MARYLAND STANDARD METHOD OF TEST

(MSMT)

Laboratory and Field Procedures Manual

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I. GENERAL

A. Introduction

The purpose of this manual is to outline policies, procedures and guidelines to assure the quality of materials and construction in all Maryland Department of Transportation - State Highway Administration (MDOT-SHA) projects.

This manual is published by the Office of Materials Technology (OMT) and contains the Maryland Standard Method of Test (MSMT) procedures for field and laboratory testing.

B. Materials Source

1. Submittals

Contractors submit proposed source of supply letters to OMT's Materials Management Division once a construction contract has been awarded. The letters list the awarded Contract number, project location, bid item number, and material(s) to be used in each bid item. The source for each of these materials shall be listed with the company name and address and the manufacturers' and/or fabricator's name and address. The approval of these sources means that the producer has the necessary facilities to produce acceptable material. It does not imply that the material is approved.

2. New Material Sources

The Administration will arrange to evaluate a proposed source that has not recently or never produced material for Administration projects. The Administration may take representative samples of the material being produced at the time of inspection to evaluate the production process and quality control.

3. Qualified Products List (QPL)

OMT and the Office of Traffic and Safety (OOTS) maintain a list of Qualified Materials used on Administration construction projects. Qualified materials are those which have undergone a prescribed procedure for submittal, testing, and qualification. Qualification does not imply that materials can be used without regard for established Quality Assurance testing and procedures.

4. Recycled Materials

Refer to Section 900.03 of the Standard Specifications.

C. Quality Assurance Program

1. Definition

Planned and systematic actions and processes necessary to ensure that a product or service will satisfy established requirements for quality.

2. **Sampling and Testing Locations.**

   a. **Off site:** This includes plants, manufacturing facilities, and supplier locations.

   b. **On site:** Project locations or approved Laboratory locations.

3. **Random Sample**

   A sample of material which is chosen by chance and the method of sampling is not biased by the sample taker. Every portion of a given quantity of material has an equal and independent chance of being chosen.

4. **Representative Samples**

   a. Definition

   A suitable cross-section of samples of materials which provide an accurate indicator of the materials performance when tested using specified procedures.

   b. Sampling and Testing Procedures

   Sampling and testing of a given material must be performed the same way each time so the test results can be properly compared with standard requirements. These requirements are normally outlined in AASHTO or ASTM Standards, this Manual or related documents.

   c. Size of Samples

   These are listed in Material Quality Assurance Processes manual, the ASTM Standards or the AASHTO Standards.

D. New Products or Processes

1. **Definition**

   Products or processes not previously used by the Administration and not covered by any current applicable Administration specification. These products may require submission to the New Products Committee for evaluation.

E. Quality Control

1. **Definition**

   All contractor/vendor operational techniques and activities performed to fulfill the Contract requirements.

2. **Verification**

   Verification of quality control includes sampling and testing performed to validate the quality of the product.

F. Acceptance

1. **Definition**

   All factors that comprise the Administration's determination of the quality of the product as specified in the Contract requirements. Verification and sampling and

testing will be used to validate the quality control sampling and testing if quality control sampling and testing is for material acceptance.

G. Sampling Frequency for Acceptance

Listings in the Material Quality Assurance Processes manual generally refer to projects where the quantity of material is large enough to justify multiple sampling. It is important to note that these should generally be viewed as minimum frequencies. Projects having only small quantities of certain materials require performance of a minimum of one acceptance sample and test, except as outlined in Appendix E of the Material Quality Assurance manual.

1. Definition

An audit of the QC/QA Technician's proficiency in performing tests in accordance with specification requirements and verification that the proper equipment for performing tests is available, calibrated, and in proper working order.

2. Frequency

Independent Assurance Audits (IAA) will be performed on a random basis by an Independent Assurance Auditing Technician using the System-Based approach. Audits are only used to assess the QC/QA Technician's proficiency in performing specified tests and verification of equipment used in performing those tests. IAA's are not used to accept or reject materials.

H. Material Certification

1. Definition

Refer to TC 1.03 of the Standard Specifications.

2. Verification of Material Certification.

a. Definition

A random process of sampling and testing to evaluate a manufacturer's/producer's material certificate of compliance.

b. Verification

Verification of certifications will be performed as specified in the Material Quality Assurance Processes manual. The frequencies shown in the manual are minimums and OMT may perform verification at any time.

II. Maryland Standard Method of Test (MSMT)

Maryland Standard Method of Test Index

III. Materials Management Division

Material Quality Assurance Processes, Details and Frequencies