Word, etc.) are acceptable. Electronic submittals (10 MB maximum) shall be made to the City at:

Hebi.li@mesaaz.gov

Hard-copy submittals, in addition to, or in lieu of electronic copies are also acceptable. Three (3) hard-copy submittals shall be sent to:

**Wastewater Product and Design Review Committee
City of Mesa Water Resources Department
640 N. Mesa Drive
PO Box 1466
Mesa. AZ 85211**

Submittal Review and Approval Process

If the submittal is found to be acceptable, the PDRC chairperson will submit it to the entire committee, who may request additional information or products for testing or field evaluation. Following submittal reviews, the committee may ask the manufacturer to demonstrate the product.

PRODUCT DEMONSTRATIONS

Manhole Linings and Coatings: Vendors or manufacturers seeking approval for manhole linings and coatings are required to install the product at an approved location at no cost to the City and complete a 1-year (minimum) successful product demonstration. Contact the City using the address and/or e-mail listed for additional information.

Other Products: No-cost product demonstrations for other products may be required as determined by the committee. The PDRC typically meets on a quarterly basis. A majority vote by the committee is required to accept any new product and add to the Approved Products List. The committee will advise the applicant of the decision regarding the product following the next quarterly review meeting. The PDRC may rescind an approval of an approved product if failures in service occur or maintenance issues arise.

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CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

REVISIONS TO PUBLISHED APL SHEETS

In general, revisions to existing APL product sheets will be published on a quarterly basis according to the schedule below. Only those sheets requiring modifications will be revised, with corresponding revision dates posted on impacted sheets. New APL sheets may be generated and published as required at the discretion of the PDRC.

City of Mesa Wastewater APL Quarterly Revision Schedule:

- 1ST Quarter: Last week of March**
- 2nd Quarter: Last week of June**
- 3rd Quarter: Last week of September**
- 4th Quarter: 3rd Week of December**

Created: 02/27/13
Revised: 04/01/21

GENERAL NOTES AND REQUIREMENTS

WW-1

CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

GENERAL

- Manhole adjustment rings shall provide a solid and waterproof structure from the cone to the frame and be resistant to corrosion from hydrogen sulfide and other sewer gases.
- Combining concrete and non-concrete adjustment rings in the same manhole is prohibited.

REQUIREMENTS FOR CONCRETE RINGS:

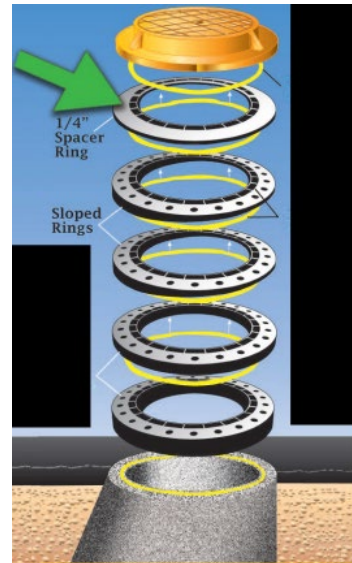
- Manhole adjustment rings shall be in accordance with the current MAG (Maricopa Association of Governments) Uniform Standard Specifications and Details for Public Works Construction, and the current City of Mesa Amendments to MAG.
- The concrete adjustment rings shall be coated with a corrosion resistant coating material per APL Sheet WW-3 after installation.

REQUIREMENTS FOR HDPE RINGS:

- Plastic injection-molded adjusting rings shall be molded from high-density polyethylene (HDPE) per ASTM Specification D-4976.
- Physical Strength and Load Capacity:
The material of manhole adjustment rings shall be tested by a third-party laboratory for physical strength in accordance with ASTM D638, ASTM D695, ASTM D2584. The adjustment rings shall withstand wheel-loading requirements per the American Association of State Highways and Transportation Officials (AASHTO) HS25.
- Corrosion Resistance:
Adjustment rings shall not deteriorate or degrade when exposed to harsh hydrogen-sulfide environments found in most sewer systems. The material of adjustment rings shall be tested by a third-party laboratory for corrosion resistance in accordance with ASTM G20-88, ASTM G210-13 and Standard Specifications for Public Works (Greenbook) Section 211-2.
- Varied Size / Slope Ring:
Adjustment ring height combinations shall provide the ability to match grade within ¼ inch. Two (2) or more rings may be stacked and indexed to match grade angles as required.
- Interlocking Design:
Adjustment rings shall have interlocking designs, shall be self-aligning and stackable, and have watertight seals to prevent infiltration and inflow.
- UV and Heat Resistance:
Adjustment rings shall be resistant to hot asphalt products and be tested in accordance with ASTM D-1693 for environmental stress crack resistance. Rings shall be resistant against UV deterioration when stored outdoors for limited amounts of time.

REQUIREMENTS FOR HDPE RINGS (CONT):

- Warranty
The minimum warranty shall be for five (5) years against defects in materials in the adjusting ring from the date of acceptance by the City, or as indicated in the contract documents, whichever duration is longer.



Approved HDPE Adjustment Rings

HDPE Manhole Rings as manufactured by Ladtech, Inc, Buffalo, MN.

Notes:

1. The City of Mesa is currently seeking additional products in this category. Interested vendors and manufacturer's representatives are encouraged to submit product information per the New Product Submittal and Review Process described in Sheet WW-1.
2. Sewer manhole adjustment rings may be referred to different names by other municipalities and institutions. For instance, they are referred to chimney adjustment rings by National Association of Sewer Service Companies (NASSCO).

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SEWER MANHOLE ADJUSTING RINGS

WW-2



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

<p><u>GENERAL</u></p> <ul style="list-style-type: none"> The coating system shall provide a waterproof, corrosion resistant layer to prevent concrete surface deterioration due to hydrogen sulfide and other corrosive sewer gases. <p><u>MATERIAL</u></p> <ul style="list-style-type: none"> The coating system shall be tested by a third-party laboratory for physical strength in accordance with ASTM D695, ASTM D1653, ASTM D256, ASTM D4060, ASTM D790, ASTM D638. The coating system shall be tested by a third-party laboratory for corrosion resistance in accordance with ASTM G20-88, ASTM G210-13 and the 2021 Greenbook: Standard Specifications for Public Works, Section 211-2. The coating system shall include a material primer and finish coating. The coating system shall be sprayable or trowelable. <p><u>COATING APPLICATOR</u></p> <ul style="list-style-type: none"> The coating applicator shall have a minimum of three (3) years' experience performing sewer manhole rehabilitation and corrosion protective coating work on manholes and shall have completed a minimum of five (5) such projects within the last five years. <p><u>PREPARATION</u></p> <ul style="list-style-type: none"> Prior to application, the coating applicator shall remove all dust or debris from the manhole per SSPC-SP13. The coating applicator shall test prepared surfaces to determine whether the pH and moisture content of the concrete are suitable for the coating application per ASTM F1869-11 and/or ASTM F2170-11. All voids shall be filled within the manhole wall and bench to create an even and uniform surface profile using a primer material. <p><u>APPLICATION</u></p> <ul style="list-style-type: none"> The coating applicator shall employ whatever means necessary to ensure strong adherence of the surface coating layer(s) to any underlying and overlying layers and allow for proper curing of the surface coating layer(s). The total cured thickness for the surface coating layer (not including the thicknesses of priming layers) shall be at least 1/8-inch. Spark testing per NACE RP0274, and adhesion testing per ASTM D7234 shall be performed to the cured manhole coating, demonstrating satisfactory performance and witnessed by a City of Mesa inspector or City-approved representative. <p><u>WARRANTY</u></p> <ul style="list-style-type: none"> The manufacturer shall warrant material and workmanship for a minimum period of one year from time of successful completion of adhesion and spark testing. 	<p><u>Approved Manufacturers/Vendors</u></p> <ul style="list-style-type: none"> Sauereisen Sewergard Lining 210 Series as manufactured by Sauereisen Cements, Pittsburgh, PA and applied by spray or trowel. Sewer Shield 150 Epoxy Lining as manufactured by Environmental Coatings, Mesa, AZ and applied by spray or trowel. Raven 405 Series Epoxy Lining as manufactured by Raven Lining Systems, Tulsa, OK and applied by spray. Raven 405T Series Epoxy Lining, as manufactured by Raven Lining Systems, Tulsa, OK and applied by trowel. COR+GARD 100% Solids 301 Epoxy Lining as manufactured by Action Products Marketing (AP/M) of Johnston, IA, and applied by spray. ErgonArmor Novocoat SL100 (trowel on) as manufactured by ErgonArmor KansasCity, KS and applied by trowel. Neopoxy NPR 5300 Series Epoxy Lining by Neopoxy International, Hayward, CA and applied by spray or trowel. Warren Environmental 100% Solids 301-14 Epoxy Coating as manufactured by Warren Environmental, Inc., Carver, MA and applied by spray or trowel. Duraplate 6000 Reinforced Epoxy with steel seam FT910 Epoxy fairing compound as a filler and Corobond 100 Epoxy primer, as manufactured by The Sherwin-Williams Company, CA and applied by spray or trowel. Quadex Structure Guard 100% Solids Epoxy by Quadex LLC. Salt Lake City, UT with Quadex Hyperform as a filler by Quadex LLC. Muskogee, OK and applied by spray or trowel. <p><u>Approved Contractors</u></p> <ul style="list-style-type: none"> Manhole Coatings LLC KE & G Construction Southwest Environmental Testing Quest Civil Constructors K.R Swerdfeger B & F Contracting Juarez Contracting JPCI Services A & W Maintenance A-O Painting Inc Ace Pipe Cleaning, Inc. AIMS Companies Jab Construction Murphy Industrial Coatings Hunter Contracting Co 	
<p>Created: 09/30/14 Revised: 10/05/23</p>	<p align="center">NEW MANHOLE CORROSION PROTECTIVE COATINGS</p>	<p align="center">WW-3</p>



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

<p><u>GENERAL</u></p> <ul style="list-style-type: none"> The coating system shall provide a waterproof, corrosion resistant layer to prevent concrete surface deterioration due to hydrogen sulfide and other corrosive sewer gases. <p><u>MATERIAL</u></p> <ul style="list-style-type: none"> The coating system shall be tested by a third-party laboratory for physical strength in accordance with ASTM D695, ASTM D1653, ASTM D256, ASTM D4060, ASTM D790, ASTM D638. The coating system shall be tested by a third-party laboratory for corrosion resistance in accordance with ASTM G20-88, ASTM G210-13 and the 2021 Greenbook: Standard Specifications for Public Works (Greenbook) Section 211-2. The coating system shall include materials for underlayment filler, primer and finish coating. The coating system shall be sprayable or trowelable. <p><u>COATING APPLICATOR</u></p> <ul style="list-style-type: none"> The coating applicator shall have a minimum of three (3) years' experience performing sewer manhole rehabilitation and corrosion protective coating work on manholes and shall have completed a minimum of five (5) such projects within the last five years. <p><u>PREPARATION</u></p> <ul style="list-style-type: none"> Prior to application, the coating applicator shall remove all dust, loose particles, corroded or damaged materials, oils, grease, curing compounds, chemical contaminants, and previously applied paints, and insecticide coatings from the manhole per SSPC-SP13. The coating applicator shall remove all existing manhole steps. The coating applicator shall test prepared surface to determine whether the structure of the manhole and the pH and moisture content of the concrete are suitable for the coating application per ASTM F1869-11 and/or ASTM F2170-11. All voids shall be filled to restore the manhole wall and bench to an even and uniform surface profile using an underlayment material. The underlayment shall be applied throughout the entire manhole at a minimum 1/2-inch total cured thickness. <p><u>APPLICATION</u></p> <ul style="list-style-type: none"> The coating applicator shall employ whatever means necessary to ensure strong adherence of the surface coating layer(s) to any underlying and overlying layers and allow for proper curing of the surface coating layer(s). The total cured thickness for the surface coating layer (not including the thicknesses of any underlayment or priming layers) shall be at least 1/8-inch. Spark testing per NACE RP0274 and adhesion test per ASTM D7234 shall be performed to the cured manhole coating, demonstrating satisfactory performance and witnessed by a City of Mesa inspector or City-approved representative. <p><u>WARRANTY</u></p> <ul style="list-style-type: none"> The manufacturer shall warrant material and workmanship for a minimum period of one year from time of successful completion of adhesion and spark testing. 	<p><u>Approved Manufacturer/Vendors</u></p> <ul style="list-style-type: none"> Sauereisen Sewergard Lining 210 Series with Sauereisen Underlayment No. F-121, as manufactured by Sauereisen Cements, Pittsburgh, PA and applied by spray or trowel. Sewer Shield 150 Epoxy Lining with C120 calcium aluminate cement underlayment as manufactured by Environmental Coatings, Mesa, AZ and applied by spray or trowel. Raven 405 Series Epoxy Lining with calcium aluminate cement underlayment, as manufactured by Raven Lining Systems, Tulsa, OK and applied by spray. Raven 405T Series Epoxy Lining with calcium aluminate cement underlayment, as manufactured by Raven Lining Systems, Tulsa, OK and applied by trowel. COR+GARD 100% Solids 301 Epoxy Lining with PERMACAST MS-10,000 underlayment, as manufactured by Action Products Marketing (AP/M) of Johnston, IA and applied by spray. ErgonArmor Novocoat SL100 with Novolite Aggregate as the underlayment, as manufactured by ErgonArmor KansasCity, KS and applied by trowel. Neopoxy NPR 5300 Series Epoxy Lining by Neopoxy International, Hayward, CA with calcium aluminate cement underlayment, by A.W. Cook, Atlanta, GA and applied by spray or trowel. Warren Environmental 100% Solids 301-14 Epoxy Coating as manufactured by Warren Environmental, Inc., Carver, MA and applied by spray or trowel. Duraplate 6000 Reinforced Epoxy with calcium aluminate mortar or rapid cure vertical grade repair mortar as the underlayment, steel seam FT910 Epoxy fairing compound as a filler and Corobond 100 Epoxy primer, as manufactured by The Sherwin-Williams Company, CA and applied by spray or trowel. Quadex Structure Guard 100% Solids Epoxy by Quadex LLC. Salt Lake City, UT with Quadex Aluminaliner or QM-1s Restore as the underlayment and Quadex Hyperform as a filler by Quadex LLC. Muskogee, OK and applied by spray or trowel. <p><u>Approved Contractors</u></p> <ul style="list-style-type: none"> Manhole Coatings LLC KE & G Construction Southwest Environmental Testing Quest Civil Constructors K.R Swerdfeger B & F Contracting Juarez Contracting JPCI Services A & W Maintenance A-O Painting Inc ACE Pipe Cleaning, Inc. AIMS Companies Jab Construction Murphy Industrial Coatings Hunter Contracting Co
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<p>Created: 09/30/14 Revised: 10/05/23</p>	<p>EXISTING MANHOLE CORROSION PROTECTIVE COATINGS</p>	<p>WW-4</p>
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CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

<p><u>GENERAL</u></p> <ul style="list-style-type: none"> The structural insert system shall recover the structural integrity of the deteriorated manhole and also provide corrosion resistance to hydrogen sulfide and other corrosive gases produced by sewer. <p><u>MATERIAL</u></p> <ul style="list-style-type: none"> The structural insert system shall be tested by a third-party laboratory for physical strength in accordance with ASTM C478, ASTM C497, ASTM C857, ASTM D638, ASTM D695, ASTM D2584, and AASHTO HL-93 The structural insert system shall be tested by a third-party laboratory for corrosion resistance in accordance with ASTM G20-88, ASTM G210-13 and Standard Specifications for Public Works (Greenbook) Section 211-2. The manhole insert system shall include joint sealant materials , cementitious mortar and epoxy coating materials incompatible with the insert material. <p><u>STRUCTURAL INSERT INSTALLER</u></p> <ul style="list-style-type: none"> The structural insert installers shall have a minimum of three (3) years' experience performing sewer manhole rehabilitation and corrosion protective coating work on manholes and shall have completed a minimum of five (5) such projects within the last five years. <p><u>PREPARATION</u></p> <ul style="list-style-type: none"> Prior to application, the installer shall remove of all dust, loose particles, corroded or damaged materials, oils, grease, curing compounds, chemical contaminants, and previously applied paints, and insecticide coatings from the manhole per SSPC-SP13. The installer shall remove all existing manhole steps. The installer shall saw cut asphalt or concrete around the top of the existing manhole as necessary to remove the cone section, chimney, frame and cover, to permit trench support if required, and to leave room such that the insert may be properly assembled and installed. If necessary, the installer shall provide shoring and sheeting to protect the excavation and to safeguard employees. The bench area shall be built up with mortar, r polymer concrete or FRP liner to provide a clean level surface before structural insert installation. <p><u>INSTALLATION</u></p> <ul style="list-style-type: none"> The structural insert and cone shall be installed using the appropriate wall alignment guides, gaskets and/or joint sealants. The structural insert shall be offloaded and lifted into place with approved manufacturer's lifting device. Non-booted or flexible coupler pipe connections shall be grouted with approved epoxy materials. Lateral and drop connections shall be re-established. The bench and insert transition shall be coated with approved epoxy. Epoxy coating shall continue a minimum of 6 inches up the insert face to allow for interlinking. 	<p><u>INSTALLATION (CONT)</u></p> <ul style="list-style-type: none"> The annular space between the insert and the existing manhole shall be filled with Class I (50 to 150 psi) CLSM or an approved material recommended by the insert manufacture. Cement shall be Type V Portland Cement in accordance with ASTM C150. The manhole shall be brought to grade using adjustment rings if necessary and a concrete manhole collar shall be installed. The cone and adjustment rings shall be coated using corrosion resistant epoxy or lined using FRP liners. Upon completion of the installation, the installer shall clean all the construction debris from the work area and repair any installation-related damage as required by the City. <p><u>WARRANTY</u></p> <p>The manufacturer shall warrant material and workmanship for a minimum period of one year from date of acceptance by the City.</p>	
	<p><u>APPROVED MANUFACTURER/VENDOR</u></p> <ul style="list-style-type: none"> Armorock Polymer Structural Manhole Insert as manufactured by Armorock, Boulder City, NV. Epoxy Fiberglass Structural Manhole Insert as manufactured by Sewer Shield Composites LLC, Mesa, AZ PVC Manhole with fiberglass reinforced plastic (FRP) lined base and top section as manufactured by Geneva Pipe and Precast, a Northwest Pipe Company, Orem, UT. 	
	<p><u>APPROVED CONTRACTORS</u></p> <ul style="list-style-type: none"> KE & G Construction Southwest Environmental Testing Quest Civil Constructors K.R Swerdfeger B & F Contracting Juarez Contracting JPCI Services 	
<p>Created: 09/30/14 Revised: 10/05/23</p>	<p align="center">APPROVED EXISTING MANHOLE CORROSION STRUCTURAL INSERT SYSTEMS</p>	<p align="center">WW-5</p>



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

<p><u>GENERAL</u></p> <ul style="list-style-type: none"> • Insecticidal manhole coating. <p><u>MATERIAL</u></p> <ul style="list-style-type: none"> • The product shall have an EPA-approved registration label. • The product shall have a white color. • Following application, the product shall dry in 30-60 minutes with no noticeable odor. • The product shall not wash off when the manhole gets wet. • The product shall kill cockroaches and houseflies by contact. • The product shall be effective for at least two years. <p><u>INSECTICIDAL COATING APPLICATORS</u></p> <ul style="list-style-type: none"> • Field applicators that spray the insecticidal coating to the exterior of sewer manholes shall have a minimum of three (3) years' experience applying the approved product. <p><u>APPLICATION</u></p> <ul style="list-style-type: none"> • Apply product in accordance with manufacturer's recommendations. • Field applicators shall insure that all surfaces are clean and dry prior to applying the product. • The application must be applied only from above ground and the applicator is not to enter the sewer manhole. • Apply no more than 48 ounces of product per manhole. • Spray or unused material shall not be discharged directly into sewer system. • Field applicators shall take necessary measures to prevent spray to drift from the application site and contacting adjacent people or property. • The product shall not be applied within 36 hours of predicted heavy rainfall. <p><u>SAFETY</u></p> <ul style="list-style-type: none"> • The Contractor applying the product shall follow all the federal and state safety procedures and standards during application, handling, storage, disposal of the product. <p><u>WARRANTY</u></p> <ul style="list-style-type: none"> • The Contractor applying the product shall warrant material and workmanship for a minimum period of two years. 	<p><u>APPROVED PRODUCTS</u></p> <ul style="list-style-type: none"> • Insecta as manufactured for Insecta Marketing, Inc, Noblesville, IN. 	
	<p><u>APPROVED APPLICATORS</u></p> <ul style="list-style-type: none"> • Peoria Pest Control, Inc • Southwest Environmental, Inc 	
<p>Created: 05/24/21 Revised: 07/01/21</p>	<p align="center">SEWER MANHOLE INSECTICIDAL COATING</p>	<p align="center">WW-6</p>



CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

<p><u>GENERAL INFORMATION:</u></p> <ul style="list-style-type: none"> This specification encompasses the requirements for minimum contractor qualifications, equipment, deliverables, and approved inspection contractors for conducting in-pipe sewer video inspections per MAG Specification Section 611.4 and Mesa Amendments to MAG Specification Section 611.4. The inspection contractor shall perform video inspections for new sewer pipelines and sewer laterals, record the findings, and provide inspection reports, databases, and videos to the City of Mesa for review and acceptance. Per MAG Spec. Section 611.4, any defects in the pipe shall be corrected by the construction contractor at no additional cost to the City and a follow up video inspection shall be completed and provided to the City, demonstrating that the repair work has been satisfactorily completed. <p><u>MINIMUM QUALIFICATIONS:</u></p> <ul style="list-style-type: none"> The contractor must possess an Arizona Contractor's license (CR80, A-12 or better). The contractor's place of business must be physically located in the Phoenix Metropolitan area. The contractor shall have been conducting sewer inspection work within the State of Arizona for a minimum of two (2) consecutive years and have completed at least three (3) sewer inspection projects within the last five (5) years. The contractor's operators shall hold current ADEQ Wastewater Collections certifications, Grade 1 or higher. The employees operating the video inspection camera shall be certified under National Association of Sewer Service Companies (NASSCO) in pipeline, manhole, and lateral condition assessments (PACP, MACP and LACP). The contractor's Project Manager or Superintendent assigned to the project shall hold a current ADEQ Wastewater Collections Grade 2 certification or equivalent, PACP certification through NASSCO, and shall have held this certification for at least three (3) years. <p><u>INSPECTION CONTRACTOR RESPONSIBILITIES:</u></p> <ul style="list-style-type: none"> The contractor shall follow all applicable federal, state, local, ANSI and OSHA laws, rules and regulations, and all other applicable regulations, and shall obtain all necessary permits from the City, County, or other agencies. For construction projects managed by the City, the contractor is responsible for inspection planning and the contractor shall have enough personnel and equipment to complete requested inspection work in the time frame required per the approved schedule. For private development projects with public sewer, the contractor shall be responsible for planning and schedule, and shall coordinate all inspection activities with the City inspector assigned to the project. The contractor shall ensure no sanitary sewer overflows (SSOs) occur due to sewer inspections. 	<p>Approved Inspection Contractors: *</p> <ul style="list-style-type: none"> Pro Pipe 4940 W Watkins ST Phoenix, AZ 85043 602-861-3944 Ancon 1777 N 23rd AVE Phoenix, AZ 85009 310-933-6002 AIMS Companies 1616 S. 31st AVE Phoenix, AZ 85009 602-237-0292 StormWater Pros, LLC 916 Impala AVE, STE 101 Mesa, AZ 84204 480-926-1003 <p>* Contractors as approved by the City of Mesa, or as approved per the City's on-call list.</p>
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CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

MINIMUM INSPECTION EQUIPMENT & SOFTWARE REQUIREMENTS:

- **Ponding Depth Gauge:** The video camera shall have a mechanical gauge to measure the depths of any ponded water with gauge markings clearly visible throughout the inspection. The mechanical gauge shall clearly indicate markings of 3/8 and 5/8 inch for pipelines having a nominal inside diameter of 8 to 12 inches, and markings of 3/4 and 1 inch for pipelines having a nominal diameter of 15 to 20 inches. For sewer lines larger than 20 inches, the mechanical gauge shall clearly indicate markings of 5% of the nominal diameter rounded to the nearest 1/8 inch. Gauge markings shall be color coded for ease in identifying the increments and the color legend shall be included in the submittal.
- **Video Resolution:** Video resolution of the inspection needs to match the potential of the camera throughout the inspection. The minimum allowable video resolution is 720x480p.
- **Inspection Lighting:** Lighting for the camera shall be suitable to provide a clear picture of the entire periphery of the pipe. The camera lighting shall allow a clear picture up to five pipe diameter lengths away from the camera. For example, the lighting projection for an 8" pipeline shall extend 40" and so on. The lighting shall be adjustable to provide uniform light free from shadows or hot spots. The camera shall be able to operate in 100% humidity conditions without overheating. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line.
- **Software & Database Format Requirements:** The video inspection shall be conducted and recorded using software by PipeLogix in accordance with NASSCO PACP standards, most recent version, or the database shall be converted to NASSCO PACP format, most recent version, prior to submittal to the City.

CONSTRUCTION PROJECT RELATED INSPECTION PHASING:

- Phase 1 – Initial Inspection: Video inspection of sewer lines and laterals shall be conducted prior to placement and compaction of roadway aggregate base course (ABC), and any defects, as described in more detail in the Quality Control section, shall be corrected per MAG Specification Section 611.
- Phase 2 – Final Inspection: After repairing any defects found during the Initial Inspection, completion and inspection of final manhole adjustments, and vacuum and deflection testing is completed and accepted, the pipeline shall be verified to be clean and free of construction debris or plugs from a follow up video inspection witnessed by the City Inspector assigned to the project.
- Phase 3: Letter of Acceptance (LOA): A LOA will not be issued until satisfactory inspection video and associated database is provided to the City, approved by the Water Resources Department, all testing has been completed and accepted, and all defects repaired and debris removed prior to receiving the LOA.

INSPECTION PREPARATION:

- **Cleaning:** Prior to inspection, the pipelines and manholes shall be cleaned thoroughly to remove any construction debris and dirt or dust that may potentially obscure cracks or other defects.
- **Water Dump:** Just prior to pipeline inspection a water dump shall be performed to run water completely through the pipeline. The water dump shall be introduced at the upstream manhole of the section to be inspected and the volume of water used shall be sufficient to allow the pipeline to run half full. Following the water dump, the downstream manhole shall be pumped out.

INSPECTION REQUIREMENTS & QUALITY CONTROL:

- **Data Display:** At the beginning of each inspection video, the initial data display shall identify:
 - Date and time of survey
 - Sewer line ID
 - Upstream and downstream manhole ID's, as indicated on the as-built drawings
 - Direction of survey (upstream or downstream)
 - Pipe material and diameter

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CITY OF MESA APPROVED PRODUCTS LIST - WASTEWATER

INSPECTION REQUIREMENTS & QUALITY CONTROL (CONT):

• **Inspection Requirements:**

- During the inspection, the camera shall be moved through the pipeline at a uniform speed per manufacturers recommendations.
- All captured video shall clearly indicate the camera progress in feet, as well as the upstream and downstream manhole ID's.
- In the case of new sewer mains, the inspection video shall show the starting manhole, the entrance to the sewer from the starting manhole, and shall continue along the pipeline to the ending manhole. The inspection video shall include a lateral launch for each lateral service connection to the sewer main.
- In the case of existing sewer mains to which new sewer connections are made, the inspection video shall clearly show each connection and shall show a distance along the existing sewer pipe of not less than ten (10) feet on either side of the new connection. At the same time, the new sewer connections, either new mains or new lateral service connections, shall be inspected in accordance with the requirements of this document.
- Sewer pipe inspection videos shall cover entire segments from an upstream structure to the downstream structure. Inspection videos that terminate mid-segment may be rejected. Acceptable upstream/downstream structures include manholes, cleanouts, or other well-defined points when approved in writing by the Water Resources Department. Identification numbers corresponding to structures or approved points on the as-built drawings shall be clearly displayed on the screen when the video is played.
- The inspection video shall clearly show all defects and features such as joints, lateral connections, debris, intruding objects, changes in pipe condition, unusual or uncommon conditions found, and detailed inspections of all significant features using camera pan/tilt functions.
- All observed defects and features shall be coded using the most recent version of the NASSCO PACP coding system.
- The construction contractor shall bear all costs incurred for required corrective actions, sewer cleaning, and any required subsequent video inspections per MAG Specification Section 611 and Mesa Amendments thereof.

INSPECTION DELIVERABLES:

- Inspection reports, databases, and videos shall be provided to the City upon completion of the sewer inspection.
- Inspection databases and videos shall be provided on DVD, USB storage device, or delivered via online database. The City inspector assigned to the project shall provide the files to Water Resources for review and acceptance.
- The video and inspection database shall be submitted in the most recent version of PipeLogix or PACP format.
- PipeLogix Data Structure: Data submitted in PipeLogix format shall have the following data file structure, and the associated data files shall be placed within each appropriate folder:

- | | |
|-----------|--------|
| 360 | MAPS |
| CDEExport | MEDIA |
| ClearLine | MOVIES |
| DATA | RTF |
| DRAWINGS | SE |
| DVS | SNAPS |
| LOGS | |

- PACP Data Structure: Data submitted in PACP format shall include the Microsoft Access database and associated folder with the video files:

- | |
|----------------|
| PACP File Name |
| PACP File Name |

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