

Independent Assurance – Verification Investigations

- QA Program Section VI – QC/QA Product Specific Testing Plan
 - Investigation Criteria
- IA Parameters
- Product Specific IA & Verification
- Troubleshooting
- Forms 734-5232 & 734-4040

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QA Program Section VI – QC/QA Product Specific Testing Plan (pp. 26-27 of 2021 MFTP)

- Contractor - Quality Control (QC)
- Quality Assurance (QA) – Verification Testing – Does it Meet Spec?
- QA/QC – Independent Assurance – How Does Testing Compare
 - IA Parameters – (page 28 of 2021 QA Program – Section 2 MFTP – see tab)
- ODOT uses same samples for IA & Verification Testing (in many cases)
- 3 Requirements that must be satisfied...if not, Investigation & Reject or 00150.25 (Verified, IA Check & IA/Ver Compares to On-going QC ok)



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Investigation Criteria

- Establish reasonable cause of discrepancy
- Use Appendix C (Troubleshooting Guide, pp. 49-56) of the QA Program for product and test specific troubleshooting recommendations)
- Use resources (Region Sr. QAC, State QAE & Sr. QAE & Technical Resources – e.g. Pavement Services & Structure Services)
- Forms 734-5232 & 734-4040



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Product Specific QC/IA/Verification

- Following IA Tab (pp. 29 – 45)
- QC: General Testing (4D-Tests & Frequencies), Back-up Sample Sizes, QLs (if applicable), Reporting Timelines, et cetera
- QA: Verification Testing (4D)
- IA: QA/QC Certified Techs & Labs; IA Splits & Reporting Timelines
- RE/PM Office will investigate IA Discrepancies & Verification Failures



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Product Specific QC/IA/Verification

- General – Aggregate Production (pp 29-30) – Agg. Compliance (4A)
 - Referenced for most materials with Aggregate Constituents (e.g. Agg. Base, PCC, ACP...)
- Earthwork (00330)
 - Establishing Max Densities (p. 31)
 - Compaction (p. 32)
- Concrete (Covers Concrete in many Spec Sections from 00440 to 00921)
 - Verification on Strength Only (p. 34)
 - IA on Plastic Properties per 00540.16 & 02001.50(b) (p. 35)



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Product Specific QC/IA/Verification

- Aggregate Base, Subbase & Shoulders (00641)
 - Establishing Max Densities (p. 36)
 - Aggregate Mixture (p. 37)
 - Compaction – includes certified nuclear gauges (p. 38)
- Emulsified Asphalt Products/Materials (Multiple Specs 00710 – 00730)
 - Aggregate Production (p. 39)
 - Emulsified Asphalt (p. 39)
- Emulsified Asphalt Concrete Pavement (00735) (p. 40-41)



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Product Specific QC/IA/Verification

- ACP (Statistical Acceptance) (00745)
 - Aggregate Production (See Page 29)
 - Mixture Production (p. 42-43)
 - QC – 20# back-ups; Plant monitoring
 - Compaction (p. 44-45)
 - QC – Control Strips, Notification, Mix temps, Lot Changes, Core Correlations
 - Verification – No IA Parameter, QA Pass/Fail
 - IA – Certified Techs and Gauges (ODOT TM 304 annually & as region SQAC directed)
 - Failing Compaction Guidelines (p. 45) for both QC & QA; Third-party cores; Price Adjustments (StatSpec or Form 734-3946 – Lot Isolation)



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Appendix C – Troubleshooting Guide

- General (p. 49)
- Aggregate Testing (p. 49-50)
 - Gradation (AASHTO T 27 & T27/11)
 - Wood Waste Test (ODOT TM 225)
 - Fracture Test (AASHTO T 335)
 - Flat & Elongated Test (ODOT TM 229)
 - Sand Equivalent Test (AASHTO T 176)



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Appendix C – Troubleshooting Guide

- Soil/Aggregate Relative Maximum Density & Optimum Moisture (AASHTO T 99, Methods A & D and ODOT TM 223) (p. 50-51)
 - Coarse Aggregate Bulk Specific Gravity (AASHTO T 85) (p. 51)
- Compaction of Soils & Processed Aggregate (AASHTO T 310 w/ T 99, T 255/265 (or T 217) & T 85 and T 272 & R 75 (Soils) or ODOT TM 223 (Aggregate Base) (p. 51)



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Appendix C – Troubleshooting Guide

- ACP Mixture Testing (p. 52)
 - Ignition Oven – AC Content Test (AASHTO T 308)
 - Rice Gravity Testing (AASHTO T 209)
 - Bulk Gravity Testing (AASHTO T 166)
- ACP Density Testing (AASHTO T 355) (p. 53-54)
 - QC Best Practices – Daily Concrete Ref. Site & Standard Counts
 - Project Manager Checks
 - QA – Gauge Checks & re-Calibrations and Core Correlations, assist with investigations



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Appendix C – Troubleshooting Guide

- Plastic Concrete Testing (p. 55-56)
 - General – Sample Collection & Splits, Equipment, Etc.
 - Slump (AASHTO T 119)
 - Air Content (AASHTO T 152)
 - Temperature (AASHTO T 309)
 - Unit Weight (AASHTO T 121)



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Investigation Examples



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