Note: *Highlighted, italicized text* indicates REVISIONS to the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

SECTION 403 - STEEL STRUCTURES

403.09 SETTING ANCHOR BOLTS AND EXPANSION BEARINGS

[Include the following with any Contract requiring Bearings:]

Delete the second paragraph and replace it with the following:

The anchor bolts shall be set in a bonded epoxy or resin conforming to the requirements of Subsection 923.22 and in accordance with the epoxy or resin manufacturer's recommendations and the provisions of the Plans. Anchor bolts shall not be placed in oversized drilled or preformed holes in bearing applications where the bearings are subject to net uplift or tension as indicated on the Plans.

In Paragraph (B), delete the 7th to last paragraphs in their entirety.

NOTE TO REVIEWER: The following language is ADDED to the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

SECTION 407 – TFE EXPANSION BEARINGS

This Section is deleted in its entirety.

NOTE TO REVIEWER: The following language REPLACES its respective language in the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

SECTION 408 – ELASTOMERIC BEARINGS

This Section is deleted in its entirety and replaced with the following:

SECTION 408 – LAMINATED ELASTOMERIC BEARINGS

408.01 DESCRIPTION

This work shall consist of furnishing, fabricating, and installing Laminated Elastomeric Bearings.

This work shall also include the furnishing, fabrication, and installation of polytetrafluoroethylene (PTFE)/stainless steel sliding surfaces, masonry plates, sole plates, anchor bolts, hardware, and bearing pads as shown on the Plans, described herein, recommended by the Manufacturer, or otherwise required to furnish completely installed and functioning Laminated Elastomeric Bearings.

Where applicable, this work shall also include the bearing seat preparation including existing anchor bolt removals, as indicated on the Plans or as otherwise required to install the new Laminated Elastomeric Bearings.

Materials, testing, and fabrication/construction operations not specifically denoted on the Plans and in these Specifications shall be in accordance with the current AASHTO LRFD Bridge Construction Specifications.

For information regarding replacement of existing bearings (field measurements, removal of existing, jacking, temporary support, etc.) see Section 418.

408.02 MATERIALS

Unless otherwise specified on the Plans, steel used for the fabrication of bearing assemblies shall conform to ASTM A709, Gr. 36, Gr. 50, Gr. 50W, or an approved equivalent.

Stainless steel sliding surfaces, where specified, shall conform to ASTM A240 type 304

and have a minimum thickness of 16 gage.

Materials not otherwise specified in this Section or shown on the Standard Drawings, including PTFE sliding surface requirements shall conform to AASHTO LRFD Bridge Construction Specifications and the following Subsections:

Bolts and Bolting Materials.....909.02
Caulking Compound.....923.05
Anchor Bolt Epoxy Systems.....923.22(B)

408.03 QUALIFIED MANUFACTURERS

Where Laminated Elastomeric Bearings are noted on the Plans for use, approved products from any Qualified Manufacturer may be provided. The following Manufacturers are qualified for use:

(1) **The D.S. Brown Company**
North Baltimore, OH
Telephone: 419-257-3561

(2) **AMSCOT Structural Products Corp.**
Dover, NJ
Telephone: 973-989-8800

(3) **Cosmec, Inc.**
Walpole, MA
Telephone: 508-668-6600

(4) **Tobi Engineering**
Glenview, IL
Telephone: 847-724-7880

(5) **Scougal Rubber**
Reno, NV
Telephone: 775-284-8500

(6) **Seismic Energy Products**
Athens, TX
Telephone: 903-675-8571

408.04 SHOP AND WORKING DRAWINGS

Shop and Working drawings shall be furnished to the Engineer in accordance with Subsection 104.08. The following information shall be included. Items noted with an * shall only be required for bearings with TFE sliding surfaces:

(1) The total quantity of each kind of bearing required (fixed, guided, or non-guided,

guided with TFE sliding surface , or non-guided with TFE sliding surface), grouped according to load range.

(2) Plan view and section elevation including all dimensions required for fabrication.

(3) Details of all components and sections showing all materials incorporated into the bearing.

(4) All ASTM, AASHTO, and other applicable material designations.

(5) The coefficient of friction for all sliding surfaces, where required.

(6) Details of any welding process used in the bearing manufacture that does not conform to the approved processes of the current ANSI/AASHTO/AWS D1.5 Bridge Welding Code or the ANSI/AWS D1.6 Structural Welding Code – Stainless Steel.

(7) Vertical, horizontal, rotation, movement, and load capacities.

(8) A schedule of all bearing offsets, where required, to ensure proper bearing alignment under full dead load.*

(9) Paint or coating requirements, as required.

(10) Installation scheme with blocking or jacking schemes, as required.

(11) Anchorage details.

(12) Location of the fabrication plant.

(13) The Manufacturer's name and the name of its representative responsible for coordinating production, sampling, and testing.

(14) The Manufacturer's certification package, according to Subsection 105.04, that shall contain the following:

a. Material test reports for all steels used.
b. Certificate of Compliance for all non-ferrous metals.
c. Material test reports for elastomeric components.
d. Certificate of Compliance for PTFE and any adhesive used.*
e. A Certificate of Compliance for the Laminated Elastomeric Bearings, executed by an officer of the Manufacturer.
f. Certificate of Compliance for any dowels or bolts supplied.
g. Test reports for the performance tests.

(15) Completed as-built elastomeric bearing table.

The shop and working drawings must be approved by the Engineer before fabrication of the bearings begins. Such approval shall not relieve the Contractor of any responsibility under the contract for the successful completion of work.

408.05 FABRICATION OF LAMINATED ELASTOMERIC BEARING ASSEMBLIES

(A) FABRICATION

Section 18 – Bearings of the AASHTO LRFD Bridge Construction Specifications shall be followed for the fabrication of laminated elastomeric bearing assemblies with additional provisions as noted below:

Laminated Elastomeric Bearings shall be fully vulcanized to the sole plates and base plates during the fabrication process. Where size or geometry of the sole or masonry plates make vulcanization impractical, at the permission of the Engineer, the Laminated Elastomeric Bearings may be vulcanized to load plates which may then be shop welded to the sole and masonry plates, as shown on the Standard Drawings. The use of optional load plates, associated welding, and any

required adjustment to the substructure bearing seat elevation(s) shall be at no additional cost to the Authority.

The Contractor shall have a minimum 10% of all welds tested by magnetic particle method. Testing shall be performed by an independent laboratory procured by the Contractor. The Contractor shall submit test reports to the Engineer.

(B) COATING OF STEEL SURFACES

All surfaces, except those defined below shall be coated. The surfaces to be coated shall be shown on the working drawings. Coatings shall not impair the clarity of the bearing identification markings. All flame cut edges of the bearing plates shall be ground to reduce hardness and facilitate blast cleaning. All corners of the sole plate shall be rounded to a 1/16 inch radius. All exposed plain steel surfaces shall be blast cleaned to a near white finish in accordance with SSPC SP-10.

Sliding surfaces shall not be coated.

Elastomeric bearing pads and steel reinforcement shall not be coated.

(1) Bearings for Steel Superstructures:
Laminated Elastomeric Bearing steel shall be painted in accordance with Specification Section 411. Quality assurance inspection of coatings will be in accordance with Specification Section 411. Only the prime coat shall be applied in the shop. All final coats shall be field applied after the installation of the bearings.

(2) Bearings for Concrete Superstructures:
Bearing steel shall either be galvanized in accordance with ASTM A-123 or ASTM A-153, as appropriate, or zinc metalized in accordance with AWS C2.2 to a finished coating minimum thickness of 10 mil. Quality assurance inspection will be performed by using magnetic thickness gauges.

(C) TESTING

Testing shall be performed by the manufacturer prior to installation of the bearings, and in the presence of the Engineer or designated testing laboratory inspector.

Elastomeric materials and Laminated Elastomeric Bearings shall be tested in accordance with Section 18.2.5 of the latest AASHTO LRFD Bridge Construction Specifications. For the purposes of testing procedure selection, bearings shall be assumed to have been designed using Method B unless otherwise specified on the Contract Plans or elsewhere in these Specifications.

Sampling, testing and acceptance consideration will be made on a lot basis. A lot shall be defined as a group of no more than fifty (50) bearings with the same size elastomeric pad and design load rating manufactured in a reasonably continuous manner from the same batch of elastomer, and cured under the same conditions. This definition supersedes Section 8.2 of the AASHTO M-251 Specification.

(D) PACKING AND SHIPPING

(1) Bearings shall be securely banded together, as units, by the Manufacturer. They shall be shipped to the project site and stored without disassembly. The bearings shall be wrapped in moisture resistant and dust resistant material to protect them against shipping, weather, job site conditions, and all other normal hazards.

(2) Each bearing shall be marked in a permanent fashion that will be visible after application of any paint coatings. The marking shall consist of the letters "N.J.T.A.", the location, orientation, order number, lot number, bearing identification number, bridge number, and month and year of manufacture. Unless otherwise specified in the Contract Documents, the marking shall be on a face which is visible after erection of the bridge.

(3) The bearings shall be inspected within one week after arriving on the project. Following the inspection, they shall be re-wrapped and kept clean until installation.

(4) When installed, bearings shall be clean and free of all foreign substances.

(5) With each shipment, a copy of the materials, fabrication and testing compliance certifications shall be enclosed along with a certificate of compliance for the bearing as a whole, and for all anchor bolts, dowels or other accessories, as required.

408.06 MEASUREMENT

Laminated Elastomeric Bearings of the various sizes and types will be measured by the number of each type and size installed and accepted.

All labor and equipment necessary to obtain field measurements will not be measured for payment.

Shop and/or field painting, galvanizing/metallizing, welding, and testing of welds will not be measured for payment.

Laminated Elastomeric Bearings set on a common masonry plate shall be measured as two individual Laminated Elastomeric Bearings.

408.07 PAYMENT

Payment will be made under:
Laminated Elastomeric Bearing ___"x___"..……..……...…Each
Laminated Elastomeric Bearing ___"x___", Guided….……..……...Each
Laminated Elastomeric Bearing ___"x___", Fixed…….……..……...Each
Laminated Elastomeric Bearing ___"x___", with TFE Sliding Surface, Guided...Each
Laminated Elastomeric Bearing ___"x___", with TFE Sliding Surface…….…..…Each

No separate payment will be made for additional Laminated Elastomeric Bearings or bearing materials furnished or otherwise consumed for testing purposes. The cost for these bearings or bearing materials shall be considered as incidental to the Laminated

Elastomeric Bearing pay item.

No separate payment will be made for grout/leveling pads, fabric pads, TFE sliding surface, masonry plate, sole plate, load/leveling plates, anchor bolts, caulk, elastomeric bearing pads, welding, coatings, or any other materials and hardware required to furnish and install fully functional and accepted Laminated Elastomeric Bearings. The cost for these materials shall be considered as incidental to the Laminated Elastomeric Bearing pay item.

No separate payment will be made for installation including the jacking or supporting of the superstructure. These costs shall be considered as incidental to the Laminated Elastomeric Bearing pay item.

No separate payment will be made where bracing or jacking of Laminated Elastomeric Bearings is required to set them to final deformations as indicated on the Plans. These costs shall be considered as incidental to the Laminated Elastomeric Bearing pay item.

No separate payment will be made for coatings or repair of damaged coatings. The costs of coatings or repair of damaged coatings shall be considered as incidental to the Laminated Elastomeric Bearing pay item.

Note: *Highlighted, italicized text* indicates REVISIONS to the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

SECTION 438 - SEISMIC ISOLATION BEARINGS

438.03 QUALIFIED ISOLATOR MANUFACTURERS

The following Isolator Manufacturers have been approved for use.

Lead-Rubber Seismic Isolation Bearings manufactured by:

Dynamic Isolation Systems, Inc.
885 Denmark Drive, Suite 101
McCarran, Nevada 89434
Telephone: (775) 359-3333
Fax: (775) 359-3985

Seismic Energy Products, L.P.
518 Progress Way
Athens, Texas 75751
Telephone: ~~*(903) 677-4318*~~ *(903) 675-8571*
Fax: (903) 677-4980

EradiQuake Seismic Isolation Bearings manufactured by:

R.J. Watson, Inc.
~~*78 John Glenn Drive*~~ *11035 Walden Avenue*
~~*Amherst*~~ *Buffalo*, New York ~~*14228*~~ *14004*
Telephone: ~~*(716) 691-3301*~~ *(716) 901-7020*
Fax: (716) 901-7015

Friction Pendulum Isolation Bearings manufactured by:

Earthquake Protection Systems, Inc.
451 Azuar Drive, Building 759
Mare Island, Vallejo, California 94592
Telephone: (707) 644-5993
Fax: (707) 644-5995

NOTE TO REVIEWER: The following language REPLACES its respective language in the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

NOTES TO DESIGNER:

All Applications:
As per the provisions of this Specification, the Contractor bears responsibility for the final design, detailing and furnishing of masonry plates, sole plates, anchor bolts, hardware, and bearing pads as required or as shown on the Plans. It is the responsibility of the Designer to provide adequate information to the Contractor so that these attachment details can be completely designed and detailed by the Contractor or Contractor's engineer. This may be accomplished via furnishing of appropriate as-built documents as reference drawings, or by providing supplementary details in the Contract Plans. Contract Plans shall consider the use of all Approved Manufacturers. Documented coordination with the Approved Manufacturers verifying the suitability of these details for bearing fitment shall be obtained and documented.

Retrofit Applications
Jacking of girders for replacing bearings is not included for payment in this specification. It is the designer's responsibility to prepare a separate "structural jacking" pay item and specification for that work.

Some older structures contain asbestos transite ducts encasing existing bearing anchor bolt embedments. As-Built plans should be thoroughly reviewed to ensure that asbestos elements are identified and the Contractor is alerted to their presence on the Contract Plans. Requirements for the removal and disposal of transite ducts shall be provided to the Contractor.

Many older structures contain lead paint in the canvas pads beneath the existing bearing masonry plates. As-Built plans should be thoroughly reviewed to ensure that lead paint coated canvas pads are identified and the Contractor is alerted to their presence on the Contract Plans. Handling and Disposal procedures shall be part of the Lead Health and Safety Plan as per Section 411 of these Specifications.

SECTION 439 – HIGH-LOAD MULTI-ROTATIONAL BEARINGS

439.01 DESCRIPTION

High-Load Multi-Rotational (HLMR) bearings shall be defined as bearings that consist of an element that allows rotation about any horizontal axis, and may in addition have sliding surfaces to accommodate translation. Translation may be constrained to a specified direction by guidance mechanisms. Bearings may be furnished by any of the Qualified Manufacturers. However, only one type of bearing from one Qualified Manufacturer (Manufacturer) shall be used on a structure.

This work shall consist of the design, furnishing, and fabrication of HLMR bearings, masonry plates, sole plates, anchor bolts, hardware, and bearing pads as shown on the Plans, described herein, recommended by the Manufacturer, or otherwise required to furnish completely installed and functioning HLMR bearings.

Special attention shall be given to placement of shop drawing layout of anchor bolts so that they clear existing reinforcing bars in the piers and also clear above girder flanges, diagonal bracing, diaphragm /floorbeam elements, or other superstructure features which may restrict anchor bolt drilling equipment headroom.

Installation of the bearings shall be the responsibility of the Contractor, in accordance with the Manufacturer's recommendations. Bearings shall be designed based on the loads and movements as described on the Plans. All designs for all elements shall conform to the latest editions (with interims) of the AASHTO-LRFD Bridge Design Specifications, the NJTA Design Manual and these Specifications.

Where applicable, this work shall also include the bearing seat preparation including existing anchor bolt removals, as indicated on the Plans or as otherwise required to install the new HLMR bearings.

This work shall also include on-site supervision and technical support furnished by the Manufacturer to assist the Contractor with the installation of the HLMR bearings.

Materials, testing, and fabrication /construction operations not specifically denoted on the Plans and in these Specifications shall be in accordance with the current AASHTO LRFD Bridge Construction Specifications.

439.02 MATERIALS

Steel used for the fabrication of bearing assemblies shall conform to ASTM A709, Gr. 36, Gr. 50, or Gr. 50W, or an approved equivalent, except for steel that is used for guidance or shear restriction mechanisms. The guidance and shear restriction mechanisms shall be in accordance with the Manufacturer's specifications as approved by the Engineer.

Materials not otherwise specified in this Section shall conform to the following Subsections:

Bolts and Bolting Materials.....909.02
Preformed Fabric Reinforced Elastomeric Bearing Pads ...923.02(C)
Anchor Bolt Epoxy Systems.....923.22(B)

439.03 QUALIFIED MANUFACTURERS

Where High-Load Multi-Rotational bearings are noted on the Plans for use, approved products from any Qualified Manufacturer may be provided. The following Manufacturers are qualified for use:

(1) **R.J. Watson, Inc.**
11035 Walden Ave.
Buffalo, NY 14004
Telephone: 716-901-7020
Fax: 716-901-7015

(2) **The D.S. Brown Company**

300 East Cherry Street
North Baltimore, OH 54872
Telephone: 419-257-3561
Fax: 419-257-2200

(3) AMSCOT Structural Products Corp.
241 East Blackwell Street
Dover, NJ 07801
Telephone: 973-989-8800
Fax: 973-989-5651

(4) Earthquake Protection Systems
451 Azuar Drive; Building 759
Mare Island, Vallejo, CA 94592
Telephone: 707-644-5993
Fax: 707-644-5995

439.04 WORKING DRAWINGS

Working drawings, including design calculations, shall be furnished to the Engineer in accordance with Subsection 104.08. The following information shall be included:

(1) The total quantity of each kind of bearing required (fixed, guided expansion, or non-guided expansion), grouped first according to load range and then by design capacity.
(2) Plan view and section elevation including all dimensions required for fabrication.
(3) Details of all components and sections showing all materials incorporated into the bearing.
(4) All ASTM, AASHTO, and other applicable material designations.
(5) The maximum design coefficient of friction for all sliding surfaces.
(6) Details of any welding process used in the bearing manufacture that does not conform to the approved processes of the current ANSI/AASHTO/AWS D1.5 Bridge Welding Code or the ANSI/AWS D1.6 Structural Welding Code – Stainless Steel.
(7) Vertical, horizontal, rotation, movement, and load capacities.
(8) Paint or coating requirements, as required.
(9) Installation scheme.
(10) Complete design calculations verifying conformance with the provisions of this Section.
(11) Anchorage details.
(12) Bearing pre-set details.
(13) Location of the fabrication plant.
(14) The Manufacturer's name and the name of its representative responsible for coordinating production, sampling and testing, and field supervision of bearing installation(s).
(15) The Manufacturer's certification package, according to Subsection 105.04, that shall contain the following:
    a. Material test reports for all steels used except AISI C1018 and C1020 for which a mill conformance certificate is acceptable.

b. Certificate of Compliance for all non-ferrous metals.
c. Material test reports for any elastomeric components.
d. Certificate of Compliance for PTFE and any adhesive used.
e. A Certificate of Compliance for the bearings, executed by an officer of the Manufacturer.
f. Certificate of Compliance for any dowels or bolts supplied.
g. Test reports for the performance tests.

(16) Completed as-built bearing table.

The design calculations and working drawings shall be signed and sealed by a Professional Engineer licensed in the State of New Jersey. The working drawings must be approved by the Engineer before fabrication of the bearings begins. Such approval shall not relieve the Contractor of any responsibility under the contract for the successful completion of work.

439.05 FABRICATION OF HLMR BEARING ASSEMBLIES

(A) FABRICATION

Section 18 – Bearings of the AASHTO LRFD Bridge Construction Specifications shall be followed for the fabrication of HLMR bearing assemblies. For pot type bearings, the provisions of AASHTO Specification M-251, Table X1 shall be followed for elastomer material fabrication and testing where the Shore A Durometer hardness shall be 50+/10 points and samples for compression set tests shall be prepared using a Type 2 die.

(B) COATING OF STEEL SURFACES

All surfaces, except those defined below shall be coated. The surfaces to be coated shall be shown on the working drawings. Coatings shall not impair the clarity of the bearing identification markings. All flame cut edges of the bearing plates shall be ground to reduce hardness and facilitate blast cleaning. All corners of the sole plate shall be rounded to a 1/16 inch radius. All exposed plain steel surfaces shall be blast cleaned to a near white finish. For all bearings, the pot cavity and all sliding surfaces shall not be coated.

(1) Bearings for Steel Superstructures:
Bearings shall be painted in accordance with Specification Section 411. Quality assurance inspection of coatings will be in accordance with Specification Section 411.

(2) Bearings for Concrete Superstructures:
Bearings shall either be galvanized in accordance with ASTM A-123 or ASTM A-153, as appropriate, or zinc metalized in accordance with AWS C2.2 to a finished coating minimum thickness of 10 mil. Quality assurance inspection will be performed by using magnetic thickness gauges.

(C) TESTING

Testing shall be performed in accordance with the LRFD Bridge Construction Specifications prior to installation of the bearings, and in the presence of the Engineer. The following provisions shall also apply:

(1) The Long Term Deterioration Testing:

a. Bearing Design Configurations- Testing shall be conducted on two full size bearings placed back-to-back. Bearing design configurations which comply with these provisions based on prior testing will be considered as prequalified for use without the need for further long term deterioration testing.
b. Bearing Materials – Testing shall be conducted on samples of materials used in the fabrication of each lot of 25 or less bearings.

(D) PACKING AND SHIPPING

(1) Bearings shall be securely banded together, as units, by the Manufacturer. They shall be shipped to the project site and stored without relative movement of the bearing parts or disassembly at any time. The bearings shall be wrapped in moisture resistant and dust resistant material to protect them against shipping, weather, job site conditions, and all other normal hazards.
(2) Each bearing shall be marked in a permanent fashion that will be visible after application of any paint coatings. The marking shall consist of the letters "N.J.T.A.", the location, orientation, order number, lot number, bearing identification number, bridge number, and month and year of manufacture. Unless otherwise specified in the Contract Documents, the marking shall be on a face which is visible after erection of the bridge.
(3) The bearings shall be inspected within one week after arriving on the project. They shall not be disassembled unless the Manufacturer's representative is present. Following the inspection, they shall be re-wrapped and kept clean until installation.
(4) The services of an on-site technical representative, to assist and provide guidance prior to the initial installation of the bearing assembly, shall be provided by the Manufacturer.
(5) When installed, bearings shall be clean and free of all foreign substances.
(6) The sole and top plates of the bearings shall not be removed for separate attachment to the structure except under the direct supervision of the Manufacturer.
(7) With each shipment, a copy of the materials, fabrication and testing compliance certifications shall be enclosed. For all materials used, the Manufacturer shall supply certification data consisting of test reports on the bearing performance tests, for any forgings, castings, or hardened material, mill certificates for all other steels used, a certificate of compliance for the bearing as a whole, and for all anchor bolts, dowels or other accessories, as required.
(8) The Manufacturer shall supply a separate sheet showing the materials, critical dimensions, and clearances for each bearing.

439.06 MEASUREMENT

High-Load Multi-Rotational (HLMR) bearings of the various sizes and types will be measured by the number of each type and size completely installed and fully functional units accepted.

HLMR bearings destroyed or consumed for testing purposes will not be measured for payment

HLMR bearings set on a common masonry plate shall be measured as two individual

HLMR bearings.

439.07 PAYMENT

Payment will be made under:

PAY ITEM	*PAY UNIT*
HLMR Bearing, XXX Kips – XXX Kips	Each

Payment for HLMR bearings shall include all work associated with design, fabrication, delivery, and construction support required to install the bearings and associated hardware. No separate payment will be made for bedding material, anchor bolts, sole plate, masonry plate, coatings, or field welds required to install the bearings.

No Separate payment will be made for costs required to provide on-site construction support to the Contractor.

No separate payment will be made for additional bearings or bearing materials furnished or otherwise consumed for testing purposes. The cost for these bearings or bearing materials shall be considered as incidental to the HLMR Bearing pay item.

No separate payment will be made for installation including the jacking or supporting of new or replacement stringers and girders. These costs shall be considered as incidental to the HLMR Bearing pay item. Where HLMR bearings are installed under existing stringers or girders to remain, payment shall be made separately under the structural jacking pay item.

No separate payment will be made where bracing or jacking of HLMR Bearings may be required to set them to final thermal deformations. These costs shall be considered as incidental to the HLMR Bearing pay item.

No separate payment will be made for coatings or repair of damaged coatings. The costs of coatings or repair of damaged coatings shall be considered as incidental to the HLMR Bearing pay item.

SECTION 923 - MISCELLANEOUS

Note: *Highlighted, italicized text* indicates REVISIONS to the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

923.06 DAMPPROOFING AND WATERPROOFING

The following Paragraph (H) is added:

(H) Waterproofing Systems for Substructures

Substructure Waterproofing shall conform to the requirements of (E) Epoxy Resin Waterproofing.

Substructure Membrane Waterproofing shall consist of a primer and the membrane. The membrane system must originate from one manufacturer to insure compatibility. The membrane system shall be Eliminator by Stirling Lloyd Products, Inc., *Newington, CT* ~~*North Haven*~~, or "Bridge Deck Membrane" by Bridge Preservation, LLC, Kansas City, KS ~~*913-321-9006*~~ *913-321-9000* as distributed by R.J. Watson, Inc., ~~*Amherst*~~ *Buffalo*, NY ~~*716-691-3301*~~ *716-901-7020*, or an approved equal. The membrane shall conform to the following:

NOTE TO REVIEWER: The following language is ADDED to the version of the NJTA 2004 Standard Supplementary Specifications which existed prior to the issuance of this DCA.

923.22 EPOXY RESIN SYSTEM

Delete this Subsection in its entirety and replace it with the following:

(A) EPOXY RESIN FOR INJECTION

Epoxy resin system for injection material to fill structural voids and cracks shall be a two component, 100% solids, moisture insensitive high modulus high strength epoxy resin adhesive such as:

Sikadur 35 Hi-Mod LV, Sika corp. 800.933.7452
Duralcrete , Euclid Chemical Co., 800.862.2667
Thermal-Chem Injection Resin, Product No. 2, Thermal-Chem, Inc. 800.635.3773
SCB Concresive 1380 BASF Corp. 800.433.9517
CI-060 Crack Injection System, Hilti Inc. 800.879.8000

The pressure injected epoxy shall be capable of penetrating the cracks and voids to their full depth and bond to surfaces of cracked concrete and/or structural steel.

(B) EPOXY/RESIN FOR ANCHOR BOLTS IN NOMINAL HOLES

Epoxy resin system for injection material to install anchor bolts in non-tension

applications in drilled holes of a nominal diameter as recommended by the epoxy or resin manufacturer shall be:

Sikadur 32 Hi-Mod, Sika Corp. 800.933.7452
Concresive 1090 BASF Corp. 800.433.9517
HIT-RE 500 Epoxy Adhesive, Hilti Inc. 800.879.8000
Keligrout, Keligrout 101P, Kelken Construction Systems 732.416.6730
PE1000+, Powers Fasteners, Inc. 914.235.6300

(C) EPOXY/RESIN/GROUT FOR ANCHOR BOLTS IN OVERSIZE HOLES

Epoxy resin system for injection material to install bearing anchor bolts in non-tension applications in drilled or preformed holes of up to 3" in diameter shall be:

Sikagrout 328, Sika Corp. 800.933.7452
Masterflow 648CP Plus BASF Corp. 800.433.9517
Epoxy Grout, Hilti Inc. 800.879.8000
Keligrit, Kelken Construction Systems 732.416.6730
Pure 50+, Powers Fasteners, Inc. 914.235.6300