
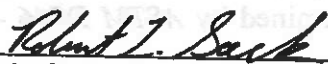


To: <p style="text-align: center;">SUPERSEDED BY <u>EB 06-057</u> EFFECTIVE <u>5/3/07</u></p>		<p style="text-align: center;"><i>New York State</i> <i>Department of</i> <i>Transportation</i> ENGINEERING INSTRUCTION</p>	<p style="text-align: center;">EI 04-030</p>
Title: Material Specification Sections; 716-10 Plain Elastomeric Bridge Bearings, 716-11 Steel Laminated Elastomeric Bridge Bearings and 716-12 Elastomeric Bridge Bearings With External Load Plates – REVISED SPECIFICATIONS			
Distribution: <input checked="" type="checkbox"/> Manufacturers (18) <input type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Local Govt. (31) <input checked="" type="checkbox"/> Consultants (34) <input checked="" type="checkbox"/> Agencies (32) <input checked="" type="checkbox"/> Contractors (39) <input type="checkbox"/> _____ ()		Approved:  R. L. Sack, Deputy Chief Engineer <u>19 Jul 04</u> Technical Services Date	

ADMINISTRATIVE INFORMATION:

- This EI is effective beginning with projects submitted for the letting of January 13, 2005.
- This issuance supersedes EI 03-005.
- The revised Standard Specification Sections will be incorporated into the next printing of the Standard Specifications.

PURPOSE: The purpose of this EI is to revise the Standard Specification Materials Sections 716-10 PLAIN ELASTOMERIC BRIDGE BEARINGS, 716-11 STEEL LAMINATED ELASTOMERIC BRIDGE BEARINGS and 716-12 ELASTOMERIC BRIDGE BEARINGS WITH EXTERNAL LOAD PLATES.

TECHNICAL INFORMATION:

- **Interim Guidance.** Designers should continue to design bearings in accordance with the *New York State Standard Specifications for Highway Bridges*.
- There is no change in the policy pertaining to the design and installation of Plain Elastomeric Bridge Bearings, Steel Laminated Elastomeric Bridge Bearings, and Elastomeric Bridge Bearings With External Load Plates.
- **Actions.** The Materials Bureau will update and revise Material Method 23 Quality Assurance Program for Plain, Steel Laminated, Fabric Laminated, and Sliding Elastomeric Bridge Bearings (MM23) to reflect changes in the material requirements. Plant inspectors will be advised of changes to the quality assurance program, pertaining to the revised MM23, by the Materials Bureau.
- **Changes.** Changes to Sections 716-10, 716-11, and 716-12 will require that manufacturers certify that the elastomer used in the manufacture of bridge bearings passes Grade 3 low-temperature brittleness requirements as determined by *ASTM D746 - Brittleness Temperature of Plastics and Elastomers by Impact Procedure B*.

IMPLEMENTATION:

- The Design Quality Assurance Bureau will insert the transmitted shelf note into proposals calling for contract items 565.1821, 565.19XX, or 565.20XX beginning with projects submitted for the letting of January 13, 2005.

TRANSMITTED MATERIALS: A shelf note including the revised specifications is attached to this

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issuance.

BACKGROUND: *New York State Standard Specification for Highway Bridges* requires that bridge bearings in New York State be designed for Temperature Zone 'C' and that the elastomer used in the manufacture of bearings pass Grade 3 low-temperature brittleness requirements. Current NYSDOT material specifications for bearings do not include this requirement.

There are five grades of elastomers cited in AASHTO for use in the manufacture of bearings. The Structures Division proposed including the brittleness requirement in the Standard Material Specifications as determined by *ASTM D746 - Brittleness Temperature of Plastics and Elastomers by Impact Procedure B*.

REFERENCES:

1. *New York State Standard Specifications for Highway Bridges.*
2. *Material Method 23 Quality Assurance Program for Plain, Steel Laminated, Fabric Laminated and Sliding Elastomeric Bridge Bearings.*
3. *NCHRP Repot 449 Elastomeric Bridge Bearings: Recommended Test Methods.*
4. *Standard Specification for Plain Laminated Elastomeric Bridge Bearings AASHTO Designation M-251-97 (2002).*
5. *ASTM D746 - Brittleness Temperature of Plastics and Elastomers by Impact.*

CONTACT: Direct questions regarding this EI to the General Engineering Section of the Materials Bureau at (518) 485-5429.

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Make the following changes to Volume 3 of the Standard Specifications of January 2, 2002:

delete Page 7-183, Line 33 to Page 7-191, Line 3. (§ 716-10 thru 716-12) and **Replace** with the following:

716-10 PLAIN ELASTOMERIC BRIDGE BEARINGS

SCOPE. This specification covers the material requirements for plain elastomeric bridge bearings. Bearings furnished under this specification shall be adequate for the specified design load, and provide for the thermal expansion and contraction, rotation, camber changes, creep, and shrinkage of structural members.

GENERAL. Plain elastomeric bridge bearings (Type EP bearings) are composed entirely of elastomeric material. They may be used for both fixed and expansion applications without changes in details. The bearings will accommodate longitudinal, transverse, and rotational movements.

Elastomeric bridge bearings shall be designed in accordance with New York State Standard Specifications for Highway Bridges.

MATERIAL REQUIREMENTS. All materials shall be new with no reclaimed material incorporated in the finished bearing. The elastomeric compound used in the construction of these bearings shall contain only virgin crystallization resistant polychloroprene (neoprene) or virgin natural polyisoprene (natural rubber) as the raw polymer. The resulting product shall be free of porous areas, weak sections, bubbles, foreign matter, or other defects affecting serviceability. The physical properties of the cured elastomeric compound shall meet the requirements of Table 716-10-1.

The manufacturer shall certify that the elastomeric compound passes Grade 3 Low - Temperature Brittleness as determined by ASTM D746 - Brittleness Temperature of Plastics and Elastomers by Impact Procedure B.

DRAWINGS. Shop drawings are not required for Type EP bearings.

FABRICATION. The finish of the mold used to produce these bearings shall conform to good machine shop practice. Each bearing shall be marked in indelible ink or flexible paint. The marking shall consist of the manufacturer's name and location. The marking shall be placed on at least one side or face that will be visible after erection and, if possible, on two sides or faces.

TABLE 716-10-1 PROPERTIES OF ELASTOMERIC MATERIAL			
	ASTM TEST METHOD	REQUIREMENTS	
		NEOPRENE	NATURAL RUBBER
PHYSICAL PROPERTIES:			
Tensile Strength, Min., (MPa)	D412	13.8	13.8
Ultimate Elongation, Min., (%)	D412	400	400

Notes:

1. Tolerances for samples cut from finished parts have already been applied to each of these requirements. No greater tolerances will be allowed.
2. For the purpose of determining conformance with these specifications, an observed or calculated value shall be rounded off to the nearest 0.10 MPa for tensile strength and to the nearest 10% for elongation.

The bearings shall be cast in a mold under pressure and heat to the specified thickness.

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They may be molded and vulcanized in large sheets and cut to size. Cutting shall not heat the material, and the finish produced shall be equal to a surface roughness average of $6.3 \mu\text{m}$ as defined by ANSI B46.1. A type EP bearing that has been cut from a larger piece of material and fabricated to the finished size by bonding or plying smaller pieces together will not be acceptable.

Bearing Tolerances. Finished elastomeric bearings shall conform to the design dimensions, with the tolerances listed in Table 716-10-2.

TABLE 716-10-2 BEARING TOLERANCES	
Dimension	Tolerance
Overall Vertical	-0, +3 mm
Overall Horizontal	-0, +6 mm
Position of Holes and Slots centerline	± 1.6 mm from centerline
Size of Holes, Slots and Internal Steel Plates	-0, +1.6 mm

PERFORMANCE CHARACTERISTICS

Compression Deflection. The compression deflection of each bearing shall not exceed 10.0% of the design effective rubber thickness at a compressive load equal to the actual design load.

The compression deflection shall be determined by loading the bearings to 3.4 MPa and 5.5 MPa. At each load a deflection reading will be taken and the readings used to calculate the slope between the two loads. The slope shall then be used to determine the deflection at the bearing's design load.

The bearing and ambient temperature shall be $23^\circ \pm 2^\circ\text{C}$ at the time of testing.

NOTE: For conformance to this specification an observed or calculated value shall be rounded off (ASTM E29) to the nearest 0.1% for compression deflection.

BASIS OF ACCEPTANCE. Acceptance of this material will be based upon the manufacturer's name appearing on the Department's Approved List for Elastomeric Bridge Bearings, and a manufacturer's certification stating conformance with these specifications.

716-11 STEEL LAMINATED ELASTOMERIC BRIDGE BEARINGS

SCOPE. This specification covers the material requirements for steel laminated elastomeric bridge bearings without external load plates. Bearings furnished under this specification shall be adequate for the specified design load, and provide for the thermal expansion and contraction, rotation, camber changes, creep, and shrinkage of structural members.

GENERAL. Steel laminated elastomeric bridge bearings (Type EL bearings) are composed of multiple layers of elastomeric material separated by steel plates. They may be used for both fixed and expansion applications without changes in details. The bearings will accommodate longitudinal, transverse, and rotational movements.

Elastomeric bridge bearings shall be designed in accordance with New York State Standard Specifications for Highway Bridges.

MATERIALS REQUIREMENTS. All materials shall be new with no reclaimed material incorporated in the finished bearing.

Elastomeric Material. The elastomeric compound used in the construction of these bearings shall

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contain only virgin crystallization resistant polychloroprene (neoprene) or virgin natural polyisoprene (natural rubber) as the raw polymer. The resulting product shall be free of porous areas, weak sections, bubbles, foreign matter, or other defects affecting serviceability. The physical properties of the cured elastomeric compound shall be determined by using samples taken from bearings and shall meet the requirements of Table 716-10-1.

The manufacturer shall certify that the elastomeric compound passes Grade 3 Low – Temperature Brittleness as determined by ASTM D746 – Brittleness Temperature of Plastics and Elastomers by Impact Procedure B.

Internal Steel Plates. Steel plates for internal laminates shall be rolled mild steel conforming to the requirements of ASTM A36M, ASTM 1008/A 1008/M or ASTM 1011/A 1011/M (Grade 33, 36 and 40).

DRAWINGS. Shop drawings are not required for Department approval unless a change in the details shown on the plans is proposed. When Department approved shop drawings are required, they shall be furnished in accordance with the Steel Construction Manual (SCM), Section 2, except that in place of two sets of Department approved drawings submitted to the designated Shop Inspection Agency, five sets of Department approved drawings shall be submitted to the Materials Bureau. The Contractor shall submit one copy of these drawings to the Engineer.

When the bearing details are identical to the plans, the Contractor shall be responsible for supplying shop drawings prepared by the Manufacturer. The Manufacturer shall certify that the bearings depicted on the drawings are in conformance with the contract documents. The Contractor shall submit one copy of the certified drawings to the Engineer and five copies of their certified drawings to the Materials Bureau. The Department's acceptance procedures will commence subsequent to receipt of these drawings. The Manufacturer shall note the following on all shop drawings:

- The Contract number, bridge identification number (BIN), feature carried/feature crossed, specification pay item no. and the type, size and quantity of bearings being produced.
- The design load (dead load plus live load) for each type and size bearing. If bearings of the same type and size are designed for differing load conditions the maximum design load shall be noted.
- The effective rubber thickness, typical laminate thickness, compressive area, shear area and shape factor.
- The Manufacturer's name, the location of the fabrication plant and the name and phone number of the Manufacturer's representative who will coordinate production, inspection, and sampling and testing with the Materials Bureau.
- The specification reference and grade of steel used.

FABRICATION. The finish of the mold used to produce these bearings shall conform to good machine shop practice. Each bearing shall be marked in indelible ink or flexible paint. The marking shall consist of the manufacturer's name, contract number, lot number, and individual bearing number. The marking shall be placed on at least one side or face that will be visible after erection and, if possible, on two sides or faces.

Type EL bearings shall be cast as a single unit in a mold and bonded and vulcanized under pressure and heat to the specified size and thickness. The internal steel plate(s) shall be commercially blast cleaned to a condition matching that of SSPC-Vis1, Pictorial Standards A SP6, B SP6 or C SP6, and cleaned of all oil or grease before bonding.

Bearing Tolerances. Finished elastomeric bearings shall conform to the design dimensions, with the tolerances listed in Table 716-11 and the following details:

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TABLE 716-11 BEARING TOLERANCES	
Dimension	Tolerance
Overall Vertical	-0, +3 mm
Overall Horizontal	-0, +6 mm
Position of Holes and Slots centerline	± 1.6 mm from centerline
Size of Holes, Slots and Internal Steel Plates	-0, +1.6 mm
Edge Cover over External Steel Plates ¹	3 mm min.
Bedding Surface (Top and Bottom) Over Internal Steel Plates	6 mm min.

NOTES:

1. No edge cover will be required over internal details that will not be exposed after erection (i.e.- vertical holes covered by bearing seats or flanges).
2. For 716-12, With external load plate(s) there shall be an effective rubber laminate between the load plate(s) and internal steel plate(s).

A. Internal Steel Plates. The internal steel plates shall be checked for parallelism by measuring the distance between each individual steel plate, and between the top or bottom edge of the bearing to the first adjacent steel plate. For rectangular bearings, take measurements for each plate along the vertical surface of the bearing, located 25 mm from the edge of the four alternate corners. For round bearings, measurements will be taken at four points located at 90° intervals around the perimeter. The smallest of the four measurements shall be recorded for each plate. The cumulative total of these measurements shall not be less than 75% of the design effective rubber thickness.

B. Elastomeric Laminae. The average thickness of individual layers of elastomer in steel laminated elastomeric bearings shall not vary more than ±20% of the design thickness and in no case exceed the design thickness by 3 mm. Average thickness will be calculated from measurements taken at four points, located at 25 mm from the edge of the four alternate corners for rectangular bearings and at 90° intervals around the perimeter for round bearings.

PERFORMANCE CHARACTERISTICS

Compression Deflection. The compression deflection of each bearing shall not exceed 10.0% of the design effective rubber thickness at a compressive load equal to the actual design load.

The compression deflection shall be determined by loading the bearings to 3.4 MPa and 5.5 MPa. At each load a deflection reading will be taken and the readings used to calculate a slope between the two loads. The slope shall then be used to determine the deflection at the bearing's design load.

The bearing and ambient temperature shall be 23° ± 2°C at the time of testing.

Adhesion. The adhesion of the elastomer to the internal plates shall be demonstrated by subjecting the bearing to a compressive load equal to 150% of the actual design load. Upon visual examination, the bearing shall be free of visual defects.

The bearing and ambient temperature shall be 23° ± 2° C at the time of testing.

NOTE: For conformance to this specification an observed or calculated value shall be rounded off (ASTM E29) to the nearest 0.1% for compression deflection.

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SAMPLING AND TESTING

Lot Size. Sampling, testing and acceptance consideration will be made on a lot basis. A lot shall be defined as those bearings presented for inspection at a specific time or date. A lot shall be further defined as the smallest number of bearings as determined by the following criteria:

- A lot shall not exceed a single contract quantity.
- A lot shall consist of bearings with the elastomer being of the same dimensions and configuration.
- A lot shall consist of bearings produced in a continuous manner.

Procedure. The Department's representative shall select at random the required sample bearings from completed lots of bearings for testing by the Materials Bureau. Bearings with a plan area of less than 0.4 m² shall be tested for performance characteristics by the Materials Bureau. Bearings with a plan area greater than 0.4 m² shall be tested by an outside laboratory approved by the Materials Bureau. The Department shall assume the cost of testing the sampled bearings and the Contractor shall assume the responsibility and cost of transporting the sampled bearings from the place of manufacture to the testing laboratory. After testing, the Contractor has the responsibility for the cost of transporting the sampled bearings back to the bearing manufacturer or, if applicable, to the project site. All samples shall be taken and delivered for tests in accordance with the Department's written instructions. A minimum of thirty (30) days shall be allowed for inspection, sampling and testing by the Materials Bureau. This thirty days is exclusive of shipping time which is the Contractor's responsibility. The sampling procedure and test methods may be obtained from the Materials Bureau.

BASIS OF ACCEPTANCE. Acceptance of this material will be based on the manufacturer's name appearing on the Department's Approved List for Elastomeric Bridge Bearings and in accordance with the procedural directives of the Materials Bureau.

716-12 ELASTOMERIC BRIDGE BEARINGS WITH EXTERNAL LOAD PLATES

SCOPE. This specification covers the material requirements for elastomeric bridge bearings with external load plates. Bearings furnished under this specification shall be adequate for the specified design load, and provide for the thermal expansion and contraction, rotation, camber changes, and creep and shrinkage of structural members.

GENERAL. Elastomeric bridge bearings with external load plates (Type EB bearings) are composed of either plain elastomeric or laminated elastomeric bearings with external steel load bearing plates. The steel load bearing plates are bonded to the elastomer by vulcanization during the primary molding process. These bearings may be used for both fixed and expansion applications with appropriate changes in details, as shown on the contract plans. The bearings will accommodate longitudinal, transverse, and rotational movements.

Elastomeric bridge bearings with external load plates shall be designed in accordance with New York State Standard Specifications for Highway Bridges.

MATERIALS REQUIREMENTS. All materials shall be new with no reclaimed material incorporated in the finished bearing.

Elastomeric Material. The elastomeric compound used in the construction of these bearings shall contain only virgin crystallization resistant polychloroprene (neoprene) or virgin natural polyisoprene (natural rubber) as the raw polymer. The resulting product shall be free of porous areas, weak sections, bubbles, foreign matter, or other defects affecting serviceability. The physical properties of the cured elastomeric compound shall be determined by using samples taken from bearings and

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shall meet the requirements of Table 716-10-1.

The manufacturer shall certify that the elastomeric compound passes Grade 3 Low – Temperature Brittleness as determined by ASTM D746 – Brittleness Temperature of Plastics and Elastomers by Impact Procedure B.

Internal Steel Plates. Steel plates for internal laminates shall be rolled mild steel conforming to the requirements of ASTM A36M, or ASTM 1008/A 1008/M ASTM 1011/A 1011/M (Grade 33, 36 and 40).

External Load Bearing Plates and Steel Backing Plates. External load bearing plates shall conform to the requirements of ASTM A36M and to the requirements of the Steel Construction Manual (SCM), unless otherwise provided for in the contract documents.

Except as noted, all bearing surfaces of external load plates shall be finished or machined flat within 0.25 mm. Out-of-flatness greater than 0.25 mm on any plate, except the bottom surface of the lower external plates (masonry plates), shall be cause for rejection. The bottom surface of lower external load plates (masonry plates) shall not exceed an out-of-flatness value of 1.6 mm. Oxygen cut surfaces shall not exceed a surface roughness average of $25\mu\text{m}$ as defined by ANSI B46.1. Repairs shall conform to the requirements of the SCM.

External load bearing plate surfaces to be welded shall be painted with one coat of lacquer or other protective coatings approved by the Director of the Materials Bureau. This coating shall be removed before welding. All other surfaces shall be cleaned to meet SSPC-SP6, Surface Preparation Specification No. 6, Commercial Blast Cleaning and painted with three coats of paint. The paints, (primer, intermediate and finish coat) shall be selected from the Department's Approved List, Paints for Structural Steel. All coats of paint used shall be produced by the same manufacturer and be applied at a rate sufficient to produce a minimum dry film thickness of $75\mu\text{m}$ per coat. Each single paint coat shall be a color different from the others. For bearings used in conjunction with painted steel the color of the finish coat shall be the same color as the finish coat of the structural steel. For bearings used in conjunction with unpainted steel the color of the finish coat shall be a "rusty brown" color which is a reasonable visual match to Federal Color Standard No. 595, Color 20059.

DRAWINGS. Department approval of shop drawings are not required unless a change in the details shown on the plans is proposed. When Department approved drawings are required, they shall be furnished in accordance with SCM, Section 2, except that in place of two sets of Department approved drawings submitted to the designated Shop Inspection Agency, five sets of Department approved drawings shall be submitted to the Materials Bureau. The Contractor shall submit one copy of these drawings to the Engineer.

When the bearing details are identical to the plans, the Contractor shall be responsible for supplying shop drawings prepared by the manufacturer. The manufacturer shall certify that the bearings depicted on the drawings are in conformance with the contract documents. The Contractor shall submit one copy of the certified drawings to the Engineer and five copies of their certified drawings to the Materials Bureau. The Department's acceptance procedures will commence subsequent to receipt of these drawings. The Manufacturer shall note the following on all shop drawings:

- The Contract number, bridge identification number (BIN), feature carried/feature crossed, specification pay item no. and the type, size and quantity of bearings being produced.
- The design load (dead load plus live load) for each type and size bearing. If bearings of the same type and size are designed for differing load conditions the maximum design load shall be noted.
- The effective rubber thickness, typical laminate thickness, compressive area, shear

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area and shape factor.

- The Manufacturer's name, the location of the fabrication plant and the name and phone number of the manufacturer's representative who will coordinate production, inspection, and sampling and testing with the Materials Bureau.
- The specification references and grades of steel to be used.
- All welding procedures to be used in the manufacture of the bearings.

WELDING PROCEDURE. The bearing manufacturer shall submit a Welding Procedure to the Deputy Chief Engineer Structures (DCES) for each welding process to be used in the manufacture of the bearings. No welding shall be performed until the manufacturer receives an approved Welding Procedure.

FABRICATION. The finish of the mold used to produce these bearings shall conform to good machine shop practice. Each bearing shall be marked in indelible ink or flexible paint. The marking shall consist of the manufacturer's name, contract number, lot number, and individual bearing number. The marking shall be placed on at least one side or face that will be visible after erection and, if possible, on two sides or faces.

The bearings shall be cast as a single unit in a mold and bonded and vulcanized under pressure and heat to the specified size and thickness. They shall be cast as a single unit with the external load plate(s) bonded to the elastomer by vulcanization during the primary molding process. If internal steel plate(s) are required, they shall be commercially blast cleaned to a condition matching that of SSPC-Vis1, Pictorial Standards A SP6, B SP6 or C SP6, and cleaned of all oil or grease before bonding.

During any welding, the temperature of the steel adjacent to the elastomer shall not exceed 90°C. Temperature shall be controlled by welding procedures and temperature indicating crayons, or other devices approved by the Engineer. Unless otherwise approved by the DCES, all welding shall conform to, and all welders shall be qualified in accordance with the requirements of the SCM.

Bearing Tolerances. Finished elastomeric bearings shall conform to the design dimensions, with the tolerances listed in Table 716-11 and the following details:

A. Internal Steel Plates. The internal steel plates shall be checked for parallelism by measuring the distance between each individual steel plate, and between the top or bottom edge of the bearing to the first adjacent steel plate. For rectangular bearings, take measurements for each plate along the vertical surface of the bearing, located 25 mm from the edge of the four alternate corners. For round bearings, measurements will be taken at four points located at 90° intervals around the perimeter. The smallest of the four measurements shall be recorded for each plate. The cumulative total of these measurements shall not be less than 75% of the design effective rubber thickness.

B. Elastomeric Laminae. The average thickness of individual layers of elastomer in steel laminated elastomeric bearings shall not vary more than $\pm 20\%$ of the design thickness and in no case exceed the design thickness by 3 mm. Average thickness will be calculated from measurements taken at four points, located at 25 mm from the edge of the four alternate corners for rectangular bearings and at 90° intervals around the perimeter for round bearings.

Performance Characteristics

Compression Deflection. The compression deflection of each bearing shall not exceed 10.0% of the design effective rubber thickness at a compressive load equal to the actual design load.

The compression deflection shall be determined by loading the bearings to 3.4 MPa and 5.5

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MPa. At each load a deflection reading will be taken and the readings used to calculate a slope between the two loads. The slope shall then be used to determine the deflection at the bearing's design load.

The bearing and ambient temperature shall be $23^{\circ} \pm 2^{\circ}\text{C}$ at the time of testing.

Adhesion. The adhesion of the elastomer to the internal plates shall be demonstrated by subjecting the bearing to a compressive load equal to 150% of the actual design load. Upon visual examination, the bearing shall be free of visual defects.

The bearing and ambient temperature shall be $23^{\circ} \pm 2^{\circ}\text{C}$ at the time of testing.

NOTE: For conformance to this specification an observed or calculated value shall be rounded off (ASTM E29) to the nearest 0.1% for compression deflection.

SAMPLING AND TESTING

Lot Size. Sampling, testing and acceptance consideration will be made on a lot basis. A lot shall be defined as those bearings presented for inspection at a specific time or date. A lot shall be further defined as the smallest number of bearings as determined by the following criteria:

- A lot shall not exceed a single contract quantity
- A lot shall consist of bearings with the elastomer being of the same dimensions and configuration
- A lot shall consist of bearings produced in a continuous manner.

Procedure. The Department's representative shall select at random the required sample bearings from completed lots of bearings for testing by the Materials Bureau. The manufacturer shall supply the Department's representative with a copy of an approved Welding Procedure for each welding process used in the manufacture of the bearings. Bearings with a plan area greater than 0.4 m^2 shall be tested by an outside laboratory approved by the Materials Bureau. The Department shall assume the cost of testing the sampled bearings and the Contractor shall assume the responsibility and cost of transporting the sampled bearings from the place of manufacture to the testing laboratory. After testing the Contractor has the responsibility for the cost of transporting the sampled bearings back to the bearing manufacturer or, if applicable, to the project site. All samples shall be taken and delivered for test in accordance with the Department's written instructions. A minimum of thirty (30) days shall be allowed for inspection, sampling and testing by the Materials Bureau. This thirty days is exclusive of shipping time which is the Contractor's responsibility. The sampling procedure and test methods may be obtained from the Materials Bureau.

BASIS OF ACCEPTANCE. Acceptance of this material will be based on the manufacturer's name appearing on the Department's Approved List for Elastomeric Bridge Bearings and in accordance with the procedural directives of the Materials Bureau.