3M™ Scotchkote™
Epoxy Coating 162HB

Data Sheet and Application Guide

Product Description
3M™ Scotchkote™ Epoxy Coating 162HB has been specifically developed as a 100% solids lining for the internals of pipes, tanks, vessels and other equipment in contact with fresh water, sea water, raw water, and effluent. The product can also be used on externals of pipes where an abrasion-resistant system is required. Scotchkote coating 162HB is designed for application in a single high build coat of up to 1mm, by plural feed hot airless spray and can be used on both steel and concrete surfaces.

Features
• 100% Solids
• Meets or exceeds the requirements of:
  – AWWA C210 Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
  – AWWA C550 Protective Interior Coatings for Valves and Hydrants

Intended Uses
Internals and externals of pipes, tanks, vessels and other equipment in contact with fresh water, sea water, raw water, and effluent.

Not approved for potable water applications.

Recommended Substrates
Steel, concrete (when used with 3M™ Scotchkote™ Epoxy Sealer SP 810)

Method of Application
Plural feed hot airless spray, brush or roller for small areas

Colors
Gray and Red Oxide

Mix Ratio
2:1 by Volume
2:1 by Weight

Components
Part A: Thixotropic liquid epoxy (gray or red)
Part B: Thixotropic liquid amine (off white)

Solids Content
100% solids

VOC Content
6.5 g/L as calculated

Typical Film Thickness
Wet/Dry 20 mils (500 micron)

Note: The thickness to be applied should be agreed upon between the specifier and the manufacturer dependant on operational performance criteria.

Theoretical Coverage Rate
2 square meters per liter at 500 micron dft.
21.5 square feet per liter at 20 mils dft.

Cure Times at 20°C (68°F)
Pot (usable) Life: 45 min at 104°F (40°C)
Touch Dry: 6 hours
Hard Dry: 16 hours
Full Cure: 7 days

Shelf Life/Storage Temperature
Use within 5 years of manufacture date. Store in original sealed containers at temperatures between 5°C (40°F) and 32°C (90°F).

Packaging
Supplied in 1 liter kits or the Base and Activator supplied separately in 18 and 180 liter units (2 Base to 1 Activator).

Primers
Concrete substrates should be sealed with 3M™ Scotchkote™ Epoxy Sealer 810.
### AWWA C210-07 Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines

<table>
<thead>
<tr>
<th>Test Requirement</th>
<th>Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion (ASTM D4541 psi (kPa), min.)</td>
<td>&gt;2900 psi (&gt;20,000 kPa) (&gt;20 MPa)</td>
</tr>
<tr>
<td>Thickness, dry film, mils</td>
<td>20 mils (500 μm)</td>
</tr>
<tr>
<td>Immersion and vapor phase, 30 days</td>
<td>No blistering or disbondment</td>
</tr>
<tr>
<td>a. Deionized Water</td>
<td>Pass</td>
</tr>
<tr>
<td>b. Sulfuric Acid, 1% by wt</td>
<td>Pass</td>
</tr>
<tr>
<td>c. NaOH, 1% by wt</td>
<td>Pass</td>
</tr>
<tr>
<td>Cathodic Disbondment (ASTM G8)</td>
<td>&lt;1 mm</td>
</tr>
</tbody>
</table>

### AWWA C550-05: Protective Interior Coatings for Valves and Hydrants

**Requirements:** No disbondment, undercutting or blistering of the coating after a 90-day immersion in the following solutions at 70°C.

<table>
<thead>
<tr>
<th>Test</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distilled Water Immersion (with a 3” scribed X in the coating)</td>
<td>Pass: No disbondment, undercutting or blistering</td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride Immersion (2% by wt)</td>
<td>Pass: No disbondment, undercutting or blistering</td>
<td></td>
</tr>
<tr>
<td>Potassium Biphthalate Immersion (pH = 4)</td>
<td>Pass: No disbondment, undercutting or blistering</td>
<td></td>
</tr>
<tr>
<td>Sodium Carbonate Immersion (pH = 10)</td>
<td>Pass: No disbondment, undercutting or blistering</td>
<td></td>
</tr>
<tr>
<td>Direct Impact (D2794) 20 in·lbf (2.26 J), Minimum</td>
<td>70 in lbf (8 J)</td>
<td></td>
</tr>
</tbody>
</table>

### Chemical/Pressure/Temperature Resistance

<table>
<thead>
<tr>
<th>Test Conditions</th>
<th>Gas Phase</th>
<th>Organic Phase</th>
<th>Aqueous Phase</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoclave, 176°F/80°C 96 hours, 15 psi/103 kPa</td>
<td>5% H₂S, 5% CO₂, 90% CH₄</td>
<td>50% kerosene, 50% toluene</td>
<td>5% NaCl</td>
<td>No blistering, cracking, or adhesion loss in the gas, hydrocarbon, and aqueous phases. Excellent resistance to permeability in all three phases.</td>
</tr>
<tr>
<td>Autoclave, 203°F/95°C 96 hours, 15 psi/103 kPa</td>
<td>5% H₂S, 5% CO₂, 90% CH₄</td>
<td>50% kerosene, 50% toluene</td>
<td>5% NaCl</td>
<td>No blistering, cracking, or adhesion loss in the gas, hydrocarbon, and aqueous phases. Excellent resistance to permeability in all three phases.</td>
</tr>
</tbody>
</table>
Surface Preparation

Steel Surfaces – Coating performance is dependent on the cleanliness of the substrate surface. It must be clean, dry and free of loose rust and scale, paint, etc. Remove all oils, grease, and other contaminants with a suitable solvent. Metal surfaces should be blast cleaned in accordance with NACE No. 2 SSPC-SP 10 ISO 8501:1, Grade SA 2 ½, near white finish using suitable abrasive to a minimum profile of 3 mils (75 microns).

Concrete Surfaces – Concrete surfaces should be lightly abrasive blasted, sponge blasted or mechanically scarified, taking care not to expose the aggregate. All dust and loose residue should then be removed and surfaces then sealed using 3M™ Scotchkote™ Epoxy Sealer 810.

Application Conditions

Do not apply when the relative humidity exceeds 90% or when the surface to be coated is less than 5°F (3°C) above the dew point.

Minimum temperature for application is 40°F (5°C).

Application

Plural Feed Hot Airless Sprayer

Typical Equipment: 2:1 Part A (Base) to Part B (Activator) proportioning pump, fitted with recirculating Part A (Base) and Part B (Activator) lines of sufficient length including ¼” whip end hose to reach all areas of the pipe with equipment located as close as possible to the pipe end. The equipment should have 60 mesh in-line filters, and either drum or in-line heaters or combination of both. The heaters to be capable of providing and maintaining a mixed temperature at the spray gun of 50-60°C. Adequate cover should be provided over the Part A (Base), solvent and Part B (Activator) containers in case of wet weather.

Spray Tip Size: 0.019” – 0.025”

Tip size and fan width will vary depending on caliper requirements and the geometry of the article to be coated. For example, if tanks contain any ancillary equipment the use of the smaller sizes to allow some control over film thickness is recommended.

In-line filters: 60 mesh

Tip Temperature: 122°F - 140°F (50°C - 60°C)

Tip Pressure: Typically 3000 psi

The pressure should only be as high as is necessary for proper atomization and will depend on application viscosity (which depends on material temperature), tip size and hoses sizes/lengths.

Brush and Roller Applications

Good quality brushes should be used for this method of application. Scotchkote coating 162HB should be applied to give a uniform even coating thickness, and best results are achieved when material and substrate temperatures are above 50°F (10°C).
Method of Mixing: Very thorough mixing is crucial for coating performance. For brush and roller application, stir the contents of the Base component, continue stirring and gradually add the total contents of the Activator component, continue stirring until a homogeneous mix is obtained.

Touch Up and Repair
All areas to be repaired and the surrounding area of firmly adherent coating should first be degreased thoroughly with detergent solution to remove all dirt, grease and oil, then rinsed off with fresh water and dried.

All areas to be repaired should be examined and all loose flaking material should be removed back to a firm edge. Angle grinders, needle guns or rotary grinders should be used to roughen the bare exposed substrate, and also to abrade 50-75mm of surrounding firmly adherent coating to ensure a good key for the newly applied Scotchkote coating 162HB.

All loose dust and abrasive residue should be removed from the surfaces to be coated using either a brush or air line. Surfaces should be degreased again with detergent solution, fresh water rinsed and then dried immediately prior to coating application.

Scotchkote coating 162HB should be thoroughly mixed together by stirring the contents of the Base component, continue stirring and gradually add the total contents of the Activator component, continue stirring until a homogeneous mix is obtained.

Edges of the cleaned and abraded existing sound coating should be masked off so that only the immediately surrounding clean and abraded coating will be over-coated, thus ensuring a very good adhesive key between the existing coating and the newly applied coating.

Scotchkote coating 162HB should be applied by brush to all cleaned and roughened exposed metal surfaces, and to the abraded surrounding existing coating up to the masking tape.

Scotchkote coating 162HB should be applied to all areas of repair to a wet and dry film build of at least 500 microns. The use of a wet film thickness gauge will assist in ensuring an adequate film build.

As soon as the newly brush applied Scotchkote coating 162HB is touch dry, the masking tape should be removed. At 20°C, the newly applied coating should be touch dry within 6 hours and hard dry within 16 hours.

Coating Procedure for Internals of Field Welded Pipe Joints
All weld areas should be thoroughly cleaned to remove welding spatter and debris, including damaged coating. For pipes with an internal diameter up to one meter, angle grinders rotary grinders can be used to create a coarse profile, for pipes with a diameter of one meter and above, surfaces must be grit-blasted.

The abraded area should extend from the edge of the weld area for 50-75 mm onto surrounding sound Scotchkote coating 162HB helping to ensure the surface of the coating is thoroughly uniformly profiled.

All loose dust and abrasive residue should be removed from the surface by brush or airline. Surfaces should then be degreased with detergent solution to help ensure no oil or grease resulting from the abrading process is present.

Scotchkote coating 162HB should now be thoroughly mixed together by stirring the contents of the Base component, continue stirring and gradually add the total contents of the Activator component, continue stirring until a homogeneous mix is obtained. Apply to the prepared area to the appropriate film thickness specified, typically 1mm for joints.

Ordering Information/Customer Service
For ordering, technical or product information, or to request a copy of the Material Safety Data Sheet, call: +1(800) 722-6721