





<p><b>Section M: Coatings &amp; Sealants</b></p>	<p>Effective Date: <u>01-01-19</u>                  Revision #: <u>2</u></p>
<p><a href="#">M 1 Chemically Activated Acrylic Gel</a></p> <p><a href="#">M 1.1 Chemically Activated Acrylamide Gel</a></p> <p><a href="#">M 1.2 Water Activated Polymer Solution/ Foam</a></p> <p><a href="#">M 2 Pipe Gasket Lubricants</a></p> <p><a href="#">M 3 PTFE "Teflon" Thread Sealant Tape</a></p> <p><a href="#">M 4 Flexible Joint Sealants</a></p> <p><a href="#">M 4.1 Flexible Butyl Joint Sealants</a></p> <p><a href="#">M 5 Polyurethane Adhesive Sealant/ Caulk</a></p> <p><a href="#">M 6 Protecto 401 / Permax CTF / Tnemec Series 431 Permashield PL Touch-up Kit</a></p>	


<b>M 1 – CHEMICALLY ACTIVATED ACRYLIC GEL:</b>		Effective Date: <u>01-01-19</u> Revision #: <u>2</u>
<p><b><u>SPECIFICATION:</u></b> Chemically activated acrylic gel (grout) shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> <li>• Shall be a water solution of acrylic resin.</li> <li>• Shall form an elastic and cohesive gel with the addition of a catalyst which stops flowing water.</li> <li>• Gel set time shall be controllable from a few seconds to several hours even in flowing water.</li> <li>• Shall have approximately the same viscosity as water (1 to 2 centipoises) in solution.</li> <li>• When catalyzed, shall produce a gel which is nontoxic.</li> <li>• Shall have a tracer dye added if colorless.</li> <li>• Shall be mixed and applied per manufactures recommendations.</li> </ul> <p><b><u>CATALYST:</u></b></p> <ul style="list-style-type: none"> <li>• AV-101 Catalyst T+ or Chemical grout monomer, Triethanolamine (TEA) catalyst &amp; water.</li> <li>• AV-103 Catalyst SP or Sodium Persulfate (SP) initiator &amp; water.</li> </ul> <p><b><u>POSSIBLE ADDITIVES:</u></b></p> <ul style="list-style-type: none"> <li>• AV-105 Ethylene Glycol: Protects against freezing.</li> <li>• AV-257 Icaset: Increases compressive and tensile strength.</li> <li>• AC 50W: Root Inhibitor.</li> </ul>		
<p><b><u>RESTRICTIONS:</u></b> For sealing existing or rehabilitated, in-service gravity sewers and manholes including:</p> <ul style="list-style-type: none"> <li>• Sewer joint sealing.</li> <li>• Sewer laterals.</li> <li>• Manhole waterproofing.</li> <li>• Lateral connections to cured in-place liners.</li> <li>• Not for potable water applications.</li> <li>• For soil stabilization.</li> <li>• Shall not be used after 6-12 months from manufactures date depending on manufacture.</li> </ul>	<p><b><u>MANUFACTURER:</u></b></p> <ul style="list-style-type: none"> <li>• AVANTI INTERNATIONAL- AV-118 DURIFLEX ACRYLIC GEL</li> <li>• DE NEEF CONSTRUCTION CHEMICALS INC.- AC-400 ACRYLATE GROUT</li> <li>• OPEN</li> </ul>	

<b>M 1.1 – CHEMICALLY ACTIVATED ACRYLAMIDE GEL:</b>		Effective Date: <u>01-01-19</u> Revision #: <u>2</u>
<p><b><u>SPECIFICATION:</u></b> Chemically activated acrylamide gel (grout) shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> <li>• Shall be a water solution of three or more chemicals which is a blend of Acrylamide Monomer (AM) and Methylenebisacrylamide (MBA).</li> <li>• Shall form an elastic and cohesive gel with the addition of catalysts which stops flowing water.</li> <li>• Gel set time shall be controllable from a few seconds to several hours even in flowing water.</li> <li>• Shall have approximately the same viscosity as water (1 to 2 centipoises) in solution.</li> <li>• Shall have a tracer dye added.</li> <li>• Shall be mixed and applied per manufactures recommendations.</li> </ul> <p><b><u>CATALYST:</u></b></p> <ul style="list-style-type: none"> <li>• AV-101 Catalyst T+.</li> <li>• AV-102 Catalyst AP.</li> </ul> <p><b><u>POSSIBLE ADDITIVES:</u></b></p> <ul style="list-style-type: none"> <li>• AV-105 Ethylene Glycol: Protects against freezing.</li> <li>• AV-257 Icoset: Increases compressive and tensile strength.</li> <li>• AC 50W: Root Inhibitor.</li> <li>• Dye: Tracer Dyes</li> </ul>		
<p><b><u>RESTRICTIONS:</u></b> For sealing existing or rehabilitated, in-service gravity sewers and manholes including:</p> <ul style="list-style-type: none"> <li>• Sewer joint sealing.</li> <li>• Sewer laterals.</li> <li>• Manhole waterproofing.</li> <li>• Lateral connections to cured in-place liners.</li> <li>• Not for potable water applications.</li> <li>• For soil stabilization.</li> <li>• Shall not be used after 12 months from manufacture date.</li> </ul>	<p><b><u>MANUFACTURER:</u></b></p> <ul style="list-style-type: none"> <li>• AVANTI INTERNATIONAL- AV-100</li> <li>• OPEN</li> </ul>	

<b>M 1.2 – WATER ACTIVATED POLYMER SOLUTION/ FOAM:</b>		Effective Date: <u>01-01-19</u> Revision #: <u>2</u>
<p><b><u>SPECIFICATION:</u></b> Water activated polymer solution which cures when reacted with water (grout) shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> <li>• Shall prevent water infiltration unto sub-grade structures and pipes.</li> <li>• Shall be either hydrophilic or hydrophobic polyurethane.</li> <li>• Shall form a strong film, gel, or foam of polyurethane, with the addition of or contact with water, which stops flowing water.</li> <li>• Shall have an approximate viscosity of 120- 2500 centipoises in solution.</li> <li>• Shall be mixed and applied per manufactures recommendations.</li> <li>• Shall be supplied in cartridges for use with or without a caulking gun.</li> </ul>		
<p><b><u>RESTRICTIONS:</u></b> For sealing existing or rehabilitated, in-service gravity sewers and manholes including:</p> <ul style="list-style-type: none"> <li>• Large cracks or joints in concrete.</li> <li>• Precast structures.</li> <li>• Manhole waterproofing.</li> <li>• Manhole connections or pipe penetrations.</li> </ul>	<p><b><u>MANUFACTURER:</u></b></p> <ul style="list-style-type: none"> <li>• AVANTI INTERNATIONAL- AV-202 MULTIGROUT</li> <li>• DE NEEF CONSTRUCTION CHEMICALS, INC.- HYDRO-ACTIVE CUT “HOT SHOT”</li> <li>• OPEN</li> </ul>	

<b>M 2 – PIPE GASKET LUBRICANTS:</b>		Effective Date: <u>01-01-19</u> Revision #: <u>2</u>
<p><b><u>SPECIFICATION:</u></b> Pipe gasket lubricants shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> <li>• AWWA C-111 (ANSI-A21.11), Rubber-gasket joints for ductile-iron pressure pipe and fittings.</li> <li>• Shall be suitable for lubricating the parts of the joint for assembly.</li> <li>• Shall be nontoxic.</li> <li>• Shall not support the growth of bacteria.</li> <li>• Shall have no deteriorating effects on the gasket material.</li> <li>• Shall not impart taste or odor to the water in the pipe.</li> <li>• Containers shall be labeled with the trade name of the lubricant.</li> <li>• Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61.</li> <li>• Affidavit of compliance to this specification shall be available upon request.</li> </ul>		
	<p><b><u>RESTRICTIONS</u></b></p>	<p><b><u>MANUFACTURER:</u></b></p> <ul style="list-style-type: none"> <li>• EASE-ON PIPE JOINT LUBRICANT</li> <li>• J.C. WHITLAM- BLUE LUBE</li> <li>• OPEN</li> </ul>

<b>M 3 – PTFE “TEFLON” THREAD SEALANT TAPE:</b>		Effective Date: <u>01-01-19</u> Revision #: <u>2</u>																
<p><b><u>SPECIFICATION:</u></b> PTFE (polytetrafluoroethylene) “Teflon” thread sealant tape shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> <li>• Shall meet MIL-T-27730A specifications.</li> <li>• Shall be Underwriters Laboratory Listed as noted (UL).</li> <li>• Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61.</li> <li>• Shall be nontoxic.</li> <li>• Shall not support the growth of bacteria.</li> <li>• Shall not impart taste or odor to the water in the pipe.</li> <li>• Affidavit of compliance to this specification shall be available upon request.</li> </ul> <p><b><u>ADDITIONAL REQUIREMENTS:</u></b></p> <table border="0"> <tr> <td>• Color</td> <td>White</td> </tr> <tr> <td>• Density</td> <td>Standard .5 - .7</td> </tr> <tr> <td>• Thickness</td> <td>.003" - .0038"</td> </tr> <tr> <td>• Temperature</td> <td>-450°F to +500°F</td> </tr> <tr> <td>• Pressure</td> <td>Hard vacuum to 10,000 PSI.</td> </tr> <tr> <td>• Package</td> <td>Plastic Spool &amp; Shell</td> </tr> <tr> <td>• Width</td> <td>.75" or 1"</td> </tr> <tr> <td>• Length per spool</td> <td>260" or 520"</td> </tr> </table>	• Color	White	• Density	Standard .5 - .7	• Thickness	.003" - .0038"	• Temperature	-450°F to +500°F	• Pressure	Hard vacuum to 10,000 PSI.	• Package	Plastic Spool & Shell	• Width	.75" or 1"	• Length per spool	260" or 520"		
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<p><b><u>RESTRICTIONS:</u></b></p>	<p><b><u>MANUFACTURER:</u></b></p> <ul style="list-style-type: none"> <li>• MERCO TAPE COMPANY- M55</li> <li>• OPEN</li> </ul>																	

<b>M 4 – FLEXIBLE JOINT SEALANTS:</b>		Effective Date: <u>01-01-19</u> Revision #: <u>2</u>
<p><b><u>SPECIFICATION:</u></b> Preformed flexible plastic joint sealant (gaskets) shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> <li>• ASTM C-990 standard specification for joints, concrete pipe, manholes and pre-cast box sections.</li> <li>• Federal Specification SS-S210-A, “Sealing Compound Preformed Plastic for Pipe Joints”, Type 1, Rope Form.</li> <li>• AASHTO M-198 75 1.</li> <li>• Shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler.</li> <li>• Shall appear as a semi-solid black strip.</li> <li>• Shall contain no solvents, irritating fumes or obnoxious odors.</li> <li>• The compound shall not depend on oxidizing, evaporating, or chemical action for its adhesive or cohesive strength.</li> <li>• Shall be supplied in extruded rope-form of suitable cross-section and of such size as to fill the joint space when manhole sections are stacked.</li> <li>• Shall be protected by a suitable removable two-piece wrapper.</li> <li>• Affidavit of compliance to this specification shall be available upon request.</li> </ul>		
<p><b><u>RESTRICTIONS:</u></b></p>	<p><b><u>MANUFACTURER:</u></b></p> <ul style="list-style-type: none"> <li>• HENRY COMPANY- RAM-NEK/ RN101</li> <li>• OPEN</li> </ul>	

**M 4.1 – FLEXIBLE BUTYL JOINT SEALANTS:**

Effective Date: 01-01-19  
Revision #: 2

**SPECIFICATION:**

Preformed flexible butyl plastic joint sealant (gaskets) shall meet or exceed the performance specifications of:

- ASTM C-990 standard specification for joints, concrete pipe, manholes and pre-cast box sections.
- Federal Specification SS-S210-A, "Sealing Compound Preformed Plastic for Pipe Joints", Type 1, Rope Form.
- AASHTO M-198B.
- Shall be produced from special blend of butyl and asphalt.
- Shall appear as a extruded black fluid coil.
- Shall be protected by a suitable removable two piece wrapper.
- Affidavit of compliance to this specification shall be available upon request.



	TEST	REQUIRED
<b>Chemical Composition</b>		
Hydrocarbon, % by weight	METHOD ASTM D 4-80	50-70
Inert Mineral Filler, % by weight	AASHTO T111	30-50
Volatile Matter, % by weight	ASTM D 6-80	2.0 Max.
<b>Physical Properties*</b>		
Specific gravity, @ 77F.	ASTM D 71-84	1.2-1.35
Ductility at 77F, cm	ASTM D 113-85	5.0 min.
Softening Point, Ring & Ball, @ 77F	ASTM D 36-86	320 min.
Penetration, Cone, @ 77 F, 150 g, 5 sec., in 0.1 mm	ASTM D 217-82	50-120
Flash Point, Cleveland Open Cup, F	ASTM D 92-85	600 min.
Fire Point, Cleveland Open Cup, F	ASTM D 92-85	625 min.
Compression Test @77° F lbf/in <sup>2</sup>	ASTM C 972	100 max.
Compression Test @ 32° F lbf/in <sup>2</sup>	ASTM D 972	200 max.
<b>Sag or Flow Resistance</b>		
Sag or flow resistance, in vertical position for 5 days @ 135 F	FS SS-S-210A sect. 4.5/ASTM C 990	No sagging
<b>Chemical Resistance</b>		
30 days immersion @ room temperature in each of the following:	FS SS-S-2120A sect. 3.6/ASTM C 990	
5% Solution of Caustic Potash		No visible Deterioration
5% Solution of Hydrochloric Acid		No visible Deterioration
5% Solution of Sulfuric Acid		No visible Deterioration
Saturated Hydrogen Sulfide Solution		No visible Deterioration

**MANUFACTURER:**

- HENRY COMPANY- BUTYL-NEK/ BN109
- OPEN

**RESTRICTIONS:**



**M 5 – POLYURETHANE ADHESIVE SEALANT/ CAULK:**

Effective Date: 01-01-19  
 Revision #: 2

**SPECIFICATION:**

High-performance polyurethane adhesive & sealant shall meet or exceed the performance specifications of:

- Shall be a high-performance marine grade polyurethane adhesive sealant.
- Shall have a minimum tensile strength of 600 psi.
- Shall have a minimum 900% elongation before breaking.
- Shall be suitable for above and below water applications.
- Shall not shrink.
- Shall create a permanent bond with fiberglass and gel coat material.
- Affidavit of compliance to this specification shall be available upon request.

**INTENDED USE:**

- Installation of inside drop bowl.
- Sealing of bowl to manhole wall.



**MANUFACTURER:**

- 3M MARINE ADHESIVE SEALANT 5200
- 3M MARINE ADHESIVE SEALANT FAST CURE 5200

**RESTRICTIONS:**

**M 6 – PROTECTO 401 / PERMOX CTF / TNEMEC SERIES 431  
PERMASHIELD PL TOUCH-UP KIT:**

Effective Date: 01-01-19  
Revision #: 2

**SPECIFICATION:**

Touch-up kits shall meet or exceed the performance specifications of:

- Shall be applied per manufactures procedure.
- Affidavit of compliance to this specification shall be available upon request.

**SURFACE PREPARATION:**

- The surface preparation shall be equal to the specifications for the project or as outlined in the touch-up procedure.
- Shall not be applied over wet or frozen surfaces.

**APPLICATION DATA:**

- Dry film thickness shall be as outlined in specifications.

**INTENDED USE:**

- Sealing of cut ends of lined pipe.
- Repairing field damaged areas of lined pipe and fittings.



**MANUFACTURER:**

- PROTECTO 401
- PERMOX CTF
- TNEMEC SERIES 431 PERMASHIELD PL

**RESTRICTIONS:**