



Florida Department of Transportation

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GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

December 19, 2011

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section **932**
Proposed Specification: **9320103 Nonmetallic Accessory Materials for Concrete Pavement and Concrete Structures.**

Dear Ms. Gourdine:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

These changes were proposed by Paul Vinik of the State Materials Office to revise the language relating to bearing pads to comply with DCE Memo 20-09, to require testing in accordance with new FM 5-598, and for formatting.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4280.

Sincerely,

Signature on file

Rudy Powell, Jr., P.E.
State Specifications Engineer

RP/dt

Attachment

cc: Calvin Johnson, Chief Civil Litigation
Florida Transportation Builders' Assoc.
State Construction Engineer

**NONMETALLIC ACCESSORY MATERIALS FOR CONCRETE PAVEMENT
AND CONCRETE STRUCTURES.**

(REV ~~10-12-11~~ ~~12-21-19~~ 11)

SUBARTICLE 932-1.3.2 (of the Supplemental Specifications) is deleted and the following substituted:

932-1.3.2 Physical Requirements:

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
Flow	ASTM D 5893	No Flow			
Slump (maximum)	ASTM D 2202	0.3 inches			
Extrusion rate (minimum)	ASTM C 1183, Procedure A	20 ml/min	20 ml/min	20 ml/min	20 ml/min
Tack-free time at 77 ± 3°F and 45 to 55% Relative Humidity	ASTM C 679	90 minutes maximum	180 minutes, maximum	60 minutes, maximum	30 – 60 minutes
Specific gravity	ASTM D 792, Method A	1.1 to 1.515	1.10 to 1.40	1.26 to 1.34	1.26 to 1.34
Durometer hardness, Shore A (Cured seven days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 2240	10-25			
Durometer hardness, Shore 00 (Cured 21 days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 2240		40-80	20-80	

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
Tensile stress (maximum) at 150% elongation	ASTM D 412 (Die C)	45 psi	40 psi	15 psi	
Elongation (Cured seven days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 412 (Die C)	800% minimum			600% minimum
Elongation (Cured 21 days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 412 (Die C)		800% minimum	1400% minimum	
Ozone and Ultraviolet Resistance	ASTM C 793	No chalking, cracking or bond loss after 5,000 hours, minimum.			
Bond to concrete mortar briquets (primed if required) (Cured seven days at 77 ± 3°F and 50 ± 5% Relative Humidity)	AASHTO T-132	50 psi minimum			
Bond to concrete briquets (Cured 21 days at 77 ± 3°F and 50 ± 5%	AASHTO T-132		40 psi minimum	35 psi minimum (includes bond to asphalt)	

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
Relative Humidity)					
Movement Capability	ASTM C 719	No adhesive or cohesive failure and adhesion, 10 cycles at -50 to +100%			No adhesive or cohesive failure and adhesion, 10 cycles at +100/-50 % (joints 2" wide)

Portland Cement Mortar: Briquettes shall be molded and cured 28 days minimum in accordance with AASHTO T-132. Cured briquettes shall be dried at 230° ~~±~~*plus or minus* 5°F, sawed in half and bonded together with a thin section of sealant. After cure of sealant, briquettes shall be tested in accordance with AASHTO T-132.

ARTICLE 932-2 (Pages 883 - 885) is deleted and the following substituted:

932-2 Structure Bearing Pads.

932-2.1 Ancillary Structures—~~Plain or Fiber Reinforced Bearing Pads:~~

~~932-2.1.1 General: Furnish either plain or fiber reinforced (resilient) elastomeric structure bearing pads as shown in the Contract Documents. The elastomer shall be either natural rubber or polychloroprene (neoprene) and meet the material requirements of AASHTO M-251, Appendix XI. Finished pads shall meet the fabrication and tolerance requirements of AASHTO M-251. Elastomeric bearings furnished under this specification shall adequately provide for the thermal expansion and contraction, rotation, camber changes, creep, and shrinkage of structural members. Elastomeric bearings as defined herein shall include plain pads (elastomer only) and laminated bearings with steel or fabric laminates. Bearings manufactured and tested under this specification shall have a plan area less than 1000 in² square inches and be less than 8 inches in height. Flash tolerance, finish and appearance of bearings shall meet the requirements of the latest edition of the Rubber Handbook as published by the Rubber Manufacturer's Association, Inc. RMA-F3-T.063 for molded bearings, and RMA-F2 for extruded bearings.~~

932-2.2 Materials: Use elastomer that is ~~g~~*Grade- 2 (or higher, -as defined in the AASHTO LRFD Bridge Design Specifications)*, crystallization resistant, 100% virgin polychloroprene (neoprene). ~~All~~*Use only new materials; shall be new with no reclaimed material incorporated* is not allowed in the finished product. No wax, anti-ozonants, or other foreign material may accumulate or be applied to the surfaces of the bearing. The steel layers of the laminated pads shall utilize 10-gauge steel sheet (0.1345- inches thick). The steel utilized for the steel layers and for external load bearing plates (if specified) shall meet the requirements of ASTM- A-36 or ASTM- A-1011 ~~g~~*Grade -36*

~~†Type- I~~ steel sheet. External load bearing plates shall be finished or machined flat to within 0.01- inches. The bottom surfaces of external load plates (masonry plates) designed to rest on bearing pads shall not exceed an out of flatness value of 0.0625 inches. External load bearing plates shall be protected from rust until all exposed surfaces can be field painted. Any rust inhibitor shall be removed from all surfaces prior to welding.

932-2.3 Sampling: ~~For the purpose of this section, a~~ A sampling LOT shall consist of a maximum of 100- bearing pads of a single type of bearing, of the same design, materials, and thickness, delivered to the project site.

932-2.3.1 Ancillary Structure Pads: Sampling is not required and acceptance is by certification.

932-2.3.2 Bridge Structure Pads: A minimum of two bridge bearing pads per LOT will be selected by the Engineer at the project site- ~~One pad will be for testing and the other retained~~ one for confirmation in the event of a failing test result. Samples shall consist of complete pads as detailed in the ~~project p~~Plans. Furnish additional complete bridge bearing pads to replace those selected for testing. ~~Have the b~~Bridge bearing pads shall be available for sampling a minimum of three weeks prior to their installation. ~~Have†~~The sample bridge bearing pads shall be tested by an independent laboratory approved by the Department.

932-2.4 Dimensional Tolerances: Fabricate elastomeric bearings within the dimensional tolerances specified below or as designated in the Plans. If any of the dimensions are outside the limits specified, the bearing pad shall be rejected.

Measurement		Tolerance (inches)
1. Overall vertical dimensions	Design thickness ≤ 1.25 inches	-0, +0.125
	Design thickness > 1.25 inches	-0, +0.25
2. Overall horizontal dimensions	measurements ≤ 36 inches	-0, +0.25
	measurements > 36 inches	-0, +0.50
3. Thickness of individual layers of elastomer (laminated bearings only) at any point within the bearing		± 0.125
4. Variation from a plane parallel to the theoretical surface (as determined by measurements at the edge of the bearings)	Top (slope relative to bottom)	≤ 0.005 radians
	Sides	0.25
5. Position of exposed connection members		± 0.125
6. Edge cover of embedded laminates of connection members		-0, +0.125
7. Position and size of holes, slots, or inserts		± 0.125

Note: If the variation in thickness of individual layers of elastomer is greater than that allowed in the tolerance for Measurement (3) (± 0.125 in.), use the following equation to determine compliance: $7.5\theta + v/hr < 0.35$ provided $\theta \leq 0.02$ where θ (radians) and v (in) are absolute values of steel laminate rotation and vertical displacement. If the specified layer elastomeric layer thickness is h , the bearing length is L , and H_1 and H_2 are the measured maximum and minimum thicknesses at the edges of the layer, then $v = |h_r - 1/2(H_1 + H_2)|$ and $\theta = |(H_1 - H_2)/2L|$ for interior layers and $\theta = |(H_1 - H_2)/L|$ for top and bottom layers provided that the minimum elastomer layer thickness $H_2 \geq 0.2$ in.

932-2.5 Ancillary Structures – Plain, Fiber Reinforced, or Fabric Laminated Bearing Pads:

932-2.5.1-2 Plain Pads: Plain pads shall be either molded, extruded, or vulcanized in large sheets and cut to size. Cutting shall not heat the material and shall produce a smooth finish *conforming to ANSI B46.1, 6.3 μm (0.248- mils).* *Plain pads shall be molded or extruded to the finished thickness. Plying pads of lesser thickness together shall not be permitted. External load plates, when used, shall be protected from rusting and shall be hot bonded by vulcanization during the primary molding process.* The finished pads shall withstand a *minimum* uniform ~~minimum ultimate~~ compression ~~ive~~ load of ~~1750 lb/in²~~ *1200 psi when tested in accordance with FSTM 5--598.*

932-2.15.3-2 Fiber Reinforced or Fabric Laminated Pads: Fiber reinforced pads shall be ~~preformed and~~ constructed with ~~either~~ a homogeneous blend of elastomer and random-oriented high strength synthetic fiber cords ~~or multiple layers of fabric and elastomer.~~ *Bearing pads may be molded and vulcanized in large sheets and cut to size. Cutting shall be performed so as to prevent heating and must produce a smooth finish conforming to ANSI B46.1.*

Fabric laminated bearings shall be constructed of multiple layers of fabric and elastomer. The fabric shall be either fiberglass meeting the material requirements of AASHTO M-251, or composed of 8 ounce cotton duck with and the pads manufactured in accordance with Military Specification MIL-C-882. Ensure the fabric is free of folds or ripples and parallel to the top and bottom surfaces. Unless otherwise specified in the Contract Documents, holes will not be permitted in the fabric.

Fiber reinforced and fabric pads shall withstand a minimum uniform minimum ultimate compression ~~ive~~ load of 2,4,000 lb/in² psi without detrimental reduction in thickness or extrusion when tested in accordance with FSTM 5--598.

932-2.5.3 Certification: *The Contractor shall provide the Engineer a certification to the Engineer conforming to the requirements of Section 6 stating that the ancillary structure pads meet the requirements of this Section and the physical and heat resistance properties of section 6 of FSTM 5--598.*

932-2.2-6 Bridge Structures - Elastomeric Bearing Pads:

~~932-2.2.1 General:~~ *Furnish elastomeric bearing pads in accordance with the requirements of the "AASHTO LRFD Bridge Construction Specifications" Section 18.2, Elastomeric Bearings. Section 18.2 of the above mentioned specification establishes the requirements for plain, fabric reinforced and steel laminated elastomeric bearing pads for bridge structures. When steel reinforced bearings are specified, all Bearings with steel laminates shall be cast as a unit in a mold and bonded and vulcanized under heat and pressure. Bearings with steel laminates which are designed to act as a single unit with a given shape factor must be manufactured as a single unit. The mold shall have a standard shop practice shop mold finish. The internal steel laminates shall be blast cleaned to a cleanliness and that conforms to SSPC-SP6 at the time of bonding. Plates shall be free of sharp edges and burrs and shall have a minimum edge cover of 0.25 inches. External load plates (sole plates) shall be hot bonded to the bearing during vulcanization.*

Edges of the embedded steel laminates, including at the laminate restraining devices and around holes and slots shall be covered with not less than

3/16 inch of elastomer or the minimum edge cover specified on the pPlans. All exposed laminations or imperfections that result in less than the specified elastomer cover of any surface of the steel laminations shall be repaired by the manufacturer at the point of manufacture. The repair shall consist of sealing the imperfections flush on the finished pads with a bonded vulcanized patch material compatible with the elastomeric bearing pad. Repairs employing caulking type material or repairing the bearings in the field will not be permitted.

~~932-2.2.2 Materials: Use only grade 2 (or higher) 100 percent virgin polychloroprene (neoprene) material. No wax antiozonants or other foreign material may accumulate or be applied to the surfaces of the bearing. Use ASTM A-36 or ASTM A-1011 Grade 36 Type I steel for the steel reinforcement in steel laminated elastomeric bearings. The minimum thickness for the steel reinforcement shall be +/- 0.1345 in. or ten gage material.~~

~~932-2.26.31 Testing: Comply with the testing requirements established in the "AASHTO LRFD Bridge Construction Specifications" Section 18.2. Unless otherwise shown in the Contract Documents, the rated service load for load testing shall be 1,600 pounds times the pad area in square inches. When the elastomer material is specified by Shore "A" hardness (durometer), comply with the testing and acceptance criteria in AASHTO M-251, Appendix X1 and X2. *Test bridge bearing pads in accordance with FSTM- 5-598. Laminated bridge bearings must meet a minimum compressive load of 2,400 psi and non-laminated (plain) pads must meet a minimum compressive load of 1,200 psi. If any properties are identified as non compliant with the criteria specified, the bearing shall be rejected and the confirmation sample tested. If the confirmation sample test results are also non compliant, the LOT shall be rejected.*~~

~~932-2.2.4 Fabrication Tolerances: Fabricate elastomeric bearings to be within the tolerances stated in the "AASHTO LRFD Bridge Construction Specifications" Section 18.1.4, Manufacture or Fabrication.~~

~~932-2.26.52 Marking: Each elastomeric bearing pad shall be permanently marked. The marking shall consist of the order number, LOT number, pad identification number, elastomer type, and shear modulus or hardness (when shear modulus is not specified). Where possible, unless otherwise specified in the plans, the marking shall be on a face of the bridge bearing pad which is that will be visible after erection of the structure.~~

~~932-2.26.6-3 Mill Analysis Reports *Certified Test Results*: For plain, fiber reinforced and elastomeric bridge bearing pads, provide six a certified copies of the manufacturer's independent laboratory's complete mill analysis test results, including actual results of for all tests specified in this Subarticle, properly identified by LOT and project number, to the Engineer. The mill analysis reports shall be for material representative of that furnished.~~

~~The manufacturer shall certify that each pad satisfies the design specification.~~

~~932-2.36.4 Certification: The Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 from the manufacturer, stating confirming that the bearing pads, (plain, fiber reinforced or elastomeric) meets the requirements of this Section. *The certification shall designate the bearings in each LOT and state that each of the bearings in the LOT was manufactured in a reasonably*~~

continuous manner from the same batch of elastomer and cured under the same conditions.

**NONMETALLIC ACCESSORY MATERIALS FOR CONCRETE PAVEMENT
AND CONCRETE STRUCTURES.**

(REV 12-19-11)

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Tack-free time at 77 ± 3°F and 45 to 55% Relative Humidity	ASTM C 679	90 minutes maximum	180 minutes, maximum	60 minutes, maximum	30 – 60 minutes
Specific gravity	ASTM D 792, Method A	1.1 to 1.515	1.10 to 1.40	1.26 to 1.34	1.26 to 1.34
Durometer hardness, Shore A (Cured seven days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 2240	10-25			
Durometer hardness, Shore 00 (Cured 21 days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 2240		40-80	20-80	

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
Tensile stress (maximum) at 150% elongation	ASTM D 412 (Die C)	45 psi	40 psi	15 psi	
Elongation (Cured seven days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 412 (Die C)	800% minimum			600% minimum
Elongation (Cured 21 days at 77 ± 3°F and 50 ± 5% Relative Humidity)	ASTM D 412 (Die C)		800% minimum	1400% minimum	
Ozone and Ultraviolet Resistance	ASTM C 793	No chalking, cracking or bond loss after 5,000 hours, minimum.			
Bond to concrete mortar briquets (primed if required) (Cured seven days at 77 ± 3°F and 50 ± 5% Relative Humidity)	AASHTO T-132	50 psi minimum			
Bond to concrete briquets (Cured 21 days at 77 ± 3°F and 50 ± 5%)	AASHTO T-132		40 psi minimum	35 psi minimum (includes bond to asphalt)	

Silicone Sealant Type	Test Method	Type A	Type B	Type C	Type D
Relative Humidity)					
Movement Capability	ASTM C 719	No adhesive or cohesive failure and adhesion, 10 cycles at -50 to +100%			No adhesive or cohesive failure and adhesion, 10 cycles at +100/-50 % (joints 2" wide)

Portland Cement Mortar: Briquettes shall be molded and cured 28 days minimum in accordance with AASHTO T-132. Cured briquettes shall be dried at 230° plus or minus 5°F, sawed in half and bonded together with a thin section of sealant. After cure of sealant, briquettes shall be tested in accordance with AASHTO T-132.

ARTICLE 932-2 (Pages 883 - 885) is deleted and the following substituted:

932-2 Structure Bearing Pads.

932-2.1 General: Furnish elastomeric structure bearing pads as shown in the Contract Documents. Elastomeric bearings as defined herein shall include plain pads (elastomer only) and laminated bearings with steel or fabric laminates. Flash tolerance, finish and appearance of bearings shall meet the requirements of the latest edition of the Rubber Handbook as published by the Rubber Manufacturer's Association, Inc. RMA-F3-T.063 for molded bearings, and RMA-F2 for extruded bearings.

932-2.2 Materials: Use elastomer that is Grade 2 or higher, as defined in the AASHTO LRFD Bridge Design Specifications, crystallization resistant, 100% virgin polychloroprene (neoprene). Use only new materials; reclaimed material is not allowed in the finished product. No wax, anti-ozonants, or other foreign material may accumulate or be applied to the surfaces of the bearing. The steel layers of the laminated pads shall utilize 10 gauge steel sheet (0.1345 inches thick). The steel utilized for the steel layers and for external load bearing plates (if specified) shall meet the requirements of ASTM A-36 or ASTM A-1011 Grade 36 Type I steel sheet. External load bearing plates shall be finished or machined flat to within 0.01 inches. The bottom surfaces of external load plates (masonry plates) designed to rest on bearing pads shall not exceed an out of flatness value of 0.0625 inches. External load bearing plates shall be protected from rust until all exposed surfaces can be field painted. Any rust inhibitor shall be removed from all surfaces prior to welding.

932-2.3 Sampling: A sampling LOT shall consist of a maximum of 100 bearing pads of a single type of bearing, of the same design, materials, and thickness, delivered to the project site.

932-2.3.1 Ancillary Structure Pads: Sampling is not required and acceptance is by certification.

932-2.3.2 Bridge Structure Pads: A minimum of two bridge bearing pads per LOT will be selected by the Engineer at the project site- one for testing and one for confirmation in the event of a failing test result. Samples shall consist of complete pads as detailed in the Plans. Furnish additional complete bridge bearing pads to replace those selected for testing. Bridge bearing pads shall be available for sampling a minimum of three weeks prior to their installation. The sample bridge bearing pads shall be tested by an independent laboratory approved by the Department.

932-2.4 Dimensional Tolerances: Fabricate elastomeric bearings within the dimensional tolerances specified below or as designated in the Plans. If any of the dimensions are outside the limits specified, the bearing pad shall be rejected.

Measurement		Tolerance (inches)
1. Overall vertical dimensions	Design thickness ≤ 1.25 inches	-0, +0.125
	Design thickness > 1.25 inches	-0, +0.25
2. Overall horizontal dimensions	measurements ≤ 36 inches	-0, +0.25
	measurements > 36 inches	-0, +0.50
3. Thickness of individual layers of elastomer (laminated bearings only) at any point within the bearing		± 0.125
4. Variation from a plane parallel to the theoretical surface (as determined by measurements at the edge of the bearings)	Top (slope relative to bottom)	≤ 0.005 radians
	Sides	0.25
5. Position of exposed connection members		± 0.125
6. Edge cover of embedded laminates of connection members		-0, +0.125
7. Position and size of holes, slots, or inserts		± 0.125
Note: If the variation in thickness of individual layers of elastomer is greater than that allowed in the tolerance for Measurement (3) (± 0.125 in.), use the following equation to determine compliance: $7.5\theta + v/hr < 0.35$ provided $\theta \leq 0.02$ where θ (radians) and v (in) are absolute values of steel laminate rotation and vertical displacement. If the specified layer elastomeric layer thickness is h_r , the bearing length is L , and H_1 and H_2 are the measured maximum and minimum thicknesses at the edges of the layer, then $v = h_r - 1/2(H_1 + H_2) $ and $\theta = (H_1 - H_2)/2L $ for interior layers and $\theta = (H_1 - H_2)/L $ for top and bottom layers provided that the minimum elastomer layer thickness $H_2 \geq 0.2$ in.		

932-2.5 Ancillary Structures – Plain, Fiber Reinforced, or Fabric Laminated Bearing Pads:

932-2.5.1 Plain Pads: Plain pads shall be either molded, extruded, or vulcanized in large sheets and cut to size. Cutting shall not heat the material and shall produce a smooth finish conforming to ANSI B46.1, $6.3 \mu\text{m}$ (0.248 mils). Plain pads shall be molded or extruded to the finished thickness. Plying pads of lesser thickness together shall not be permitted. External load plates, when used, shall be protected from rusting and shall be hot bonded by vulcanization during the primary molding process. The

finished pads shall withstand a minimum uniform compressive load of 1200 psi when tested in accordance with FM 5-598.

932-2.5.2 Fiber Reinforced or Fabric Laminated Pads: Fiber reinforced pads shall be constructed with a homogeneous blend of elastomer and random-oriented high strength synthetic fiber cords. Bearing pads may be molded and vulcanized in large sheets and cut to size. Cutting shall be performed so as to prevent heating and must produce a smooth finish conforming to ANSI B46.1.

Fabric laminated bearings shall be constructed of multiple layers of fabric and elastomer. The fabric shall be composed of 8 ounce cotton duck and the pads manufactured in accordance with Military Specification MIL-C-882. Ensure the fabric is free of folds or ripples and parallel to the top and bottom surfaces.

Fiber reinforced and fabric pads shall withstand a minimum uniform compressive load of 2,400psi when tested in accordance with FM 5-598.

932-2.5.3 Certification: The Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 stating that the ancillary structure pads meet the requirements of this Section and the physical and heat resistance properties of section 6 of FM 5-598.

932-2.6 Bridge Structures - Elastomeric Bearing Pads: Bearings with steel laminates shall be cast as a unit in a mold and bonded and vulcanized under heat and pressure. Bearings with steel laminates which are designed to act as a single unit with a given shape factor must be manufactured as a single unit. The mold shall have a standard shop practice mold finish. The internal steel laminates shall be blast cleaned to a cleanliness that conforms to SSPC-SP6 at the time of bonding. Plates shall be free of sharp edges and burrs and shall have a minimum edge cover of 0.25 inches. External load plates (sole plates) shall be hot bonded to the bearing during vulcanization.

Edges of the embedded steel laminates, including the laminate restraining devices and around holes and slots shall be covered with not less than 3/16 inch of elastomer or the minimum edge cover specified on the Plans. All exposed laminations or imperfections that result in less than the specified elastomer cover of any surface of the steel laminations shall be repaired by the manufacturer at the point of manufacture. The repair shall consist of sealing the imperfections flush on the finished pads with a bonded vulcanized patch material compatible with the elastomeric bearing pad. Repairs employing caulking type material or repairing the bearings in the field will not be permitted.

932-2.6.1 Testing: Test bridge bearing pads in accordance with FM 5-598. Laminated bridge bearings must meet a minimum compressive load of 2,400 psi and non-laminated (plain) pads must meet a minimum compressive load of 1,200 psi. If any properties are identified as non compliant with the criteria specified, the bearing shall be rejected and the confirmation sample tested. If the confirmation sample test results are also non compliant, the LOT shall be rejected.

932-2.6.2 Marking: Each elastomeric bearing pad shall be permanently marked. The marking shall consist of the order number, LOT number, pad identification number, elastomer type, and shear modulus or hardness (when shear modulus is not specified). Where possible, the marking shall be on a face of the bridge bearing pad that will be visible after erection of the structure.

932-2.6.3 Certified Test Results: For bridge bearing pads, provide a certified copy of the independent laboratory's complete test results for all tests specified, properly identified by LOT and project number, to the Engineer.

932-2.6.4 Certification: The Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 stating that the bearing pads, (plain, fiber reinforced or elastomeric) meet the requirements of this Section. The certification shall designate the bearings in each LOT and state that each of the bearings in the LOT was manufactured in a reasonably continuous manner from the same batch of elastomer and cured under the same conditions.