



INDIANA DEPARTMENT OF TRANSPORTATION Division of Materials and Tests

Directive 109

Material Certification Procedure for Contracts Utilizing SiteManager

1.0 INTRODUCTION

1.1 Purpose

Material Certification is required in the Code of Federal Regulations, CFR, as described in 23 CFR 637. This Directive details the INDOT procedures required to reasonably ensure that the quality of all materials incorporated into the project is in conformance with the contract (plans and specifications).

Contract Material Certification is a shared process with roles and responsibilities for Construction Field Personnel, District Testing Personnel, and the Division of Materials and Tests. Construction and Testing personnel will strive to ensure that the Contractor uses the required materials, beginning with the preconstruction conference and continuing throughout the life of the contract. The Pay Items, Plans, Special Provision, Specifications, and Frequency Manual guide the decision-making. SiteManager and the reports described herein simply document those decisions.

1.2 Scope of Process

Material Certification requires the use of 11 reports. These reports are necessary to confirm the proper acceptance requirements for materials incorporated into the scope of work. Construction will run the reports throughout the life of the contract. Construction and Testing personnel will update and maintain material record data throughout the life of a contract, thus ensuring that the Final Material Certification review occurs quickly and efficiently after completion of the final IC-642 (Contract Estimate Quantity & Final Quantity Discrepancy Report).

The Final Material Certification Review will occur by District Testing upon submittal of a Material Review Letter by the PE/S in Construction. District Testing will perform a final review of all 11 reports, and a probability-based check of select sample records for completeness. The District Testing Engineer will issue the Final Material Certification Letter upon resolution of found errors.

1.3 Reports

SiteManager.in.gov lists multiple reports. This Directive details the required reports for Material Certification. The reports may be found by going to <https://sitemanager.in.gov/>.

Enter your SiteManager ID, SiteManager password, and select the appropriate Group Name to access the list of SiteManager reports.

1.4 Terminology

Appeal Credit Adjustments – A \$500.00 credit adjustment to be included in the quality adjustment for failed materials pay item for each appealed subplot that did not result in an improvement to the Subplot Composite Pay Factor (SCPF) or Lot PF, in accordance with 401.20.

Design Mix Formula (DMF) – A mix design for hot mix asphalt detailing the materials used and their corresponding sources as well as the target testing criteria for that design.

DTE – District Testing Engineer. An INDOT employee assigned to manage and oversee testing operations at the district.

Failed Materials Committee (FMC) – A committee that consists of select INDOT employees from construction, design, materials, and pavement divisions, as well as other specialized representation, that review and adjudicate cases of materials or finished products determined not to be in accordance with applicable specifications or tolerances.

HMA Pay Wizard Application – An application that exists in the INDOT Technical Applications Pathway (ITAP), which is a tool that is intended to collect and compile QC/QA-HMA test results, appeal results, and subplot quantities to calculate quality adjustments for HMA and appeal credits based on pay item and DMF usage.

IC-642 – INDOT Contract Estimate Quantity & Final Quantity Discrepancy Report that lists pay items including their original quantity amount, change ordered quantity amount, and final quantity amounts.

Mixture Adjustment Factor (MAF) – The MAF is required to assure that every DMF provides the planned design pavement thickness and that pay quantities and pay factors are adjusted accordingly. The DMF shall state the Mixture Adjustment Factor, MAF. Prior to paving, both the planned quantity and lay rate shall be adjusted by multiplying by the MAF. When mixture is produced from more than one DMF for a given pay item, the MAF will be applied to the applicable portion of the mixture for each. The measured quantity will be divided by the MAF to determine the pay quantity. See 401.05, 402.05 and 410.05 for calculations and further details.

PE/S – Project Engineer, Construction Project Manager, Project Supervisor, or other duly assigned personnel who is either an INDOT employee or a Consultant-employee hired by INDOT and who is assigned to supervise and manage a contract and the completion of that contract.

1.5 Responsibilities

DTE (District Testing Engineer) – Perform final Material Certification review in accordance with this Directive. Work with other personnel to ensure timely resolution of any issues. Perform or direct additional checks of acceptance testing records. Complete Letter of Certification by State Engineer when all issues are resolved.

Division of Materials and Tests (M&T) – Provide technical support and timely processing of Failed Materials Committee resolutions.

PE/S – Create and maintain the contract material record in SiteManager (SM) and utilize SM reports throughout the life of the contract to track material records and resolve material record errors and omissions.

Perform review and ensure that all reports comply with requirements at time of submittal of final construction record to the District Final Records Coordinator. Communicate exceptions in writing to the DTE as they are recognized. Submit signed Material Review Letter to the DTE when ready for the Testing Department Material Record Review.

Testing Material Records Administrator – A district employee who revises default contract sample checklist settings in coordination with PE/S. Review reports and assist the PE/S throughout the life of the contract at request of the PE/S. Perform final review of all reports upon receipt of Material Review Letter and final IC-642 from Construction Review Office. Perform additional checks of acceptance testing records. Seek clarification from DTE/District Materials Engineer/Division of Materials and Tests as needed to assist PE/S during life of contract. Notify PE/S of problems that need corrected. Compile exceptions and observations and prepare draft Letter of Certification by State Engineer for DTE.

1.6 Resources

Testing and acceptance requirements for each of the materials used for each of the pay items should align with the requirements as set forth in the following contract resources. Resource documents should be utilized in the order-of-importance as described in section 105.04 of the Standard Specifications.

1. Schedule of Pay Items (located in Contract Information Book)
(<http://erms.indot.in.gov/viewdocs/>)
2. Unique Special Provisions (located in Contract Information Book)
(<http://erms.indot.in.gov/viewdocs/>)
3. Plans and Standard Drawings
(<http://erms.indot.in.gov/viewdocs/>) and
(<https://www.in.gov/dot/div/contracts/standards/>)
4. Recurring Special Provisions (located in Contract Information Book)
(<https://www.in.gov/dot/div/contracts/standards/>)
5. Standard Specifications

<https://www.in.gov/dot/div/contracts/standards/book/index.html>)

Other Resources

1. Manual for Frequency of Sample and Testing and Basis for Use of Materials (<https://www.in.gov/indot/2736.htm>)
2. Final Construction Record Guide (<https://www.in.gov/indot/div/construction.htm>)
3. General Instructions to Field Employees (<https://www.in.gov/indot/div/construction.htm>)
4. Material Certification Guide (<https://www.in.gov/indot/2736.htm>)
5. Approved change orders generated on the contract

2.0 MATERIAL REVIEW LETTER

Steps below to be completed by the PE/S

- 2.1** Run all reports as described below. Make corrections until all reports are complete and accurate. (See Material Certification Guide for detailed instructions)
- 2.2** Complete and sign Material Review Letter upon successful project level review and correction of all reports (see template in Appendix).
- 2.3** Submit completed letter to District Testing through Testing Material Records Administrator.

3.0 MATERIAL RECORD REVIEW PROCEDURES

The Procedure for Material Certification of contracts utilizing SiteManager is a SiteManager Report centric and probability driven process that is structured to verify each of the individual parts of the contract material record. For the purpose of this review procedure, a contract material record is divided into seven parts:

- 1) Verification of Contract Testing Requirements
- 2) Verification of Basic Sample Data
- 3) Verification of Materials Accepted by Certification
- 4) Verification of Materials Accepted by Approval Number
- 5) Verification of Materials Accepted by Test Results
- 6) Verification of Failed Materials, and
- 7) Verification of QC/QA-HMA/SMA/OG Quality Adjustments

3.1 Verification of Contract Testing Requirements

Objective: Utilize each of the following SiteManager reports for the designated contract to ensure that all contract items and associated materials are accounted for, and that the testing and/or acceptance requirements for each material

complies with the contract requirements. Refer to Material Certification Reports Guide for specific instruction(s) on how to best utilize each report.

- 3.1.1 Contract Estimate Quantity & Final Quantity Discrepancy Report (IC-642)** – Review to determine items which may have unpaid reported quantities, which will result in additional tests required.
- 3.1.2 Contract Sample Checklist for Testing Shortages Report** – Review to determine which items have testing shortages based on the Contract Testing Requirements established during contract generation in SiteManager.
- 3.1.3 Contract Items Not Listed on the Contract Sample Checklist Report** – Review to determine which items (original and change order items alike) may need to have material testing requirements added to the Contract Sample Checklist. The PE/S shall request the change through District Testing.
- 3.1.4 Contract Sample Checklist (by Project, by CLN, or by Material) Report** – Review materials and testing requirements for compliance with contract requirements and identify all errors and omissions. The Contract Sample Checklist should reflect the materials that were used and their respective acceptance requirements.

3.2 Verification of Basic Sample Data

Objective: Utilize the following reports for the designated contract to ensure that all critical basic sample information is complete. Refer to Material Certification Guide for specific instruction(s) on how to best utilize each report.

- 3.2.1 Approved Material Samples with no Product Names Report** – This report must be blank. All samples reporting INDOT approved materials shall report the product. All samples listed in the report shall be addressed by the PE/S.
- 3.2.2 Sample with no Producer Supplier Code Report** – This report must be blank. All samples must report the Producer, Supplier, or Manufacturer of the material that was incorporated into the project.
- 3.2.3 Material Certification Summary Report** – Review this report to verify that all samples are authorized and the status of each is "Complete".

3.3 Verification of Materials Accepted by Certification

Objective: Utilize the following SiteManager report for the designated contract to ensure that the correct type of certification is being reported for each material that was used on the contract and accepted by certification, and that all type A certifications are attached in SiteManager and are correct and passing. Refer to

Material Certification Guide for specific instruction(s) on how to best utilize this report.

3.3.1 Material Certification Samples Report

3.4 Verification of Materials Accepted by Approval Number

Objective: Utilize the following SiteManager report for the designated contract to ensure that legitimate approval numbers are being reported for each material that was used on the contract and accepted by approval number, and that there are no contradictions between the approval numbers reported nor the PE/S-Mnfct (Producer/Supplier-Manufacturer). Refer to Material Certification Guide for specific instruction(s) on how to best utilize this report.

3.4.1 Material Approval Number Sample Report

3.5 Verification of Materials Accepted by Test Results

Objective: Utilize the following SiteManager report for the designated contract to do the following. Observe material assignments to multiple PLNs. Confirm appropriate test method groupings in accordance with Construction Memo 15-02, accurate represented quantities, and valid sample authorizations. Conduct a probability driven review of test templates in SiteManager in accordance with Appendix (A) Testing - Additional Review Process for Acceptance Method = Test Results to verify completeness, correctness, accuracy, and passing status of test results. Refer to Material Certification Guide for specific instruction(s) on how to best utilize this report.

3.5.1 Contract Sample Records with Acceptance Method = Test Results Report

3.6 Verification of Failed Materials

Objective: Verify that all failed materials are accounted for and reported in SiteManager with a status of Fail. Then utilize the following SiteManager report for the designated contract to verify that each sample with a status of Fail is resolved and linked with another sample that serves to adjudicate the failure. (Note: Must assure that all known failures are included in SiteManager and marked FAIL before utilizing this report.)

3.6.1 Failed Contract Samples Report – Each “Sample ID” listed shall be paired with a “Linked Sample ID”. Otherwise, the report shall be blank.

All failed materials will require proper adjudication in accordance with Directive 112. Adjudications consist of both district level adjudications (e.g. QC/QA-HMA) and Failed Material Committee adjudications. Appeal credit adjustments are also credited to the contract as quality adjustments for failed materials. Help verify that the IC-642 final pay quantities for the Quality Adjustment, Failed Materials

pay item reflects all of adjudications in the form of credits to the contract (i.e. negative transactions). Also, verify that all FMC remove and replace orders have been completed.

3.7 Verification of QC/QA-HMA/SMA/OG Quality Adjustment

Objective: Assist the PE/S and Construction Review Officer as needed to assure that QC/QA-HMA information is properly accounted for and processed. Help verify that delivered quantities, DMF's, and completed sample records are available and properly accounted for. Help verify that this information is properly synced between SiteManager and the HMA Pay Wizard Application to ensure proper calculation of quality adjustments and appeal credit adjustments. Help verify MAF adjustments are applied correctly to determine final pay quantities. Help verify that the IC-642 final pay quantities for the Quality Adjustment, HMA and Quality Adjustment, Failed Materials pay items reflect the incentives (bonuses) and disincentives (credits) that are due to be paid and collected, respectively.

4.0 COMMUNICATION TRACKING FOR ERROR CORRECTIONS

Error summary created by District Testing. Sorted by Material Code, identifying sample IDs reviewed that are correct, sample IDs reviewed that are incorrect, and sample IDs that PE/S needs to review. See Appendix (B) Errors and Observations for resolution options.

5.0 EXCEPTIONS

5.1 Exception Letter

An Exception Letter will be required to document testing shortages that cannot be resolved by any other means.

The testing Exception Letter by the PE/S shall be on company letterhead/email, and shall include as much detail as possible including, but not limited to the following:

- 5.1.1** Contract Number
- 5.1.2** Date
- 5.1.3** Signature/Email Sender Identified
- 5.1.4** Project Control Number (PCN)
- 5.1.5** Project Line Number (PLN)
- 5.1.6** Contract Line Number (CLN)
- 5.1.7** Item description(s)
- 5.1.8** Location(s) of material/work
- 5.1.9** Quantity resented by missing/non-passing test results
- 5.1.10** Contract requirements for testing (i.e. Testing Frequency)
- 5.1.11** Total number Tests Required
- 5.1.12** Shortage of passing tests

- 5.1.13** Reasons(s) for shortages/non-compliances; and
- 5.1.14** How the non-conforming/untested material is performing to-date

The testing Exception Letter will need to be reviewed for concurrence by the AE and sent to the DTE for review and approval.

5.2 Exception Letter Sample Record

Upon DTE approval of an Exception Letter, create a Sample Record with the appropriate following information:

5.2.1 Basic Sample Data tab

- 5.2.1.1** Material Code
- 5.2.1.2** Sample Type
- 5.2.1.3** Acceptance Method
- 5.2.1.4** Producer/Supplier
- 5.2.1.5** Product if the material is on the Approved Material List
- 5.2.1.6** Scan and attach the Exception Letter to the Sample Record

5.2.2 Contracts tab

Associate to the appropriate Project line items covered by the Exception Letter

5.2.3 Tests tab

- 5.2.3.1** Appropriate test methods covered by the Exception Letter
- 5.2.3.2** Review Date for each test method = date of the approval of the Exception Letter

5.2.4 Basic Sample Data tab – Additional Steps

- 5.2.4.1** Status = Complete
- 5.2.4.2** Authorize

6.0 LETTER OF CERTIFICATION by DISTRICT TESTING

- 6.1** Review all reports as described above. Work with PE/S to make any remaining corrections until all reports are complete and accurate. Some examples of errors requiring correction are in Appendix (B).
- 6.2** Perform additional checks of acceptance testing records
 - 6.2.1** Run Acceptance Method = Test Results report
 - 6.2.2** Review random selected SiteManager IDs for all Material Codes in accordance with the procedure shown in Appendix (A)
 - 6.2.3** Work with PE/S to resolve all issues

- 6.3** Perform additional review based on DTE analysis for any areas of concern, when applicable.
- 6.4** Compile exceptions and observations for inclusion in Letter of Certification by State Engineer (Appendix D). Some examples of errors that may remain and be listed as observations are in Appendix (B).
- 6.5** Complete Letter of Certification by State Engineer upon successful review and correction of all reports listed in this Directive. Obtain DTE Signature. Attach Material Review Letter from PE/S. (see template in Appendix C).
- 6.6** Submit completed letter to District Construction's Final Review Officer for inclusion in the Final Construction Record.

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7.0 APPENDICES

7.1 Appendix A

Testing-Additional Review Process for Acceptance Method = Test Results

1. Testing-For Every Material Code, Review Required % of Sample IDs

1. Testing. Perform Review.

Initial and Secondary

- Initial Review = 25% of Sample IDs per every Material Code
- For Material Codes with No Errors, Review is Complete
- For Material Codes with minor errors, review is complete. Testing-List as "Observations" (Note 1) on Material Certification Letter
- For Material Codes with Errors (Note 1) found, proceed to Secondary Review
- Secondary Review = Additional 25% (Total 50% of Sample IDs per every Material Code)
- For Material Codes with Errors found in Secondary Review, Flag Material Code and/or Sample IDs for that Material Code
- For Material Codes with No Errors found in Secondary Review, Flag Sample IDs with Errors found in Initial Review Only
- Compile list of Flagged Material Codes and/or Sample IDs needing Project Engineer review
- Notify Project Engineer of Required Corrections
 - Include AE in loop for contracts with significant problems
- To Process Step 2
- Note 1. See Appendix B Errors and Observations for definitions

2. Project Engineer-Correct Errors Identified by Testing Review

2. Project Engineer. Make Corrections

- For Material Codes with Errors only in Initial Review, fix noted errors
- For Material Codes with Errors found on Secondary Review, fix noted errors, plus review all other Sample IDs under that Material Code. Correct all additional Sample ID errors as found.
- Notify Testing when Corrections are Completed
- Identify Non-Correctable Errors/Exceptions/Other Observations
- To Process Step 3

3. Testing-Review Corrections

3. Testing. Check Material Codes that were sent to Project Engineer

- For Errors identified only in Initial Review
 - Check Specific Sample IDs
- For Material Codes that had Errors identified in Secondary Review
 - Check All Sample IDs
- Identify Remaining Correctable Errors.
 - Return to Project Engineer for Correction/Copy AE
 - To Process Step 2
- Review/Confirm Non-Correctable Errors/Exceptions/Other Observations
 - To Process Step 4
- For Material Codes with No Errors, Review is Complete

4. Exceptions

4. Testing and Project Engineer.

Discuss Non-Correctable Errors

- Identify Material Codes/Sample IDs needing formal Exception letter from Project Engineer .
- Project Engineer writes Exception Letter and sends through AE to DTE for approval
- Identify Material Codes/Sample IDs with other issues.
 - Testing-List as "Observations" (Note 2) on Material Certification Letter
- Identify Material Codes/Samples IDs with major issues.
 - Testing-Initiate formal Failed Materials Process
- Note 2: See Appendix B Errors and Observations for definitions

7.2 Appendix B - Errors and Observations

7.2.1 Definitions

Errors requiring Corrective Actions

- Basic Sample Data tab: Input field inaccuracies and/or omissions.
 - All fields except "Geog Area"
- Additional Sample Data tab: Mix ID (QC/QA HMA).
- Contract Tab: Cumulative Contract tab Represented Quantities less than or equal to the Basic Sample Data tab Represented Quantity.
- Attachments: Type A Certifications document information as per section 916. Buy America certifications as per CM20-03 and CM21-03.
- Test Tab: Anything that confirms proper acceptance of material with supportive information.
- Reports: Incomplete, incorrect, contradictory, or missing information.

Observations

- Anything else that does not hinder Material Certification but improves quality of report.
- Basic Sample Data tab: "Geog Area"

7.2.2 Outcomes

Errors.

- Corrective Action options (must be addressed in order to certify material records)
- Correct report/checklist
- Failed Material / Cost Adjustment
- Exception Letter
- Change Order to adjust requirements

Observations.

- Observation options (does not need to be corrected in order to certify material record)
- Correct report/checklist
- List on Final Material Certification report

7.3 Appendix C – Material Review Letter by PE/S

(Editable pdfs of this letter are available on the Department's website <https://www.in.gov/indot/2736.htm>. PE/S's employed by consultants should use their corporate letterhead.)



Date:

MATERIAL REVIEW BY PROJECT ENGINEER/MANAGER/SUPERVISOR

Contract:

Project:

<Name>

District Testing Engineer

Dear:

The contract material record has been reviewed to the best of my knowledge in accordance with INDOT Division of Materials and Tests Directive 109. Acceptance testing was performed in accordance with INDOT Division of Materials and Tests Directive 107, the Independent Assurance and Qualified Acceptance Personnel Program. Buy America certifications, in accordance with 106.01(c), are complete and attached to the appropriate Sample IDs in SiteManager.

All of the following reports have been completed:

1. Contract Estimate Quantity & Final Quantity Discrepancy
2. Contract Sample Checklist for Testing Shortages Report
3. Contract Items Not Listed on the Contract Sample Checklist Report
4. Contract Sample Checklist (by Project, by CLN, or by Material) Report
5. Approved Material Samples with no Product Code Report
6. Sample with no Producer Supplier Code Report
7. Material Certification Summary Report
8. Material Certification Samples Report
9. Material Approval Number Sample Report
10. Contract Sample Records with Acceptance Method = Test Results Report
11. Failed Contract Samples Report

Sincerely,

Construction Project Engineer/Manager/Supervisor

cc: AE
District Construction Final Review
file

7.4 Appendix D – Letter of Certification by State Engineer
(An editable .docx file of this letter have been sent to the six DTEs.)



INDIANA DEPARTMENT OF TRANSPORTATION

Date:

LETTER OF CERTIFICATION BY STATE ENGINEER

Contract:

Project:

Mr. Joseph Novak
State Construction Engineer

Dear Sir:

This is to certify that the above-referenced contract has been reviewed in accordance with INDOT Division of Materials and Tests Directive 109 and the materials incorporated in the construction work have been found to comply with the requirements therein.

Acceptance testing has been performed in accordance with INDOT Division of Materials and Tests Directive 107, the Independent Assurance and Qualified Acceptance Personnel Program.

Exceptions to this contract are listed below with documentation attached.

-

Observations found during the contract review are listed below.

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Sincerely,

<Typed Name>
District Testing Engineer

cc: Project Engineer/Manager/Supervisor
Construction Area Engineer
District Construction Review
file