



Structural Shotcrete

Revision and Approval

| Revision | Date | Nature of Changes | Approved By |
|----------|------------|-------------------|--------------|
| 0 | 04-22-2019 | Original issue. | Steve Altman |

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Background

This process establishes Structure Construction (SC) responsibilities and procedures for authorization of submittals, quality assurance, materials, construction, and payment for structural shotcrete.

This process applies specifically to the application of structural shotcrete. General requirements for shotcrete are included in Bridge Construction Memo [\(BCM\) 53-1, Shotcrete - General](#).

Prior to reviewing this BCM, it is essential to review the [Contract Specifications](#), Section 53-2, *Shotcrete – Structural Shotcrete*, applicable to your specific project, that this BCM is based on as identified in the title block above. The information in the contract specifications typically will not be repeated in the text of this BCM.

Process Inputs

Contractor submittals for structural shotcrete.

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](#) inspection of earth work and form construction.
 - b. [Continuous](#) inspection for structural shotcrete application, and coring test samples.

3. Review [BCM 53-1](#), *Shotcrete – General*, for general shotcrete process tasks for all construction phases.
4. Review *Construction Manual*, Section [4-53](#), *Construction Details – Shotcrete*.
5. Before construction begins:
 - a. Review and authorize submittals:
 - i. Notify the Contractor in writing.
 - ii. Contractor's quality control plan.
 - iii. Concrete mix designs.
 - iv. Preconstruction test panel and test core results.
 - b. Verify that the test panel is constructed in accordance with the contract and authorized submittals.
6. During construction:
 - a. Verify production shotcrete operations comply with the contract and authorized submittals.
 - b. Determine locations for required sampling and testing.
 - c. Accept or reject shotcrete placement per the requirements of the contract documents based on:
 - i. Visual inspection of production test cores.
 - ii. Production core compressive strength test results:
 1. Accept or reject work accordingly (e.g., 95% minimum, below 95%, below 85%).
 - iii. Consult Materials Engineering and Testing Services (METS) as necessary for compliance with American Society for Testing and Materials (ASTM) testing.
 - d. Document all inspection, construction, and quality assurance activities in the daily reports per [BCM C-7](#), *Daily and Weekly Reports*.
7. File all test results and Daily Reports in the appropriate category in the project records as specified in the *Construction Manual*, [Section 5-1.02](#), *Contract Administration – Project Records and Reports – Organization of Project Documents*.

Process Outputs

1. Authorized Structural Shotcrete submittals
2. Production test core compressive strength results

3. Completed structural shotcrete elements

Attachments

None