



Connecticut DOT

Bureau of Engineering and Construction

Number: CD-2020-3

Date: June 17, 2020

## CONSTRUCTION DIRECTIVE

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Construction Administrator

### **Testing of In-Place Unbound Materials (Items under Sections 2.02, 2.03, 2.09, 2.12, 2.14, 2.16, 3.04, and 4.15)**

The July 2018 Supplements to the Department's *Standard Specifications* revised the above-noted Sections to require the Contractor to perform Quality Control (QC) density testing of in-place materials in a manner acceptable to the Engineer. An example of the QC requirement in the specifications is as follows:

“The dry density after compaction shall not be less than 95% of the maximum dry density for that soil when determined by the Contractor in accordance with AASHTO T 180 and measured in-place with ASTM D6938 or other methods approved by the Engineer. The Contractor shall perform in-place density testing at a sufficient frequency to ensure that the specified test results are continuously met. The Contractor shall submit complete field density testing and inspection records to the Engineer within 48 hours (excluding weekends and holidays) of the test in a manner acceptable to the Engineer.”

Use the following Guidelines for laboratory and field density testing (Acceptance and Assurance), as the Department-owned nuclear density gauges are no longer in service.

**For Contracts inspected by State personnel:**

**Acceptance Testing Procedure:**

	Standard Specifications issued <b>Prior to July 2018</b>	Standard Specifications issued <b>after July 2018</b>
1	Submit a MAT-100 for a laboratory moisture-density test (AASHTO T 180) and bagged soil samples to CTDOT District Lab.	The Contractor is to perform all density activities per specification. The Contractor shall obtain a laboratory moisture-density test (AASHTO T 180) from a private testing laboratory. If the test cannot be completed because the material is coarser than the method allows, the Contractor shall determine a target maximum density and optimum moisture content by use of a test strip or other method acceptable to the Engineer to establish density target.
2	Request a field density Acceptance test by email to <a href="mailto:DOT.DensityAssurance@ct.gov">DOT.DensityAssurance@ct.gov</a> to schedule on-call consultant. (*See Note after tables for additional requirements.)	For Acceptance Testing process the Contractor will perform all density tests. No density tests will be performed by the DOT.
3	Reports of the Acceptance field density testing performed by the on-call consultant will be emailed to the CTDOT inspector and filed with the Project records. A MAT-100 is not required for the field test.	Contractor laboratory and field density reports shall be submitted to the Project for conformance review. These reports shall be filed with Project records. A MAT-100 is not required.

**Assurance Testing Procedure:**

	Standard Specifications issued <b>Prior to July 2018</b>	Standard Specifications issued <b>after July 2018</b>
1	Submit a MAT-100 for a field density Assurance test.	
2	Request field density Assurance test by email to <a href="mailto:DOT.DensityAssurance@ct.gov">DOT.DensityAssurance@ct.gov</a> to schedule the Assurance test and attach MAT-100. (*See Note after tables for additional requirements.)	
3	The DMT will set up <b>two</b> on-call consultants to be on-Site at the same time for side-by-side Assurance testing.	The DMT will set up the on-call consultants to be on-Site. It is <u>necessary</u> for the Contractor's testing personnel be on-Site at the same time for side-by-side Assurance testing.
4	The MAT-100 will be assigned a status by DMT per the Assurance test report results.	

**For Contracts inspected by Consultant personnel or Municipal projects:**

**Acceptance Testing Procedure:**

	Standard Specifications issued <b>Prior to July 2018</b>	Standard Specifications issued <b>after July 2018</b>
1	Submit a MAT-100 for laboratory moisture-density test (AASHTO T 180) and bagged soil samples to CTDOT District Lab.	The Contractor is to perform all density activities per specification. The Contractor shall obtain a laboratory moisture-density test (AASHTO T 180) from a private testing laboratory. If the test cannot be completed because the material is coarser than the method allows, the Contractor shall determine a target maximum density and optimum moisture content by use of a test strip or other method acceptable to the Engineer to establish density target.
2	Project inspection staff will perform the Acceptance field density testing.	The Contractor is to perform all Acceptance field density testing.
3	Acceptance field density reports will be filed with the Project records. A MAT-100 is not required.	Contractor laboratory and field density reports shall be submitted to the Project for conformance review. These reports shall be filed with Project records. A MAT-100 is not required.

**Assurance Testing Procedure:**

	Standard Specifications issued <b>Prior to July 2018</b>	Standard Specifications issued <b>after July 2018</b>
1	Submit a MAT-100 for a field density Assurance test.	
2	Request field density Assurance test by email to <a href="mailto:DOT.DensityAssurance@ct.gov">DOT.DensityAssurance@ct.gov</a> to schedule the Assurance test and attach MAT-100. The DMT will set up the on-call consultants to be on-Site. It is <u>necessary</u> for the Project testing personnel be on-Site at the same time for side-by-side Assurance testing. (*See Note after tables for additional requirements.)	Project staff will perform the Assurance test with the Contractor.
3	The MAT-100 will be assigned a status by DMT per the Assurance test report results.	Email the MAT-100 and supporting field density Assurance test report(s) to <a href="mailto:DOT.DensityAssurance@ct.gov">DOT.DensityAssurance@ct.gov</a> and the DMT will assign a status per the Assurance test report results.

\*Note: All requests for Density testing must be made a minimum of 48 hours in advance to [DOT.DensityAssurance@ct.gov](mailto:DOT.DensityAssurance@ct.gov). The request must include the following:

Contract or Project number

Project staff contact information

Anticipated testing location(s)

Date(s) and time

Type(s) of material / Contract item(s)

Proctor Number (AASHTO T 180) or the need for an alternative method.

References:

Acceptance Testing Procedure: (The Minimum Schedule for Acceptance Testing (Chapter 8), in the [Quality Assurance \(QA\) Program for Materials](#))

Assurance Testing Procedure: (The Minimum Schedule for Assurance Testing (Chapter 9), in the [Quality Assurance \(QA\) Program for Materials](#))