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SUPERSEDED BY EB 99-025 EFFECTIVE 3/17/99

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: ITEM 18567.46 - ELASTOMERIC CONCRETE FOR BRIDGE JOINT SYSTEMS

Subject Code: 7.35-6

Distribution: 30 Main Office 32 Regions 34 Special

APPROVED: 4/12/91

Deputy Chief Engineer (Structures)

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Supersedes: EB 89-30

This EI transmits special specification 18567.46 Elastomeric Concrete For Bridge Joint Systems. The new specification becomes effective with the letting of August 1, 1991 and replaces Item 16567.45 Elastomeric Concrete For Joint Systems issued under Engineering Bulletin 89-30. Designers will be required to insert the new special specification into their proposals. The provisions of EB 89-30 remain in effect for those contracts let prior to August 1, 1991.

Item 16567.45 was issued with Engineering Bulletin 89-30 in response to several reported failures of elastomeric concrete materials. EB 89-30 implemented changes in the Department's policy for material selection and installation procedures. Under Item 16567.45 all elastomeric concrete materials were considered experimental and required Materials Bureau pre-approval.

As a continuation of the material re-evaluation process outlined in E.B. 89-30, the Materials Bureau has conducted a performance evaluation of existing elastomeric concrete products. Based on this evaluation, certain formulations have been granted pre-approved status. All other materials are considered experimental and may be installed on a particular project only with the prior approval of the Materials Bureau.

To incorporate provisions for both pre-approved and experimental materials in future work contracts, Item 18567.46 was developed. This item also includes new labeling requirements for the binder and primer material components.

Elastomeric concrete products that have been granted pre-approval are entered on the Materials Bureau's Approved List. The listing will include the product name, manufacturer, Materials Details reference number and date of last revision. Elastomeric concrete products with little or no experiential history in New York are considered experimental and will not appear in the Approved Lists.

The following restrictions apply to the use of Elastomeric Concrete:

I. Elastomeric concrete shall be used with strip seal type joints on decks with asphalt concrete overlays only. All other applications require specific approval of the D.C.E.S.

II. The use of Item 18567.46 requires approval for each contract on a project-by-project basis by the D.C.E.S. Application for approval shall be made directly to the DCES by the affected Region. Approval will be confirmed by memorandum to the Region with copies to all interested parties.

III. All strip seal type joint systems shall be anchored to the underlying structural slab using drilled and grouted anchor bolts, or any other method approved by the D.C.E.S.

Item 18567.46 includes the following provisions to assure proper installation and to provide for effective future performance evaluations:

1. The project EIC should notify the Director, Materials Bureau of the following information at least seven days prior to installation of the elastomeric concrete:

   A. Contract Number
   B. Product name of elastomeric concrete being used.
   C. Approximate date of installation.

2. A Technical Representative of the Material manufacturer shall be present during all phases of substrate preparation and material installation. No placement of material will be permitted unless the Technical Representative is present.

3. The elastomeric concrete is to be installed in strict accordance with the installation instructions included in the Materials Details and the recommendations of the Manufacturer's Technical Representative. Special care is to be taken during placement to insure that the elastomeric concrete completely fills the space under the steel extrusion in order to fully support the joint.

Any questions or clarifications regarding this E.I. should be directed to Dave Richards of the Materials Bureau at (518) 457-4285.

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DESCRIPTION

The work shall consist of furnishing and placing elastomeric concrete at the joint system locations indicated on the plans.

An experienced technical representative from the manufacturer of the elastomeric concrete shall be present during all phases of substrate preparation and material installation.

This material is proprietary. There is a possibility that royalty payments will be required.

MATERIALS

All elastomeric concrete components and primer materials shall be shipped in strong substantial containers sealed in a manner acceptable to the Engineer. Each container shall be plainly marked with the following:

1. Product Name.
2. Component Part.
3. Name and Address of Manufacturer.
4. Volatile Organic Compound (VOC) content (expressed in pounds per gallon).
5. Date of Manufacture.
6. Date of Expiration of Acceptance.
7. Batch Number.

All elastomeric concrete used for this work shall be either a pre-approved material or an experimental material.

Pre-approved Material. The product name of each pre-approved material appears on the Department's Approved List of Elastomeric Concretes. Pre-approved material shall be accepted at the project site based on the following:

1. Two copies of Materials Details for the elastomeric concrete shall be supplied to the Engineer at least ten days prior to the intended use of the product.

   The reference number and date of the Materials Details shall be identical to those shown on the Approved List.

2. Certification in writing by the Manufacturer that all materials being used are identical in formulation to those approved by the Materials Bureau shall be submitted to the Engineer (EIC) prior to any material installation.

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Experimental Material. Experimental elastomeric concrete shall be approved by the Director, Materials Bureau as a suitable substitute for pre-approved material prior to delivery to the job site. Full details regarding the process for designating an elastomeric concrete material as experimental may be obtained from the Director, Materials Bureau. Experimental material shall be accepted at the project site based on the following:

1. A copy of a letter from the Director, Materials Bureau stating that the experimental product is acceptable for use on the project in question. The letter shall include the contract number of the project for which use is approved and the Material Detail reference number and date. The letter shall be given to the Engineer prior to the delivery of any material.

2. Two copies of the Materials Details identified in the above letter supplied to the Engineer at least ten days prior to the intended use of the product.

3. Certification in writing by the Manufacturer that all materials being used are identical in formulation to those approved for experimental use by the Materials Bureau. This certification shall be submitted to the Engineer prior to any material installation.

Only one material, supplied by a single supplier, shall be used for this work. The combining of materials, or the installation of different materials at separate locations, will not be permitted unless specifically approved by the Director, Materials Bureau.

CONSTRUCTION DETAILS

The contractor shall notify the Director, Materials Bureau through the Engineer a minimum of seven days prior to installation of the elastomeric concrete. Notification will include the contract number, elastomeric concrete product name, and approximate date of installation.

An experienced technical representative employed by the Manufacturer of the elastomeric concrete shall be present during all phases of substrate preparation and material installation. No material placement will be permitted unless the Technical Representative is at the placement site. Waivers of this requirement may be granted only by the D.C.E.T.S. The representative shall:

1. Advise both the Engineer and the Contractor regarding proper installation procedures to assure the elastomeric concrete is installed correctly.

2. After installation is completed, certify to the Engineer in writing that the elastomeric concrete was installed in accordance with the Manufacturer's requirements.

The material shall be installed in strict accordance with the installation instructions included in the Materials Details and the recommendations of

the Manufacturer's Technical Representative. In the event of a conflict, the Engineer will contact the Director, Materials Bureau, prior to the placement of any elastomeric concrete material. All resolutions made by the Director, Materials Bureau shall be final and binding.

Unless the Materials Details require more thorough cleaning, the following surface cleanliness requirements shall apply:

1. All metal surfaces to come in contact with the elastomeric concrete shall be abrasive blast cleaned in accordance with the requirements of SSPC SP-6 Commercial Blast Cleaning. All cleaned metal surfaces shall correspond to SSPC Vis-1, surface preparation grades BSa2 or CSa2, as applicable. No visible rust will be permitted.

2. All concrete surfaces to come in contact with the elastomeric concrete shall be abrasive blast cleaned of all laitance, oil, grease, or any other material which may affect the bond between the elastomeric material and the concrete.

Immediately prior to material installation all receiving surfaces shall be vacuum cleaned or air-blown with oil-free compressed air. No loose material of any nature shall be permitted on any receiving surface.

Because of the stiff consistencies and fast setting properties of elastomeric concretes, care shall be exercised to eliminate voids in the material. It is essential to the performance of the joint that the elastomeric concrete completely fills the space under the steel extrusion in order to provide the necessary support.

After the elastomeric concrete has been installed, cured and exposed to normal daily vehicular traffic for a minimum of five days, a watertightness integrity test shall be performed. The watertightness test shall be performed in accordance with the requirements of subsection 567-3.01D.

METHOD OF MEASUREMENT

The work will be measured as the number of linear feet of elastomeric concrete installed as required. Measurement will be taken along the centerline of joint system, between the outer limits of the installed material. Only a single measurement will be taken along each installed joint system regardless of the number of recesses, openings, or voids, filled with elastomeric concrete. Measurement will be taken only after the completion of a watertightness test meeting all of the requirements and conditions of subsection 567-3.01D.

BASIS OF PAYMENT

The unit price bid per linear foot shall include the cost of all labor, materials, and equipment necessary to complete the work.

No payment will be made for any material installed as replacement material for that removed, unless the Engineer certifies that the reason for removal was beyond the contractor's control, or the plans specifically require the removal.