

costs and expenses necessary to complete the work.

Payment will be made under:

Item No.	Pay Item	Pay Unit
7232310	Deck Joint Strip Seal	Linear Foot

SECTION 724

ELASTOMERIC BEARINGS

724.01 Description. This work shall consist of furnishing and installing elastomeric bearings, either “plain” (consisting of elastomer only) or “laminated” (consisting of alternating individual layers of elastomer and internal steel laminates) as shown on plans.

Elastomeric bearings may be fabricated by any manufacturer that is able to comply with the specification requirements. Pre-qualification test samples, certifications, and elastomer formulation shall be submitted to the SCDOT Research and Materials Engineer for approval prior to its first use on Department projects. The materials shall be submitted well in advance of anticipated use and contain certified test results showing the actual test values obtained when the physical properties of the elastomer to be furnished were tested for compliance with the pertinent specification requirement. Pre-qualification test samples shall consist of at least two bearings typical of the formulations and workmanship intended for use on Department projects. Sample size should be no larger than 11 inches x 17 inches.

The Department’s inspection and acceptance of elastomeric bearing pads will be in accordance with the SCDOT *Policy for Inspection and Acceptance of Elastomeric Bearing Pads* latest edition. A list of previously qualified manufacturers may be obtained from the Research and Materials Engi-

neer.

724.02 Materials. Materials shall consist of Polychloroprene (Neoprene) Grade 2 elastomer as shown in AASHTO Bridge Specification, Division I, Table 14.6.5.2-2, Temperature Zone B and for Low Temperature Brittleness. In accordance with the Bridge Specification Division II, Section 18, Grade 2 material does not require a brittleness test. The physical properties of the cured elastomer shall comply with the requirements shown in Table I of AASHTO M 251. Reinforced pads shall be 50 or 60 Durometer Hardness as specifically designated on the plans.

724.03 Fabrication. The bearing pads shall be constructed in conformance with the AASHTO M 251 and in conformance with details shown in the plans, or the AASHTO Specification for Highway Bridges where referenced.

Pin grooves in laminated bearings shall be filled with a vulcanized neoprene or a silicone material capable of bonding and maintaining integrity with the pad.

Tolerance in dimensions of completed pads shall be as listed in Table 2 of AASHTO M 251 unless other tolerances are shown on the design drawings.

724.04 Acceptance Testing. Acceptance shall be based on either Level I or Level II testing. Level I testing is applied to all bearings and Level II shall, at the discretion of the Engineer, be applied to the more critical or unusual bearings. It shall also be used to resolve differences over acceptance of bearings under Level I.

A. Level I. Level I testing shall be performed as stated in Section 8 of AASHTO M 251 except that only 10% of the bearings are required to undergo the compressive test. Results of the compressive stress-strain curve shall be submitted for record.

B. Level II. All Level II testing shall be performed as

specified in Section 8 of AASHTO M 251. Level II certification requires that all Level I conditions are satisfied except that individual conditions may be waived by the Engineer if Level II certification is used as an arbitration of disputes.

724.05 Certifications. The bearing manufacturer shall certify that all of the pre-qualification samples submitted are of the same elastomer formulation and of equivalent cure to that used in the finished products to be furnished on Department projects.

The producer may be required to perform the complete pre-qualification testing procedure again during later production should the Research and Materials Engineer feel such action appropriate based on performance of the pad in service.

After pre-qualification approval, the inspection, sampling, and testing of actual bearing production will be performed by the manufacturer with certified laboratory test results of the following:

1. Elastomer properties on each batch or lot of elastomer used in the manufacture of the bearings, as contained in Table 1 of AASHTO M 251.
2. One Bond Strength test per lot of reinforced bearings.
3. Compressive load results required by Level I testing which requires each bearing to be load tested at 150% of maximum design load.

724.06 Installation. All bearing surfaces under elastomer must be plane to within 0.062 inch and horizontal to within 0.01 radians in accordance with plans and special provisions. Elastomeric bearings shall bear directly on the concrete surface.

Nuts for anchor bolts shall be tightened finger tight then back off 1/16 inch. The threads shall then be burred with a sharp pointed tool or peened.

When sole plates are attached to the beam flange they are to be placed so as to be aligned with the anchor bolts after the dead load deflection has occurred if the dead load deflection and slope produce a change in length of more than 1/4 inch.

Caution shall be exercised where a field weld or shop weld will be made while elastomeric bearing pad is in contact with metal. In no case shall the elastomer or elastomer bond be exposed to instantaneous temperatures greater than 400°F. Any damage to elastomeric bearing due to welding will be cause for rejection. Temperature shall be controlled by use of heat crayons furnished by the Contractor.

724.07 Method of Measurement. Elastomeric bearing shall be measured by each bearing pad which conforms to the size and dimensions specified on the plans, complete in place, and accepted by the Engineer.

724.08 Basis of Payment. All cost for furnishing and placing elastomeric bearings shall be included in the contract unit price for Elastomeric Bearing, which price and payment shall include all labor including welding sole plate, burring or peening anchor bolt threads and miscellaneous material necessary to complete the work.

Payment for the steel sole plate shall be included in the contract unit price for structural steel if structural steel beams are used, or in the contract unit price for prestressed concrete beams if prestressed beams are used.

Anchor bolts, washers, and nuts will not be included in this item, but will be paid for under the appropriate substructure item.

Payment for this item will include all direct and indirect

costs and expenses necessary to complete the work.

Payment will be made under:

Item No.	Pay Item	Pay Unit
7243100	Elastomeric Bearing	Each

SECTION 725

SHOP PLANS AND WORKING DRAWINGS FOR STRUCTURES

725.01 Description. The following policy shall be adhered to when submitting Shop Plans and Working Drawings for structures. Failure to follow this policy will delay processing of submittals. Any subsequent loss of construction time due to failure to follow this policy will not change the project's completion date.

725.02 Shop Plans. Shop plans are required for fabricated items that will remain a permanent part of structures. Shop plan submittals for projects designed in-house shall be forwarded to the following address:

South Carolina Department of Transportation
Bridge Design Engineer - Room 508
955 Park Street
Columbia, S.C. 29201

Shop plan submittals for projects designed for the Department by a Design Consultant shall be sent directly to the Consultant. The Contractor will be provided with the necessary mailing information at the Preconstruction Conference.

For submittals sent to the Bridge Design Engineer, a copy