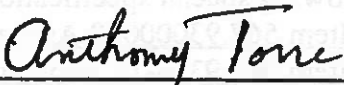


SUPERSEDED BY EB 15-031 EFFECTIVE 9/28/15		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 11- 003
Title: NEW SPECIFICATION FOR ASPHALTIC PLUG JOINTS FOR BRIDGES			
Target Audience: ☒ Manufacturers (A) ☐ Local Govt. (31) ☒ Agencies (32) ☐ Surveyors (33) ☒ Consultants (34) ☒ Contractors (39) ☐ _____ ()		Approved:  Anthony Torre, P.E. Acting Deputy Chief Engineer, Research 04-28-2011 Date	

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective beginning with projects submitted for the letting of 01/12/12.
- This issuance does not supersede any previous issuances.
- This specification will reside on the Department's internet site under Special Specification for Items 567.94---18 and 567.94000018 and Standard Specification 705-18.

PURPOSE: This EI transmits Special Specifications Item 567.94000018 Asphaltic Plug Joints for Bridges and Item 567.94---18 Asphaltic Plug Joints for Bridges, and a new Materials Standard Specification 705-18 Asphaltic Plug Joints for Bridges.

TECHNICAL INFORMATION:

- The special specifications will reference ASTM D 6279 *Standard Specification for Asphaltic Plug Joints for Bridges*. A new approved list will be created for this item.
- Prior to the effective date of this EI, designers should continue to use Special Specifications Item 567.93000018 and Item 567.93---18 Asphaltic Plug Bridge Joint System.
- Manufacturers must submit an application and request that their product be considered for placement on the Department's Approved List. Application forms are available on the Department's internet site <http://www.dot.state.ny.us> under "Approved List of Materials and Equipment Submission Instructions."
- Manufacturers proposing to supply Asphaltic Plug Joints for Bridges to the Department must submit Material Detail Sheets which contain all material requirements and installation information to the General Engineering Unit of the Materials Bureau for approval. The Materials Bureau will maintain an Approved List for Asphaltic Plug Joints for Bridges.
- It is anticipated that the cost of using Asphaltic Plug Bridge Joint System should decrease as this specification eliminates proprietary specifications and promotes competition between Asphaltic Plug Bridge Joint system manufacturers.
- Use of the aluminum plate option referenced in ASTM D 6279 will not be allowed at this time.

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DESIGN GUIDANCE:

This system is designed for movements at the joint of ± 1 inch (± 25 mm). It is intended to be used on roads with AADT ≤ 5000 and $\leq 10\%$ truck. The installed Asphaltic Plug Joints system dimensions will be no less than 2 inches (50mm) deep; the width will be in the range of 20-24 inches (500-600 mm).

IMPLEMENTATION:

- The following special specifications are disapproved:
Item 567.93000018 Asphaltic Plug Joints for Bridges
Item 567.93----18 Asphaltic Plug Joints for Bridges
- New Special Specifications:
Item 567.94000018 Asphaltic Plug Joints for Bridges
Item 567.94----18 Asphaltic Plug Joints for Bridges
- New Standard Specification:
705-18 Asphaltic Plug Joints for Bridges

TRANSMITTED MATERIALS:

New Standard Specification 705-18 Asphaltic Plug Joints for Bridges. Both Metric and US Customary versions are attached as well as new Special Specifications 567.94----18 and 567.94000018.

BACKGROUND:

Asphaltic Plug Joints for Bridges (APJ) are composed of a mixture of thermoplastic polymeric-modified asphalt, select aggregates, steel plate, locating pins (optional) and a backer rod. The joint system is capable of providing ± 1 inch (± 25 mm) of movement while maintaining a continuous load bearing surface.

Since installation methods vary among APJ manufacturers, they are required to submit Material Detail Sheets to the Materials Bureau for approval. Approved Material Detail Sheets will contain specific installation instructions and details for each APJ system and will be identified on the Approved List.

CONTACT:

If additional guidance is needed, feel free to contact Guy Hildreth at (518) 485-5431, ghildreth@dot.state.ny.us, Salah Ali at 518 485-9290, or smali@dot.state.ny.us

Make the following changes to Standard Specification Construction and Materials of May 1, 2008, insert the following:

705-18 ASPHALTIC PLUG JOINTS FOR BRIDGES

SCOPE. This specification covers the material requirements for asphaltic plug bridge joint systems.

MATERIAL REQUIREMENTS. The materials used to construct the asphaltic plug bridge joint system must conform to the requirements of ASTM D 6279 with the following exception:

- No aluminum plate will be allowed at this time.
- No sampling required.

Each manufacturer shall provide Materials Detail Sheets as part of the acceptance procedure to the Department. The installers/contractors shall adhere to approved manufacturer's Materials Details for preparation, construction, and curing.

The Materials Details shall provide the following:

1. Product Information:

- Identify Components
- Packing, storage and handling requirements

2. Surface Preparation:

- Weather limitations and surface conditions
- Preconditioning (removal) of existing joint system
- Surface preparation and level of cleanliness
- Address any structural repairs needed and method of repair to include compatible materials needed.

3. Application Procedures:

- Describe all procedures to be followed in preparation, heating, mixing and installation of system.

4. Curing:

- Describe curing procedure and anticipated cure times vs. temperature (Table recommended)
- Describe test(s) performed for quality assurance

PACKAGING. All components shall be shipped in appropriate containers, bearing the manufacturer's label specifying date of manufacture, batch number, brand name, quantity, and date of expiration or shelf life.

BASIS OF APPROVAL. Each system supplier/manufacturer must prove to the Department through acceptable field performance of this item prior to approval and acceptance to the Department's Approved List.

BASIS OF ACCEPTANCE. Acceptance of this material will be based on the manufacturer's name and system appearing on the Department's Approved List which will be accompanied by the Department's approved Materials Detail Sheet (MDS).

Make the following changes to Standard Specification Construction and Materials of May 4, 2006, insert the following:

705-18 ASPHALTIC PLUG JOINTS FOR BRIDGES

SCOPE. This specification covers the material requirements for asphaltic plug bridge joint systems.

MATERIAL REQUIREMENTS. The materials used to construct the asphaltic plug bridge joint system must conform to the requirements of ASTM D 6279 with the following exception:

- No aluminum plate will be allowed at this time.
- No sampling required.

Each manufacturer shall provide Materials Detail Sheets as part of the acceptance procedure to the Department. The installers/contractors shall adhere to approved manufacturer's Materials Details for preparation, construction, and curing.

The Materials Details shall provide the following:

- 1. Product Information:**
 - Identify Components
 - Packing, storage and handling requirements
- 2. Surface Preparation:**
 - Weather limitations and surface conditions
 - Preconditioning (removal) of existing joint system
 - Surface preparation and level of cleanliness
 - Address any structural repairs needed and method of repair to include compatible materials needed.
- 3. Application Procedures:**
 - Describe all procedures to be followed in preparation, heating, mixing and installation of system.
- 4. Curing:**
 - Describe curing procedure and anticipated cure times vs. temperature (Table recommended)
 - Describe test(s) performed for quality assurance

PACKAGING. All components shall be shipped in appropriate containers, bearing the manufacturer's label specifying date of manufacture, batch number, brand name, quantity, and date of expiration or shelf life.

BASIS OF APPROVAL. Each system supplier/manufacturer must prove to the Department through acceptable field performance of this item prior to approval and acceptance to the Department's Approved List.

BASIS OF ACCEPTANCE. Acceptance of this material will be based on the manufacturer's name and system appearing on the Department's Approved List which will be accompanied by the Department's approved Materials Detail Sheet (MDS).

567.94000018 ASPHALTIC PLUG JOINTS FOR BRIDGES

DESCRIPTION

Furnish and install Asphaltic Plug Joints for Bridges (APJ) into prepared joint recesses in accordance with the contract documents.

MATERIALS

Use an asphaltic plug bridge joint system appearing on the Department's Approved List of Materials and Equipment. All Materials shall meet the requirements of section 705-18 of the Standard Specifications.

The joint system will be comprised of the following components: a mixture of thermoplastic polymeric- modified asphalt, select aggregates, steel plate, locating pins (optional) and a backer rod. The joint systems shall be capable of providing up to ± 1 inch of movement while maintaining a continuous load bearing surface.

The aggregate will be double-washed, dried, and delivered to site in pre-weighed, labeled packages. The aggregates type and size will be identified in the Materials Details of the manufacturer.

The backer rod, used to control the depth of the binder material in the expansion gap shall be a closed cell foam expansion joint filler, compatible with the polymer modified bituminous binder and the elevated application temperature of the binder. The size of the backer rod shall be in accordance with the manufacturer's recommendation for the existing expansion gap width and the anticipated expansion and contraction at each joint.

The bridging plates shall be composed of A36/A36M mild steel and will have the following minimum dimensions: 3 feet long in the direction of the joint, 8 inches in width, and $\frac{1}{4}$ inch thick. When locating pins are required by the Materials Details, the bridging plate shall have pre-drilled holes at 12 inches on center.

A NYSDOT approved sealing material shall be used for sealing the expansion gap at curbs, parapets, and sidewalks.

CONSTRUCTION PROCEDURES

Install the asphaltic plug bridge joint system in accordance with the approved Materials Details for that system.

The joint opening will be prepared for the installation of the asphaltic plug bridge joint system to the satisfaction of the Engineer. All surfaces to come in contact with the joint system shall be abrasive blast cleaned.

Arrange for the asphaltic plug bridge joint system manufacturer to have a competent technical representative at the job site during all phases of preparation and installation of the system. The representative shall advise both the Engineer and the Contractor regarding proper installation procedures of their system. The representative may be released at the EIC's discretion after the initial installation.

This system should not be installed if the ambient temperature is expected to be below 40° F at any time during the installation. All receiving surfaces must be completely dry, air blasted and free from any foreign objects prior to any material application. The expansion gap at curbs, parapets, and sidewalks shall be sealed where shown on the plans.

After the joint system has been installed and exposed to normal daily vehicular traffic for a minimum of five (5) days, a Watertight Integrity Test as per 567.3.01H of the Standard Specifications shall be performed. Repairs made to the joint system for the successful completion of the Watertight Integrity Test shall be done at no cost to the State.

Repairs to the joint recess necessitated by the Contractor's operation shall be completed at no additional cost to the State. Repairs to the joint recess necessitated by deterioration of the concrete not attributable to the Contractor's operation will be eligible for payment. Note: Maximum joint width is 24 inches, concrete repairs needed to meet the opening size with other materials may warrant additional payment.

The manufacturer's representative shall provide written certification to the Engineer that the asphaltic plug bridge joint system was installed in accordance with the manufacturer's requirements.

For situations outside the system limits, contact the Materials Bureau for approval.

METHOD OF MEASUREMENT

Measurement for payment purposes shall be taken as the number of cubic feet of sealed joint system measured horizontally and vertically along the centerline of the completed joint system between the outer limits indicated on the Contract documents.

BASIS OF PAYMENT

The unit price bid per 0.1 cubic foot shall include all labor, materials, and equipment necessary to complete the work. This includes any required overlay, sidewalk and curbs work removal

567.94---18 ASPHALTIC PLUG JOINTS FOR BRIDGES

DESCRIPTION

Furnish and install Asphaltic Plug Joints for Bridges (APJ) into prepared joint recesses in accordance with the contract documents.

MATERIALS

Use an asphaltic plug bridge joint system appearing on the Department's Approved List of Materials and Equipment. All Materials shall meet the requirements of section 705-18 of the Standard Specifications.

The joint system will be comprised of the following components: a mixture of thermoplastic polymeric- modified asphalt, select aggregates, steel plate, locating pins (optional) and a backer rod. The joint systems shall be capable of providing up to ± 25 mm of movement while maintaining a continuous load bearing surface.

The aggregate shall be double-washed, dried, and delivered to site in pre-weighed, labeled packages. The aggregates type and size will be identified in the Materials Details of the manufacturer.

The backer rod, used to control the depth of the binder material in the expansion gap shall be a closed cell foam expansion joint filler, compatible with the polymer modified bituminous binder and the elevated application temperature of the binder. The size of the backer rod shall be in accordance with the manufacturer's recommendation for the existing expansion gap width and the anticipated expansion and contraction at each joint.

The bridging plates shall be composed of A36/A36M mild steel and will have the following minimum dimensions: 1 meter long in the direction of the joint, 200 mm in width, and 6 mm thick. When locating pins are required by the Materials Details, the bridging plate shall have pre-drilled holes at 300 mm on center.

A NYS DOT approved sealing material shall be used for sealing the expansion gap at curbs, parapets, and sidewalks.

CONSTRUCTION PROCEDURES

Install the asphaltic plug bridge joint system in accordance with the approved Materials Details for that system.

The joint opening shall be prepared for the installation of the asphaltic plug bridge joint system to the satisfaction of the Engineer. All surfaces to come in contact with the joint system shall be abrasive blast cleaned.

Arrange for the asphaltic plug bridge joint system manufacturer to have a competent technical representative at the job site during all phases of preparation and installation of the system. The representative shall advise both the Engineer and the Contractor regarding proper installation procedures of their system. The representative may be released at the EIC's discretion after the initial installation.

This system should not be installed if the ambient temperature is expected to be below 5° C at any time during the installation. All receiving surfaces must be completely dry, air blasted and free from any foreign objects prior to any material application. The expansion gap at curbs, parapets, and sidewalks shall be sealed where shown on the plans.

After the joint system has been installed and exposed to normal daily vehicular traffic for a minimum of five (5) days, a Watertight Integrity Test as per 567.3.01H of the Standard Specifications shall be performed. Repairs made to the joint system for the successful completion of the Watertight Integrity Test shall be done at no cost to the State.

Repairs to the joint recess necessitated by the Contractor's operation shall be completed at no additional cost to the State. Repairs to the joint recess necessitated by deterioration of the concrete not attributable to the Contractor's operation will be eligible for payment. Note: Maximum joint width is 600 mm, concrete repairs needed to meet the opening size with other materials may warrant additional payment.

The manufacturer's representative shall provide written certification to the Engineer that the asphaltic plug bridge joint system was installed in accordance with the manufacturer's requirements.

For situations outside the system limits, contact the Materials Bureau for approval.

METHOD OF MEASUREMENT

Measurement for payment purposes shall be taken as the number of cubic meters of sealed joint system measured horizontally and vertically along the centerline of the completed joint system between the outer limits indicated on the Contract documents.

BASIS OF PAYMENT

The unit price bid per 0.01 cubic meters shall include all labor, materials, and equipment necessary to complete the work. This includes any required overlay, sidewalk and curbs work removal.