SECTION A. ASPHALT PATCHING MATERIALS

SECTION A.1: HIGH PERFORMANCE COLD PATCH MATERIALS

GENERAL

This evaluation procedure outlines the Department’s approval process for asphalt cold-mix patching materials composed of a suitable aggregate and additives for the repair of both asphalt and concrete surfaces.

SPECIFICATIONS

- None

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

Following receipt of the submitted information, the manufacturer shall be required to install his product on both asphalt and concrete surfaces as directed by the Division of Materials and Tests. The cold patch material shall be installed in either November or December and the evaluation will continue through the end of May of the following year. At the completion of the evaluation period, if the test areas in both the concrete and asphalt surfaces have remained intact and performed satisfactorily, the material will be added to the Qualified Products List.
SECTION A.2: ELASTOMERIC PATCHING MATERIALS HOT APPLIED

GENERAL

This evaluation procedure outlines the Department’s approval process for elastomeric patching materials used for patching potholes in asphalt and concrete pavements.

SPECIFICATIONS

- None

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

Following receipt of the submitted information, the manufacturer shall be required to install his product on an asphalt and concrete surface as directed by the Division of Materials and Tests. The patching material shall be left in the field for 6 months to 1 year. At the completion of the evaluation period, if the test patch area has remained intact and performed satisfactorily, the material will be added to the Qualified Products List.
SECTION A.3: ELASTOMERIC PATCHING MATERIALS COLD APPLIED

GENERAL

This evaluation procedure outlines the Department’s approval process for elastomeric patching materials used for patching potholes in asphalt and concrete pavements.

SPECIFICATIONS

- None

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

Following receipt of the submitted information, the manufacturer shall be required to install his product(s) on an asphalt and/or concrete surface as directed by the Division of Materials and Tests. The patching material shall be left in the field for 6 months to 1 year. At the completion of the evaluation period, if the test patch area has remained intact and performed satisfactorily, the material will be added to the Qualified Products List.
SECTION B. CONCRETE PATCHING MATERIALS

SECTION B.4: RAPID SET CEMENTITIOUS PATCHING MATERIALS

GENERAL

This evaluation procedure outlines the Department’s approval process for rapid setting cementitious patching materials used in bridge and concrete repair.

SPECIFICATIONS

- ASTM C579 – Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes
- NTPEP Review – http://www.nt pep.org/Pages/RSCP.aspx

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

The Department uses the National Transportation Product Evaluation Program (NTPEP) for approval for rapid set cementitious patching materials. The NTPEP data must be submitted to the Department and must meet the following requirements:

<table>
<thead>
<tr>
<th>Age</th>
<th>Compressive Strength (psi)</th>
<th>Length Change (% decrease)</th>
<th>Slant Shear (Hardened-to-Plastic) (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 hours</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 day</td>
<td>3000</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>7 days</td>
<td>4000</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>28 days</td>
<td>&gt; 7-day strength</td>
<td>&lt; 0.06</td>
<td></td>
</tr>
</tbody>
</table>
SECTION B.5: HIGH PERFORMANCE COLD PATCH MATERIALS

GENERAL

This evaluation procedure outlines the Department’s approval process for asphalt cold-mix patching materials composed of a suitable aggregate and additives for the repair of both asphalt and concrete surfaces.

SPECIFICATIONS

- None

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

Following receipt of the submitted information, the manufacturer shall be required to install his product on both asphalt and concrete surfaces as directed by the Division of Materials and Tests. The cold patch material shall be installed in either November or December and the evaluation will continue through the end of May of the following year. At the completion of the evaluation period, if the test areas in both the concrete and asphalt surfaces have remained intact and performed satisfactorily, the material will be added to the Qualified Products List.
QPL 13: PATCHING MATERIALS

SECTION B.6: TWO-COMPONENT EPOXY-TYPE PATCHING MATERIALS

GENERAL

This evaluation procedure outlines the Department’s approval process for two component-epoxy type patching materials used in bridge and concrete repair.

SPECIFICATIONS

- ASTM C882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear
- NTPEP Review – http://www.ntpep.org/Pages/RSCP.aspx

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

The Department uses the National Transportation Product Evaluation Program (NTPEP) for approval for two-component epoxy-type patching materials. The NTPEP data must be submitted to the Department and must meet the following requirements:

<table>
<thead>
<tr>
<th>Age</th>
<th>Compressive Strength (psi)</th>
<th>Slant Shear (Hardened-to-Plastic) (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 hours</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>1 day</td>
<td>3000</td>
<td>1000</td>
</tr>
<tr>
<td>7 days</td>
<td>4000</td>
<td>1500</td>
</tr>
<tr>
<td>28 days</td>
<td>&gt; 7-day strength</td>
<td></td>
</tr>
</tbody>
</table>
GENERAL

This evaluation procedure outlines the Department’s approval process for epoxy type patching materials used to make cosmetic bridge and concrete repairs.

SPECIFICATIONS

- ASTM C882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

The product will be mixed according to the manufacturer’s recommendations and must meet the following requirements.

<table>
<thead>
<tr>
<th>Age</th>
<th>Slant Shear (Hardened-to-Plastic) (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day</td>
<td>1000</td>
</tr>
<tr>
<td>7 days</td>
<td>1500</td>
</tr>
</tbody>
</table>
QPL 13: PATCHING MATERIALS

SECTION B.8: NO LONGER ACTIVE

REFER TO QPL 16: PRE-PACKAGED GROUT
SECTION B.9: POLYMER-MODIFIED CEMENTITIOUS STRUCTURAL PATCHING VERTICAL AND OVERHEAD

GENERAL

This evaluation procedure outlines the Department’s approval process for polymer modified cementitious patching materials used for overhead and vertical structural repair of bridge members.

SPECIFICATIONS

- NTPEP Review – http://www.ntpep.org/Pages/RSCP.aspx

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

The Department uses the National Transportation Product Evaluation Program (NTPEP) for approval for polymer-modified cementitious structural patching vertical and overhead. The NTPEP data must be submitted to the Department and must meet the following requirements:

<table>
<thead>
<tr>
<th>Age</th>
<th>Compressive Strength (psi)</th>
<th>Length Change (% decrease)</th>
<th>Slant Shear (Hardened-to-Plastic) (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day</td>
<td>2000</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>7 days</td>
<td>4000</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>28 days</td>
<td>&gt;7-day strength</td>
<td>&lt; 0.15</td>
<td></td>
</tr>
</tbody>
</table>

The product can be extended with aggregate as recommended by the manufacturer and must have a working time of at least 10 minutes.
GENERAL

This evaluation procedure outlines the Department’s approval process for elastomeric patching materials used for patching potholes in asphalt and concrete pavements.

SPECIFICATIONS

- None

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

Following receipt of the submitted information, the manufacturer shall be required to install his product(s) on an asphalt and/or concrete surface as directed by the Division of Materials and Tests. The patching material shall be left in the field for 6 months to 1 year. At the completion of the evaluation period, if the test patch area has remained intact and performed satisfactorily, the material will be added to the Qualified Products List.
SECTION B.12: ELASTOMERIC PATCHING MATERIALS
COLD APPLIED

GENERAL

This evaluation procedure outlines the Department’s approval process for elastomeric patching materials used for patching potholes in asphalt and concrete pavements.

SPECIFICATIONS

- None

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

Following receipt of the submitted information, the manufacturer shall be required to install his product(s) on an asphalt and/or concrete surface as directed by the Division of Materials and Tests. The patching material shall be left in the field for 6 months to 1 year. At the completion of the evaluation period, if the test patch area has remained intact and performed satisfactorily, the material will be added to the Qualified Products List.
SECTION B.11: METHACRYLATE BINDER RESIN SYSTEM

GENERAL

This evaluation procedure outlines the Department’s approval process for methacrylate binder resin systems used for sealing cracks in concrete surfaces.

SPECIFICATIONS

- TDOT Special Provision SP604CR – Special Provision Regarding Bridge Deck Cracks
- ASTM C882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete By Slant Shear

PROCEDURES

A completed Product Evaluation Form, Safety Data Sheet (if applicable), product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

The material is tested as follows:

1. Cut three 3”x 6” (75x150-mm) portland cement mortar cylinders in half at a 30-degree angle.
2. Clean all surfaces of cut halves, by either brushing or sandblasting.
3. Place the two halves of each specimen together, forming a gap approximately 0.02in. (0.5mm). Tape and the periphery of the specimen closed, but leave a slit of approximately ¾ in. (20 mm) of the upper portion of the joint.
4. Place silicone along the joint for an additional seal.
5. Support the specimen so that the cylinder is vertical. Slowly pour resin-bonding system into the exposed joint until it is completely filled.
6. Keep the joint vertical for 48 hours to cure.
7. Determine the compressive strength of the composite cylinder.

A minimum compressive strength of 1500 psi must be achieved for approval of the product.