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**SECTION 270.00 MINIMUM TESTING REQUIREMENTS.** The following tables outline the minimum testing and acceptance (MTR) requirements for materials incorporated into Department construction projects and are a part of the ITD Quality Assurance (QA) Program. The tables apply to the sampling and testing of material characteristics not specified as accepted by statistical procedures. For material characteristics accepted by statistical procedures, the acceptance requirements are included in Table 106.03-1 of the Quality Assurance Special Provision. On projects containing the QA Special Provision (QASP), the minimum testing requirements outlined here apply for all material characteristics not included in Table 106.03-1 of the QASP.

The requirements outlined in this section are the minimum acceptance requirements for materials used in standard applications and paid for under standard bid items. For Special Provision items, material used in non-standard, non-roadway or temporary applications or small quantities of materials alternative acceptance requirements will be determined here or as specified in the contract documents.

Minimum testing frequencies are included in the tables. These frequencies may be reduced by change order with the concurrence of the District Materials Engineer and Construction/Materials Engineer for good quality materials with a history of uniform test results. The Engineer may elect to increase testing frequency at any time. Testing frequency should be increased when accepting material from newly developed sources or those with a wide range of results.

**270.01 Content of the MTR Tables.** The MTR tables are organized by Standard Specification Section. For each material listed, the testing and acceptance requirements are included. The tables also include Department specification references and test methods. The tables indicate who is responsible for sampling and testing for each material. The Required Report Form Number columns include forms related to materials acceptance that are the responsibility of the project personnel. Some reports generated as a result of Central Laboratory testing are included and indicated as a Lab Report.

The Minimum Required Frequency columns list the maximum quantity, and fractions of a quantity, of material that can be represented by a single test. For example, a frequency of "Each 500 CY" for gradation indicates that there must be one gradation test located within each 500 cubic yards of material accepted. Testing for each item and material must be distributed throughout the project to represent the total quantity of material accepted.

There are three types of testing listed in the Purpose of Testing columns: Acceptance, Verification, and Independent Assurance:

Acceptance of material is by one or a combination of the following as indicated in the MTR tables:

- acceptance testing performed by the Department.
- certification.
- certification with quality control or other test results provided by the supplier or manufacturer.

- pre-testing or prequalification by the Department.
- inspection by the Department.
- laboratory testing by the Department.

Pre-testing or prequalification, typically performed by the Central Laboratory and is used to verify manufacturer's certifications.

Independent Assurance requirements are also included in the tables. The Independent Assurance Program is described in detail in Section 300.00.

The Remarks, Notes, or Additional Directions columns of the tables specify the location of acceptance, references to sections of the manual, small quantity exceptions, and other notes and remarks as applicable.

**270.02 Source Approval.** Materials source approval requirements and associated quality testing (e.g., Idaho Degradation, LA Abrasion, Ethylene Glycol testing) are not included in the tables. All fill and aggregate materials imported from off the project must be obtained from approved materials sources. Section 265.00 provides an overview of the materials source approval process.

**270.03 Obviously Defective Material.** Based on inspection and without regard for testing frequency, the Engineer may isolate and reject obviously defective material.

**270.04 Acceptance of Small Quantities.** The Department may accept small quantities of certain materials without sampling and testing. The Engineer may elect to sample and test small quantities at any time. The following materials are not eligible for small quantity acceptance:

- Materials that are accepted by manufacturer's certification. Manufacturer's certifications must be provided for all quantities of material accepted by certification.
- Concrete with a specified strength of greater than 3,000 psi.
- Paving on the Interstate, with quantities above 100 ton, excluding median crossovers

Material can be accepted as a small quantity if the estimated plan quantity is less than the minimum testing frequency. The following minimum requirements must be met and documented when using small quantity acceptance:

- Aggregates must be obtained from approved materials sources.
- A mix design must be submitted, reviewed, and approved before use for plant mix pavement and concrete items.
- Visual inspection of the materials during installation, placement, or compaction.

- For small quantities of traveled way paving, intersection paving, or paving at intersection radiuses, cores are required as specified in the Standard Specifications 405.03.L for in-place density acceptance. Small quantity pavement applications that do not require cores for in-place density acceptance include small patches, utility repairs, and pavement placed outside the traveled way.

The basis for acceptance of the material must be documented. Documentation will be by file memo and will be included in the daily diary or will be on field or test reports. A brief statement summarizing the basis for acceptance must be included in the Materials Summary Report submitted at the end of the project. Examples of basis for small quantity acceptance are as follows:

- Satisfactory test results on the same material from a recent or concurrent project.
- Visual inspection of the materials and installation.
- Material certification (ITD-851) with supporting QC or manufacturer's test results where applicable.
- The use of sufficient compaction effort and equipment, as determined by the Engineer.

Sampling and laboratory verification testing may be waived for the following items when the quantity of material is equal to or less than that indicated below:

**Table 270.04-1: Items That May be Waived**

Item	Quantity
Asphalt (Emulsified)	2000 gallons; (8 tons)
Asphalt (PG Binder)	22 Tons
Cement, Lime, Fly ash	40 cubic yards of concrete placed
Geotextiles	600 square yards

**270.05 Non-standard Acceptance of Materials.** Acceptance requirements will be determined on a case-by-case basis for the following, regardless of the quantity, and identified on the ITD-862 form:

- Material not permanently incorporated into the project (e.g., temporary detours).
- When sampling and testing per the standard requirements is not applicable due to the application or use of the material.
- When sampling and testing per the standard requirements is not applicable due to the sequence of placement.

Some examples of non-standard applications are:

- Driveways
- Field approaches
- Mailbox turnouts
- Asphaltic ditches and slopes
- Material behind guardrail and for guardrail terminals
- Asphaltic sidewalk and curb

The Engineer, in consultation with the District Materials Engineer, will develop a written acceptance plan that identifies the non-standard acceptance criteria before incorporating the material.

For numerous fractions of an item, such as short pipe extensions, where the required minimum frequency of testing is not practical, a written acceptance plan can be developed to replace some of the testing with visual inspection. The plan must be approved before incorporating the material.

The minimum requirements listed for small quantities (Section 270.04) must be met (i.e. approved sources, mix designs approval, inspection and cores for mainline and intersection paving). The documentation requirements for materials acceptance will be the same as those outlined for small quantity acceptance.

**270.06 Special Provision Items.** A Special Provision pay item may include multiple different materials, all of which require acceptance. When the materials acceptance requirements for a special provision item are not included in the contract, the acceptance requirements for each material incorporated will be determined based on the following criteria:

- When the material is included in the MTR tables and is being used in a standard application, the MTR table acceptance requirements will be used.
- When the material is not included in the MTR tables or is not being used in a standard application, acceptance requirements will be determined by the Engineer, in consultation with the District Materials Engineer.
- When the material is required by the contract to meet a given specification, such as an ASTM or AASHTO specification, at minimum, acceptance of material will require a manufacturer's certification in accordance with Section 230.00.

A brief statement summarizing the basis for acceptance must be included in the Materials Summary Report submitted at the end of the project.

**270.07 Change Order Items.** A Change Order can include material to be paid for under standard pay items or can establish nonstandard pay items. For standard pay items, the MTR tables will apply. Acceptance requirements for nonstandard items will be determined based on the following criteria:

- When the material is included in the MTR tables and is being used in a standard application, the MTR table acceptance requirements will be used. This would include a change order that is paid by lump sum and includes materials covered in the MTR tables. When the material is not included in the MTR tables or is not being used in a standard application, acceptance requirements will be determined by the Engineer, in consultation with the District Materials Engineer.
- When the material is required by the change order or by reference to meet a given specification, such as an ASTM or AASHTO specification, at minimum, acceptance of material will require a manufacturer's certification in accordance with Section 230.00.

A brief statement summarizing the basis for acceptance must be included in the Materials Summary Report submitted at the end of the project.

**270.08 MASH or NCHRP-350 Requirements.** Manual for Assessing Safety Hardware (MASH) or National Cooperative Highway Research Program (NCHRP) Report 350 recommended procedures for conducting vehicle crash tests and in-service evaluation of roadside safety features. The features covered by these procedures are grouped into the four categories defined below:

- **Longitudinal Barrier:** A device whose primary functions are to prevent vehicular penetration and to safely redirect an errant vehicle away from a roadside or median hazard. The longitudinal barriers include roadside barriers, median barriers, bridge rails, guardrails, transitions, and terminals.
- **Crash Cushion and Truck-Mounted Attenuators (TMA):** A device designed primarily to safely stop a vehicle within a relatively short distance.
- **Support Structure:** A system used to support sign panels, chevron panels, luminaires, utility lines, mailboxes, or emergency call boxes. The system includes the post(s), pole(s), structural elements, foundation, breakaway mechanism if used, and accompanying hardware used to support the given feature.
- **Work Zone Traffic Control Device:** A device used in a work zone to regulate, warn, and guide road users and advise them to traverse a section of highway or street in the proper manner. Work zone traffic control devices include signs, plastic drums, lights, cones, barricades, chevron panels, any accompanying support systems, and any other such device(s) commonly exposed to traffic that may pose a hazard to occupants of a vehicle and/or to work zone personnel.



**These items, if used or permanently added to the project, must have certifications (ITD 851) from the Manufacturer meeting MASH or NCHRP-350 requirements.**

**For Contracts with a letting date after the dates below, only safety hardware evaluated using the 2016 edition of MASH criteria will be allowed for new permanent installations and full replacements:**

- **December 31, 2017: w-beam barriers and cast-in-place concrete barriers**
- **June 30, 2018: w-beam terminals**
- **December 31, 2018: cable barriers, cable barrier terminals, and crash cushions**
- **December 31, 2019: bridge rails, transitions, all other longitudinal barriers, all other terminals, sign supports, and all other breakaway hardware**

**270.09 Minimum Testing Requirements Tables.** The following tables contain the MTRs for each of the Standard Specification sections:

**Table 270.09: MTR Table Sections**

MTR Table Section	Standard Specification Section
270.10	200 Earthwork
270.20	300 Bases
270.30	400 Surface Courses and Bituminous Pavement
270.40	409 Portland Cement
270.50	500 Structures
270.60	600 Incidental Construction

See Section 270.01 for content of the tables.