



Concrete Structures – Bearings – Elastomeric Bearing Pads

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	04-25-2023	Original Issue	Richard Foley

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Background

This process establishes Structure Construction (SC) responsibilities and procedures for the installation of elastomeric bearing pads, including certificates of compliance, materials, and construction.

Construction of elastomeric bearing pads includes the location and elevation of the bearing seat, so due care must be given to the proposed thickness of the elastomeric bearing pad during preparation.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review the [Contract Specifications](#) (CS), Section 51-3.02, *Concrete Structures – Bearings – Elastomeric Bearing Pads*, that this BCM is based on as identified in the title block above. The information in the CS typically will not be repeated in the text of this BCM.

Process Inputs

1. Submittals per contract documents

Procedure

1. All work associated with this process is charged as [Project Direct – Construction](#).

2. Inspection of field work for this process is:
 - a. [Intermittent](#) for new construction.
 - b. [Continuous](#) for existing structures.
3. Before construction begins:
 - a. Review the following:
 - i. Contract documents
 - ii. [Attachment 1](#), *Compressive Deflections of Fiberglass or Steel-Reinforced Elastomeric Bearing Pads*
 - iii. CS, Section 51-1.03D(6), *Concrete Structures – Construction – Placing Concrete – Bearing Surfaces*, for bearing surface requirements
 - iv. Certificates of compliance (COC) for bearing pads with certified test results
 - v. The *Quality Assurance and Source Inspection (QASI) Manual*, Sections 51A, *Concrete Structures – General*, and 51E, *Elastomeric Bearing Pads*, for photographs of the elastomeric bearing pads and an understanding of the Materials Engineering and Testing Services (METS) review process before the elastomeric bearing pads are tested and released by METS.
 - b. Although not contractually required, if shop drawings for elastomeric bearing pad are submitted, review them for contract compliance and file them in the project records.
 - c. The Structure Representative (SR) confirms that the Contractor has submitted the [Form CEM-3101](#), *Notice of Materials to be Used*. The SR forwards a copy of the CEM-3101 to METS.
 - d. Coordinate with METS and the Contractor for sampling and testing of bearing pads per contract requirement.
 - e. Document bearing pad field release, COC, and test results on [Form CEM-4102](#), *Material Inspected And Released On Job*, in accordance with the following tables from the *Construction Manual*, Chapter 6, [Section 6-2](#), *Sampling and Testing – Acceptance of Manufactured or Fabricated Materials and Products* (note this step might occur during construction):
 - i. Table 6-2.1, *Inspection of Fabricated and Manufactured Materials*
 - ii. Table 6-2.3, *Materials Accepted by Certificate of Compliance*.
 - f. Calculate bearing pad seat elevations using pad thickness, compressive deflection of the bearing pads (per [Attachment 1](#)), and 4-scale drawings. If bridge is on a skew, seats and pads are to be aligned with the girders and not the abutment, as illustrated in [Memo To Designers 7-1](#), *Bridge Bearings*,

Figure 1, *Bearing Pad Orientation*. Note that this memo is referenced and linked to, in Attachment 1.

- g. For existing structures:
 - i. Field verify dimensions, locations, and orientation of bearing pads and details (e.g., anchor bolt openings for steel girders) are correct. Consult with Bridge Design (BD) if it is determined there are conflicts in the contract plans.
- 4. During construction:
 - a. Verify that bearing pads have been released per step 3.e.
 - b. Field verify that dimensions, locations, orientation of bearing pads and details (e.g., anchor bolt openings for steel girders) are correct. Consult with BD if it is determined that there are conflicts in the plan.
 - c. Verify grade and location of bearing seats prior to substructure concrete placement. Use fall protection where required to safely access and inspect the work.
 - d. Confirm the bearing seats are level and verify the elevations prior to placement of the bearing pads, as required in the CS. If elevations are incorrect, the Contractor must submit a plan to correct the deficiency for authorization.
 - i. SR to consult with BD if corrections are needed.
 - e. Verify placement of silicone grease on the upper surface of the bearing pad and galvanized sheet steel, and that sheet steel is smooth and free of kinks, bends, or burrs.
 - f. Prior to placement of superstructure concrete for bearing seats, verify that concrete cannot enter the bearing pad area during concrete placement.
 - g. Document all inspection, construction, and quality assurance activities, pertinent to this BCM, in the daily reports per [BCM C-7](#), *Daily and Weekly Reports*.
- 5. File all materials acceptance documentation and daily reports in the appropriate category in the project records as specified in the *Construction Manual*, Chapter 5, Section [5-102](#), *Contract Administration – Project Records and Reports – Organization of Project Documents*.

Process Outputs

- 1. Bearing pad submittals verified for contract compliance, complete with test samples

2. Certificates of compliance (COC) for bearing pads, with certified test results
3. CEM-4102, *Material Inspected and Released on Job*
4. Installed bearing pads
5. Daily reports

Attachments

1. [Attachment 1](#), *Compressive Deflections of Fiberglass or Steel-Reinforced Elastomeric Bearing Pads*