

Appendix H – Assurance Test Requirements (DMT)

IN-HOUSE ASSURANCE TESTING The assurance testing requirements that follow are in house tests not directly associated with the project. Although required as specified in the minimum schedule, these assurance requirements do not affect the Final Certification process on a project-to-project basis.

1. Assurance Verification of HMA Field Inspectors – for gradation testing and marshal molds fabricated in contractor field laboratories. This is performed as a minimum of one per inspector per month & one per plant per month for plants producing over 4000 tons/month. Program currently maintained by Andrew Bednar.
2. Bulk Cement Certification Program– Random samples are selected and tested to assure compliance with our cement certification program. Program currently maintained by Roberto Rodrigues.
3. Assurance Testing of Sand and Stone Aggregates for PC Concrete – All PC Concrete supplier aggregate stockpiles are randomly sampled every two weeks for compliance on a plant to plant basis, and assurance tests are required every ten tests for verification of satellite laboratories personnel and equipment. Program currently maintained by Charles Gardon.

LISTED BELOW ARE ALL ACCEPTANCE TESTING ITEMS THAT REQUIRE
MINIMUM ASSURANCE TESTING (with example quantities) ** requires updating of testing verification process

Hot Mix Asphalt Mixtures – Class 1

Testing Needed for: Gradations run (and molds made) at the plant for acceptance of the material.

Example Quantity: 2000 Tons

Who tests and where? DMT Field Inspectors at the producers plants

Frequency Required: Minimum 3 gradations a day (for 300 tons a day or more/day) or based on plant performance and tonnage. Generally the molds are made with each gradation and are run in the lab as part of the acceptance process.

Tests Required: At least 3 tests should be run by the inspector that day. The HMA Section handles test coverage and will post results for the item and material quantities after testing is complete.

How to find out if testing is completed: This information is posted on the computer and a status and quantity will be posted for the item. If the total job item quantity is 3000 tons of Class 1, then 3000 tons of material quantity will have to be approved for adequate test coverage.

Required status: Acceptance

Completed Y/N ____

Testing Needed for: Density Testing for material placed in the field (Nuclear)

Example Quantity: 2000 Tons

Who tests and where? Project Inspection Forces at the project sites.

Frequency Required: Minimum of 1 test per day for 2000 tons for thickness over 1-1/2”.

Tests Required: At least 1 set of field nuclear density tests for the production day should be performed and forwarded to the DMT.

How to find out if testing is completed: If received from the projects, copies of field density testing are filed in the basement project files. Currently, the information must be manually obtained and reviewed for verification of required field density testing. ****Could field density testing be reviewed by HMA personnel and become part of the acceptance process prior to posting results?**

Required status: Acceptance

Completed Y/N ____

Notes: ** For computer access to field nuclear density testing HMA Lab Personnel would have to enter these tests into the computer system in a traceable format (query), along with material quantities and a specific material number designated for a field nuclear density test. Another option would be to require project inspection forces to submit field nuclear density tests along with a MAT-100 containing the pertinent information, which HMA Lab Personnel would review, code, and later post status of (information) in the computer.

Testing Needed for: Assurance Density Testing for HMA material placed in the field (Nuclear)

Example Quantity: 2000 Tons

Who tests and where? Lab Field inspectors at the project sites upon notification by the projects.

Frequency Required: 1 test per 20,000 tons, or 1 per project per year for projects with 4000 to 20,000 tons per year.

Tests Required: No tests are required for the example project, but if was over 4000 tons for the year, project would require 1 nuclear density assurance test

How to find out if testing is completed: This information is posted on the computer for Site Manager jobs with a project number and the material number 08041. Info should be available by query report. ****For CMR and Matdaps info must be obtained manually from the project files and reviewed for adequate coverage.**

Required status: Information for Site manager jobs.

Completed Y/N ____

Notes: **CMR and Matdaps could be entered in the same format as Site Manager making the test information and material quantities available by query as related to project and this material number. Otherwise, as stated in the previous column, info must be manually obtained and reviewed.

Borrow and Earth Embankment

Testing Needed for: Lab Density Test (proctor density)

Example Quantity: 25,000 cu.yd

Who tests and where? District Lab personnel at the District Labs.

Frequency Required: Each soil type/ each 50,000 cu.yd.

Tests Required: 1 lab density test would be required for this project. If the material type changed there would be additional tests in the system.

How to find out if testing is completed: Material and item quantities tested for lab density are posted in the computer system under the specific item for the project. Borrow items start with 207 and Earth Embankment items start with 202.

Required status: Information

Completed Y/N ____

Testing Needed for: Field Density Test (proctor density)

Example Quantity: 25,000 cu.yd

Who tests and where? Project Inspection Forces at the project sites.

Frequency Required: Each soil type/ each 5,000 cu.yd.

Tests Required: At least 5 sets of field nuclear density tests should be run by the project and forwarded to the Lab. If the material type changed additional tests would also be sent in.

How to find out if testing is completed: If received from the projects, copies of field density testing are filed in the basement project files. Currently, the information must be manually obtained and reviewed for verification of required field density testing.

Required status: Information

Completed Y/N ____

Testing Needed for: Field Density Test (Nuclear)

Example Quantity: 25,000 cu.yd

Who tests and where? Project Inspection Forces at the project sites.

Frequency Required: Each soil type/ each 5,000 cu.yd.

Tests Required: At least 5 sets of field nuclear density tests should be run by the project and forwarded to the Lab. If the material type changed additional tests would also be sent in.

How to find out if testing is completed: If received from the projects, copies of field density testing are filed in the basement project files. Currently, the information must be manually obtained and reviewed for verification of required field density testing.

Required status: Information

Completed Y/N ____

Notes: ** For computer access to field nuclear density testing District Lab personnel or density personnel would have to enter these tests into the computer system in a traceable format (query), along with item and material quantities and a specific material number designated for earth embankment/borrow field density test. Another option would be to require project inspection forces to submit field nuclear density tests along with a MAT-1 containing the pertinent information, which Lab personnel would review, code, and later post status of information in the computer.

Testing Needed for: Assurance Density Testing for borrow /earth embankment material placed in the field (Nuclear)

Example Quantity: 25,000 cu.yd

Who tests and where? Lab Field inspectors at the project sites upon notification by the projects.

Frequency Required: Each 50,000 cu.yd.

Tests Required: Because it is not specified currently that a minimum of one assurance test is required, the project may not have requested any assurance testing being of a quantity less than 50,000 cu.yd. **Minimum schedule should be revised to require at least one per project.

How to find out if testing is completed: **Currently, the information must be manually obtained and reviewed for verification of required field density testing.

Required status: Information

Completed Y/N ____

Notes: **These tests could be entered in the same format as nuclear density assurance testing for Site Manager, making the test information and material quantities available by query as related to project and specific material number for nuclear density assurance test for borrow/ earth embankment. A new material number would be required for this assurance test because the material number 08041 is not HMA or borrow/earth embankment specific. Otherwise, as stated in the previous column, info must be manually obtained from the basement project files and reviewed.

Concrete Pavement/Concrete Structures

Testing Needed for: Concrete, Compressive Strength

Example Quantity: 300 cu.yd

Who tests and where? Project Inspection Forces at the project sites.

Frequency Required: Each 75 cu. Yd., minimum of one set of cylinders each day. (Slump and air content tests are required each 50 cu.yd. minimum of one per day. Test info is generally included on the cylinder card and does not require review for Final Certification. Review of this data is done by the Concrete Section prior to posting the status of the strength specimens, which now represent item and material test quantities)

Tests Required: There should be at least four sets of strength specimens submitted for testing, including other applicable test data.

How to find out if testing is completed: This information is posted on the computer and a status and quantity will be posted for the specific item. If the total job item quantity is 300 cu.yd. of Concrete, then 300 cu.yd. of material quantity will have to be approved via cylinder breaks for adequate test coverage.

Required status: Acceptance

Completed Y/N ____

Testing Needed for: Assurance Test for Concrete, Compressive Strength Cylinders, (and Slump & Air Content)

Example Quantity: 300 cu.yd

Who tests and where? Lab Field inspectors at the project sites upon notification by the projects.

Frequency Required: 1 per 50 sets of cylinders, minimum of 2 per year per project.

Tests Required: Most projects would require at least 2 assurance tests annually according to the previous column, and possibly more as related to structures vs. pavement.

How to find out if testing is completed: Assurance tests for concrete specimens (and slump and air content) are posted on the computer with the acceptance testing quantities for the specific item and identifiable via CP sample numbers. These tests can also be identified by query of project numbers and the material number 8028 (District Lab CP).

Required status: Acceptance

Completed Y/N ____

Notes: Concrete specimen test status, including samples designated as CP's, would be posted as either acceptance or rejection, which is not applicable to the assurance test. The District Lab CP Form for the particular assurance test would be entered with a status of **Information**.

Processed Aggregate Base

Testing Needed for: Gradation Note: Review of other required testing as related to the specifications are the responsibility of the District Labs and are included in the posting status of the gradation.

Example Quantity: 15,000 tons

Who tests and where? District Lab personnel at the District Labs.

Frequency Required: Each new source and each 5,000 tons..

Tests Required: There should be at least three tests submitted by the projects and tested by the District Labs.

How to find out if testing is completed: This information is posted on the computer and a status and quantity will be posted for the specific item.

Required status: Acceptance

Completed Y/N ____

Testing Needed for: Gradation Assurance Test

Example Quantity: Each 30,000 tons, minimum of one per project.

Who tests and where? District Lab personnel witness sampling at the project sites upon notification by the projects, then tests are performed at the District Labs

Frequency Required: There should be at least one assurance test for gradation.

Tests Required: There should be at least three tests submitted by the projects and tested by the District Labs.

How to find out if testing is completed: Assurance tests for gradation are posted on the computer with the acceptance testing quantities for the specific item and identifiable via CP sample numbers. The split half of the sample, which is an in house test, can also identify project related assurance testing by query because tests are entered into the computer system with project and sample numbers via In house Code 8.

Required status: Information.

Completed Y/N ____

Notes: Gradation status, including samples designated as CP's, would be posted as either acceptance or rejection, which is not applicable to the assurance test. The District Lab split sample for the particular assurance test would be entered with a status of **Information.**

Testing Needed for: Lab Density Test (proctor density)

Example Quantity: 15,000 tons.

Who tests and where? Each new source and each 20,000 tons.

Frequency Required: 1 lab density test would be required for this project. If the material type/source changed there would also be additional tests in the system.

Tests Required: 1 lab density test would be required for this project. If the material type/source changed there would also be additional tests in the system.

How to find out if testing is completed: Material and item quantities tested for lab density are posted in the computer system under the item for the project, and are identifiable also by the status of Information posted for the item.

Required status: Information.

Completed Y/N ____

Testing Needed for: Field Density Test (Nuclear)

Example Quantity: 15,000 tons.

Who tests and where? Project Inspection Forces at the project sites.

Frequency Required: Each soil type / each 3,000 tons

Tests Required: At least 5 sets of field nuclear density tests should be run by the project and forwarded to the Lab. If the material type changed additional tests would also be sent in.

How to find out if testing is completed: If received from the projects, copies of field density testing are filed in the basement project files. Currently, the information must be manually obtained and reviewed for verification of required field density testing.

Required status: Information.

Completed Y/N ____

Notes: ** For computer access to field nuclear density testing District Lab personnel or density personnel would have to enter these tests into the computer system in a traceable format (query), along with item and material quantities and a specific material number designated for processed aggregate base field density test. Another option would be to require project inspection forces to submit field nuclear density tests along with a MAT-1 containing the pertinent information, which Lab personnel would review, code, and later post status of information in the computer.

Testing Needed for: Assurance Density Testing for Processed Aggregate Base material placed in the field (Nuclear)

Example Quantity: 15,000 tons.

Who tests and where? Lab Field inspectors at the project sites upon notification by the projects.

Frequency Required: One each 30,000 tons, minimum of one per project.

Tests Required: At least one assurance nuclear density test should be requested by the project and then performed by the Lab.

How to find out if testing is completed: **Currently, the information must be manually obtained and reviewed for verification of required field density assurance testing.

Required status: Information.

Completed Y/N ____

Notes: **These tests could be entered in the same format as HMA nuclear density assurance testing for Site Manager, making the test information and material quantities available by query as related to project and specific material number for nuclear density assurance test for processed aggregate base. A new material number would be required for this assurance test because the material number 08041 is not density assurance test specific. Otherwise, as stated in the previous column, info must be manually obtained from the basement project files and reviewed.

Subbase

Testing Needed for: Gradation Note: Review of other required testing as related to the specifications are the responsibility of the District Labs and are included in the posting status of the gradation.

Example Quantity: 15,000 cu.yd.

Who tests and where? District Lab personnel at the District Labs.

Frequency Required: Each new source and each 5,000 cu.yd.

Tests Required: There should be at least three tests submitted by the projects and tested by the District Labs.

How to find out if testing is completed: This information is posted on the computer and a status and quantity will be posted for the specific item.

Required status: Acceptance

Completed Y/N ____

Testing Needed for: Gradation - Assurance Test

Example Quantity: 15,000 cu.yd.

Who tests and where? District Lab personnel witness sampling at the project sites upon notification by the projects, then tests are performed at the District Labs.

Frequency Required: Each 50,000 cu.yd., minimum of one per project.

Tests Required: There should be at least one assurance test for gradation.

How to find out if testing is completed: Assurance tests for gradation are posted on the computer with the acceptance testing quantities for the specific item and identifiable via CP sample numbers. The split half of the sample, which is an in house test, can also identify project related assurance testing by query because tests are entered into the computer system with project and sample numbers via In house Code 8.

Required status: Information

Completed Y/N ____

Notes: Gradation status, including samples designated as CP's, would be posted as either acceptance or rejection, which is not applicable to the assurance test. The District Lab split sample for the particular assurance test would be entered with a status of **Information**.

Testing Needed for: Lab Density Test (proctor density)

Example Quantity: 15,000 cu.yd.

Who tests and where? District Lab personnel at the District Labs.

Frequency Required: Each new source and each 20,000 cu.yd.

Tests Required: 1 lab density test would be required for this project. If the material type/source changed there would also be additional tests in the system.

How to find out if testing is completed: Material and item quantities tested for lab density are posted in the computer system under the item for the project, and are identifiable also by the status of Information posted for the item.

Required status: Information

Completed Y/N ____

Testing Needed for: Field Density Test (Nuclear)

Example Quantity: 15,000 cu.yd.

Who tests and where? Project Inspection Forces at the project sites.

Frequency Required: Each soil type / each 3,000 cu.yd.

Tests Required: At least 5 sets of field nuclear density tests should be run by the project and forwarded to the Lab. If the material type changed additional tests would also be sent in.

How to find out if testing is completed: If received from the projects, copies of field density testing are filed in the basement project files. Currently, the information must be manually obtained and reviewed for verification of required field density testing.

Required status: Information

Completed Y/N ____

Notes: ** For computer access to field nuclear density testing District Lab personnel or density personnel would have to enter these tests into the computer system in a traceable format (query), along with item and material quantities and a specific material number designated for subbase field density test. Another option would be to require project inspection forces to submit field nuclear density tests along with a MAT-1 containing the pertinent information, which Lab personnel would review, code, and later post status of information in the computer.

Testing Needed for: Assurance Density Testing for Subbase material placed in the field (Nuclear)

Example Quantity: 15,000 cu.yd.

Who tests and where? Lab Field inspectors at the project sites upon notification by the projects.

Frequency Required: One each 30,000 cu.yd, minimum of one per project.

Tests Required: At least one assurance nuclear density test should be requested by the project and then performed by the Lab.

How to find out if testing is completed: **Currently, the information must be manually obtained and reviewed for verification of required field density testing.

Required status: Information

Completed Y/N ____

Notes: **These tests could be entered in the same format as HMA nuclear density assurance testing for Site Manager, making the test information and material quantities available by query as related to project and specific material number for nuclear density assurance test for Subbase. A new material number would be required for this assurance test because the material number 08041 is not density assurance test specific. Otherwise, as stated in the previous column, info must be manually obtained from the basement project files and reviewed.

Other Items

For all other items that do not require assurance testing, adequate test coverage is required and is traceable via the computer system (Sitemanager). Material quantities tested, accepted, and posted should be greater than or equal to the required item quantities used on the project.