Alaska Department of Transportation and Public Facilities

Alaska Test Methods Manual

May 19, 2025

Preface

This manual provides a compilation of approved Test Methods, Forms and Standard Practices to be used to test materials on Alaska Department of Transportation & Public Facilities (DOT&PF) projects.

Most of these testing procedures follow two nationally recognized standards; American Society for Testing and Materials (ASTM), and the American Association of State Highway and Transportation Officials (AASHTO). Modifications to these standards are in recognition of the necessity of adjusting test requirements to meet local demands and/or naturally occurring materials.

This manual also includes Field Operating Procedures (FOPs) for existing AASHTO test methods. These procedures are developed and maintained by the Western Alliance for Quality in Transportation Construction (WAQTC). The FOPs select options and provide concise directions in the use of the AASHTO methods.

In addition, this manual includes WAQTC test methods that are not covered by AASHTO or ASTM. These methods have been submitted to AASHTO for adoption. Other procedures were developed by the Alaska DOT&PF to address specific needs in the State of Alaska that are not adequately covered in AASHTO, ASTM or WAQTC.

The Appendix contains standardized practices to be used by all DOT&PF regional and/or field laboratories including consultant fixed and field laboratories.

The test methods (including referenced test methods) in this manual refer to the most recent issue in effect on the date of the test, including interim publications or errata; unless the test methods (including referenced test methods) are specified by year or date.

Submit suggested additions, deletions or revisions to these procedures to the Statewide Materials Engineer and the Statewide Construction Standards Engineer.

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Acknowledgement

Design and Engineering Services, Statewide Materials is indebted to the following organizations for use of, or reference to, portions of their publications.

The American Association of State Highway and Transportation Officials
The American Society for Testing and Materials
The Western Alliance for Quality Transportation Construction (WAQTC)

Appreciation is also extended to Laboratory and Construction personnel from each Region for their dedication, participation and patience in seeing this task to completion.

Sixteenth Edition Printing, 2025

List of Revisions for this edition:

Global - "Family of Curves" renamed "Soil moisture-density relations" and "family" renamed "group."

Global – *ATM 216 WAQTC FOP for AASHTO R 75 Developing a Family of Curves* is renamed to *ATM 216 WAQTC FOP for AASHTO R 75 Developing Moisture-Density Relations*

Note: In 2024, AASHTO released updated test Methods for
Earthwork (200): R 75
Concrete (500): T 121, T 152

Section 200

ATM 202 **–** Addition and clarifications of soil sample lid requirements.

ATM 204- Grooving tool photo added. Weighing containers clarified. Table 1 relocated. Dispute resolution added.

ATM 215 – "family of curves" is renamed "soil moisture-density relations." Calculations section Updated.

ATM 216 – Renamed to *ATM 216 WAQTC FOP for AASHTO R 75* as *Developing Moisture -Density Relations*

Section 300

ATM 303 – Additional clarification of use of "tarp." "Method B Sectoring" separated from "Quartering" and direction expanded.

ATM 304 – "Utensil" and "Wetting Agent" added to Apparatus and Procedure. Drying procedure clarified as "FOP for AASHTO T255."

ATM 307 - #4 sieve added to apparatus section meeting the requirements of the FOP for AASHTO T 27/T 11.

ATM 310 – ATM 202 replaced with AASHTO T255 and AASHTO T265. Serial number for LWD and compactor make and model removed from report requirements. Method seperated to create ATM 311.

ATM 311- ATM 310 separated to create new test method, "Obtaining Percent Deflection of Embankment Materials using a Light Weight Deflectometer (LWD)

Section 400

ATM 402 – "Haul Unit" renamed to "Transport Unit." Minor editorial revisions.

ATM 404 - "Quartering " and Sectoring" separated and clarified.

ATM 406 - "Sampling" changed to "Sample Preparation." Calculations section modified.

ATM 408 – Added "Utensil" to Apparatus and Procedure.

ATM 409 - Added direction to "record the standardized container mass." Note 3 added below note 2. Clarification of suspension apparatus added.

ATM 410 – Added "Potable Water" to Apparatus and Procedure. "Sample" changed to "Specimen."

ATM 411 – Added "Direct transmission shall be used on crushed asphalt base materials. Procedure step 4 allows two 1-minute tests pending engineers approval." to Guidance Page.

ATM 412 – 5. Procedure step 5 changed to "(Direct transmission shall be used on crushed asphalt products)."

ATM 415 – Deleted pressure and angle check under Compaction Procedure step 7.

Section 500

ATM 501 – Added direction to remix the sample.

ATM 503 – Added "wet sieving" for aggregate exceeding 1 ½ inch to Procedure, Step 1.

ATM 504 – Updated Example and Calculations sections.

ATM 505 - Added "wet sieving" for aggregate exceeding 1 ½ inch to Procedure, Step 1. Note 1 added as a check for meter leakage after pressure determined. Added note to Guidance page for Annex A, tubing "sock."

ATM 506 – Cylinder casting rewritten, separating 4" X 8" cylinders and 6" X 12" cylinders

ATM 530 – Editorial revision to method steps. Directions for measuring shrinkage added. Updated report sheets and worksheets.

Table of Contents

Section 200 Earthwork

Section 300 Bases and Aggregates

**This Test Method has specific guidelines for the use of the noted test method by the State of Alaska DOT&PF.*

Section 400 Asphalt

**This Test Method has specific guidelines for the use of the noted test method by the State of Alaska DOT&PF.*

Section 500 Concrete

Section 600 Metal

Appendix 1 Standard Practices

**This Test Method has specific guidelines for the use of the noted test method by the State of Alaska DOT&PF.*