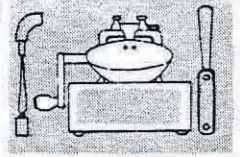
**ARIZONA DEPARTMENT OF TRANSPORTATION * MATERIALS SERVICES**

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**CHANGE LETTER**

MATERIALS TESTING MANUAL	CHANGE LETTER NO. 7
SUBJECT: Title Page, Table of Contents, ARIZ. Test Methods 201, 202, 203, 205a, 209, 212b, 213a, 307a, 308a, 310, 502, 503, 504, 505, 506, 507, 508, 509, 703a, 704, 706a, 709, 710a, 714a, 800a, 803, 804, 802d, 805a, 806b, 812, 813a, 814, 815, 817, 819. AASHTO Test Methods T 11, 19, 27, 30, 43, 44, 55, 105, 118, 135, 136, 183, 227, 228, 238, 239, 246, 247, 248. ASTM Test Methods D 2007, 3042.	DATE OF ISSUE: July 1980 EFFECTIVE DATE: July 1980

SUMMARYREVISIONS TO SECTION 200

1. The following AASHTO Test Methods replace ARIZ 201-Dry Preparation and the Sieving of Coarse Graded Soils and Aggregates, ARIZ 202-Amount of Material Finer than No. 200 Sieve in Soils and Aggregates, and ARIZ 203-Sieving of Fine Graded Soils and Aggregates:
T 11 - Amount of Material Finer than 0.075 mm (No. 200) Sieve in Aggregate.
T 27 - Sieve Analysis of Fine and Coarse Aggregate.
2. ARIZ 205a-Composite Grading, revised by changing Scope.
3. ARIZ 209-Moisture Content of Soil and Aggregates, replaced by AASHTO T 255-Total Moisture Content of Aggregate by Drying.
4. ARIZ 212b-Gradation and Percentage of Crushed Particles in Cover Material or Mineral Aggregate, revised all sections.
5. ARIZ 213a-Specific Gravity and Absorption of Fine Mineral Aggregate for Asphaltic Concrete, shall be the same as AASHTO T 84-Specific Gravity and Absorption of Fine Aggregate, except Section 4.
6. The following AASHTO Test Methods are added:
T 19-Unit Weight of Aggregate.
T 30-Mechanical Analysis of Extracted Aggregate.
T 135-Wetting-and-Drying Test of Compacted Soil Cement Mixtures.
T 136-Freezing-and-Thawing Tests of Compacted Soil Cement Mixtures.
T 220-Determination of the Strength of Soil-Lime Mixtures.
T 238-Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).
T 239-Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
T 248-Reducing Samples of Aggregates to Testing Size.
7. The following ASTM Test Method is added:
D 3042-Insoluble Residue in Carbonate Aggregates.

REVISIONS TO SECTION 300

1. Removed AASHTO T 183-Ball Penetration in Fresh Portland Cement Concrete. (This test is no longer included in the AASHTO Methods of Testing.)
2. ARIZ 307a-Fabrication of Pneumatically Placed Mortar Cylinders. Revised by adding (An Arizona Method), and changing Section 2(a).
3. ARIZ 308a-Method of Adjusting Concrete Mixes for Variation in Moisture Content. Revised by adding (An Arizona Method), and changing all sections.
4. The following new Arizona Test Method is added:
ARIZ 310-Measuring Texture Depth of Portland Cement Concrete with Metal Tine Finish.

REVISIONS TO SECTION 500

1. The following new Arizona Test Methods are added:
ARIZ 502-Percentage of Uncoated Particles Using Asphalt Emulsions.
ARIZ 503-Anti-Stripping Agent in Asphalt Cement (Sand Test).
ARIZ 504-Vacuum Recovery of Asphalt Emulsion Residue.
ARIZ 505-Asphalt Rejuvenating Agent Residue Insoluble in Petroleum Ether. This replaces ARIZ 709-Percent of Asphalt Rejuvenating Agent Residue Insoluble in Paraffin Naphtha.
ARIZ 506-Anti-Stripping Agent in Asphalt Cement (Color Test). This replaces ARIZ 710a-Determination of Anti-Stripping Agent in Asphalt.
ARIZ 507-Heat Stability Test for Anti-Stripping Agents.
ARIZ 508-Viscosity of Emulsified Asphalt by Zahn Viscometer.
ARIZ 509-Rapid Determination of Asphaltenes and Chemical Reactivity of Asphalts.
2. Removed AASHTO T 43-Specific Gravity of Bituminous Materials. (This test is no longer included in the AASHTO Methods of Testing.)
3. The following AASHTO Test Methods are added:
T 44-Solubility of Bituminous Materials in Organic Solvents
T 55-Water in Petroleum Products and Bituminous Material by Distillation.
T 227-Density, Specific Gravity or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method.
T 228-Specific Gravity of Semi-Solid Bituminous Materials.
4. The following ASTM Test Method is added:
D 2007-Characteristic Groups in Rubber Extender and Processing Oils by the Clay-Gel Adsorption Chromatographic Method.

REVISIONS TO SECTION 600

1. The following AASHTO Test Method is added:
T 105-Chemical Analysis of Hydraulic Cement.

REVISIONS TO SECTION 700

1. ARIZ 703a-Lime Determination of Lime Treated Aggregate. This test is deleted.
2. ARIZ 704-Volumetric Determination of Calcium Oxide Content in Hydraulic Cements and Concrete. This test is deleted.
3. ARIZ 706a-Dynamic Hardness of Metallic Materials by Shore Scleroscope. Revised by adding (An Arizona Method).
4. ARIZ 709-Percent of Asphalt Rejuvenating Agent Residue Insoluble in Paraffin Naphtha. Replaced by ARIZ 505-Asphalt Rejuvenating Agent Residue Insoluble in Petroleum Ether.
5. ARIZ 710a-Determination of Anti-Stripping Agent in Asphalt. Replaced by ARIZ 506-Anti-Stripping Agent in Asphalt Cement (Color Test).
6. ARIZ 714a-Sieving of Granulated Rubber. Revised by adding (An Arizona Method) and changing Section 5.
7. Removed AASHTO T 118-Free Bend Test for Ductility of Welds. (This test is no longer included in the AASHTO Methods of Testing.)

REVISIONS TO SECTION 800

1. The following AASHTO Test Methods replace ARIZ 800a-Method of Preparing Specimens for Asphaltic Concrete Design, ARIZ 803-Stability of Bituminous Mixtures by Hveem Stabilometer, and ARIZ 804-Cohesimeter Test for Bituminous Mixtures:
 - T 246-Resistance to Deformation and Cohesion of Bituminous Mixtures by Means of Hveem Apparatus.
 - T 247-Preparation of Test Specimens of Bituminous Mixtures by Means of California Kneading Compactor.
2. ARIZ 802d-Effect of Water on Cohesion of Compacted, Treated and Untreated Bituminous Mixtures. Revised by changing Scope, Sections 2(a),(b),(e), Note 1, Table I, Notes 2 and 3, Sections 3(a),(b),(d),(e), 4(a),(c), 5(a),(c), 7(b) and deleting Table II and Note 4.
3. ARIZ 805a-Centrifuge Kerosene Equivalent of Aggregate Including K-Factor. Revised by changing Sections 2(b),(h), Section 3(c), Section 4, Section 5(f), Section 6, Section 9(a), Section 10(c), Sections 11, 12, 13, Figures 4, 7, 8, Tables I and II and deleting Section 8(d).
4. ARIZ 806b-Maximum Theoretical Specific Gravity of Bituminous Paving Mixtures (Rice Test). Revised by changing Sections 2(c),(d),(e),(f), Section 3, Sections 4(a),(b),(d), Sections 5(a) and Note, 5(b) and Note, Sections 6, 7, 8 and 9.
5. ARIZ 812-Specific Gravity and Density of Bituminous Mixtures Compacted by the Hveem Method. This test is deleted.
6. ARIZ 813a-Density and Control of Portland Cement Concrete Mixtures. Revised by changing Sections 1, 2(b) and 3(a).
7. The following new Arizona Test Methods are added:
 - ARIZ 814-Design and Density of Asphaltic Concrete Friction Course.
 - ARIZ 815-Resistance to Plastic Flow of Bituminous Mixtures using Marshall Apparatus. (This test is the same as AASHTO T 245, except Section 3.5.2)

7. (Continued)

- ARIZ 817-Procedure for Determining the Optimum Bitumen Content (O.B.C.)
- ARIZ 819-Design of Exposed Aggregate Seal Coats.

DELETED TEST METHODS

The following test methods are obsolete, and should be extracted from the manual.

ARIZ 201, 202, 203, 209, 703a, 704, 709, 710a, 800a, 803, 804 and 812.

Attachments: Title Page, Table of Contents, ARIZ Test Methods 205a, 212b, 213a, 307a, 308a, 310, 502, 503, 504, 505, 506, 507, 508, 509, 706a, 714a, 802d, 805a, 806b, 813a, 814, 815, 817, 819, Cover Sheets for Sections 200, 300, 500, 600, 700 and 800.



G. J. Allen
Engineer of Materials

Attachments