

# UFGS 32 12 15.13 PROPOSED/ANTICIPATED REVISIONS

2024 Annual DoD/FAA and  
Industry Review Meeting

Airfield Asphalt User/Producer  
Group

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# SUBMITTALS

## SD-01 Preconstruction Submittals

Equipment; G[, [\_\_\_\_]]

Airfield Asphalt Quality Control Plan; G[, [\_\_\_\_]]

## SD-02 Shop Drawings

Placement Plan; G[, [\_\_\_\_]]

Lighting Plan; G[, [\_\_\_\_]]

Diamond Grinding Plan; G[, [\_\_\_\_]]

## SD-03 Product Data

Mix Design; G[, [\_\_\_\_]]

## SD-04 Samples

Aggregates

Asphalt Binder

Warm-mix Additive

## SD-06 Test Reports

QC Monitoring

Pavement Lots; G[, [\_\_\_\_]]

Test Section; G[, [\_\_\_\_]]

Aggregate Properties During Production; G[, [\_\_\_\_]]

## SD-07 Certificates

Laboratory Accreditation And Validation; G[, [\_\_\_\_]]

Warm-mix Additive

Airfield Asphalt Pavement QC Manager

Airfield Asphalt Pavement Inspector

Airfield Asphalt Pavement Laboratory Technician

## SD-11 Closeout Submittals

Survey CAD Files; G[, [\_\_\_\_]]

 = New Submittal Item

 = Revised Submittal Item Name



# AIRFIELD ASPHALT CERTIFICATION PROGRAM

Reference Section 01 45 00 QUALITY CONTROL for Contractor personnel qualification requirements along with the information included below. [The Airfield Asphalt Pavement QC Manager is a separate person and is in addition to the QC Manager identified in Section 01 45 00 QUALITY CONTROL. The Airfield Asphalt Pavement QC Manager will report to and assist the project QC Manager.] Submit certifications for Contractor Quality Control Staff in the following areas:

- a. **Airfield Asphalt Pavement QC Manager<sup>(1)</sup>**: The **airfield asphalt pavement QC manager (AAPQCM)** will oversee all QC testing and inspection, review asphalt pavement transmittals prior to submission to the Government, be responsible for making mix design adjustments, and in charge of all other activities related to performance **as required in this section**. The **AAPQCM** will also ensure that daily reports and necessary transmittals arrive for Government review as specified.
- b. **Airfield Asphalt Pavement Inspector<sup>(1)</sup>**: The **airfield asphalt pavement inspector (AAPI)** will be available on the project during all paving operations. The Inspector is responsible for identifying observed paving issues and ensuring these issues are addressed by the Contractor Quality Control staff.
- c. **Airfield Asphalt Pavement Laboratory Technician<sup>(1)</sup>**: The **airfield asphalt pavement laboratory technician (AAPLT)** will be responsible for conducting all necessary laboratory tests. **If the personnel responsible for the asphalt mix design is separate from the laboratory technician performing acceptance testing, both the asphalt mix designer and acceptance testing laboratory technician will be responsible for obtaining the certification.**



Clarified intent to have the asphalt mix designer AND acceptance laboratory technician be certified as AAPLT.



# ASPHALT ACCEPTANCE TESTING

Acceptance testing includes laboratory air voids, in-place density, longitudinal smoothness, and plan grade. Laboratory air voids and in-place density will be determined by the independent commercial laboratory. Determine smoothness by an independent commercial laboratory, or may be self-performed. Plan grade is to be determined by hiring a professional land surveyor licensed in the [state][region] the work is being performed.

Specification now requires an independent laboratory hired to perform ACCEPTANCE Testing. Separates ACCEPTANCE and QUALITY CONTROL.

[The Government will acquire an independent commercial laboratory that will perform laboratory air voids and in-place density determinations for this section. Plan grade and smoothness acceptance tests will be the responsibility of the Contractor in accordance with paragraph ACCEPTANCE.] [Acquire the services of an independent commercial laboratory to perform laboratory air voids and in-place density determinations. Determine plan grade and smoothness acceptance tests in accordance with paragraph ACCEPTANCE.]

Specification now provides agencies (and A-E's) to specify the option for the Government to hire the Acceptance testing laboratory (preferred option in Designer Note).



# INDEPENDENT COMMERCIAL LAB FOR INDIVIDUAL AGGREGATES

## 2.2.1 Individual Aggregates

### 2.2.1.1 Aggregate Bulk Specific Gravity and Absorption

Contract with an independent commercial laboratory to perform bulk specific gravity and absorption tested in accordance with ASTM C127 and ASTM C128. Perform two replicate tests on each coarse aggregate and each fine aggregate as follows. Report both values and use the average of the two replicates for each aggregate. For individual aggregates with 25 percent or less passing the No. 4 sieve, these aggregates shall be defined as coarse aggregates and tested in accordance with ASTM C127. For individual aggregates with 75 percent or more passing the No. 4 sieve, these aggregates are defined as fine aggregates and tested in accordance with ASTM C128. For individual aggregates with between 25 percent and 75 percent passing the No. 4 sieve, determine a composite specific gravity value, tested in accordance with ASTM C127 and ASTM C128. Wash fine aggregates prior to testing in accordance with ASTM C128 Appendix X1.



# TENSILE STRENGTH RATIO

(IMB), aggregate gradation and asphalt content. Test an additional portion of the sample to determine the TSR. Perform tensile strength ratio (TSR) testing on the plant mixed, laboratory compacted asphalt mixture in accordance with ASTM D4867/D4867M, except adjust the compactive effort to provide specimens with an air void content of 7 plus or minus 0.5 percent and achieve an initial degree of saturation between 70 and 80 percent prior to conditioning. [Use freeze/thaw conditioning in lieu of moisture conditioning per Note 6 of ASTM D4867/D4867M. If freeze/thaw conditioning is used, include that fact on the report.] Obtain four randomly selected

Sound Familiar?

AASHTO T 283





# MARSHALL HAMMER CORRELATION/CALIBRATION

accordance with ASTM D6926 using the hand held hammer for the Marshall Method. The mechanical Marshall hammer can be used only after JMF development and after correlation from hand-held (manual) Marshall hammer to mechanical Marshall hammer. For the correlation, using the mechanical Marshall hammer, compact triplicate specimens at five different blow counts (mix design number of blows, plus and minus 5 blows, plus and minus 10 blows). Graph a number of blows versus bulk specific gravity of the asphalt mixture ( $G_{mb}$ ) curve and determine the number of blows required to get the same  $G_{mb}$  obtained by the manual hammer used to develop the mix design. Prepare one set of laboratory compacted specimens for each sublot in

Revisions provide additional clarification for Marshall Hammer correlation procedures and documentation requirements.





# ASPHALT MIXTURE VERIFICATION



## [2.8 Asphalt Mixture Verification

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NOTE: It is recommended for projects where a single asphalt JMF quantity is estimated to exceed 27,000 metric tons 30,000 tons of an asphalt mixture, mix verification be performed. Mix verification is the responsibility of the Government. The Government project team will need to include the mix verification in the project budget. Reach out to the Corps of Engineers Transportation Systems Center (TSMCX), the Air Force Civil Engineer Center (AFCEC) pavement subject matter expert (SME), or the Naval Facilities Engineering Systems Command (NAVFAC) for additional guidance on mix verification. Include this paragraph if asphalt mixture verification will be performed by the Government.

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Sample individual aggregate materials in accordance with ASTM D75/D75M and provide enough material in respective proportions to produce 90 kg 200 pounds 181 kg 400 pounds of blended mixture. Sample 20 L 5 gallon of asphalt binder in accordance with ASTM D140/D140M and provide to the Government for verification testing. Quantities apply to each mix design required in the Contract. Sampling for asphalt mixture verification will occur simultaneously when the mix designer obtains the material. If any necessary anti-strip additive or warm-mix technology (for use as a compaction aid) is proposed for use and is not blended into the asphalt binder at the terminal, provide a proportional quantity of anti-strip agent or warm-mix additive. If certain aggregates or asphalt binder properties fail to meet the requirements of this section prior to preliminary approval of the JMF, notification is required, along with resubmission of new proposed aggregates and/or asphalt binder.]





# AIRFIELD ASPHALT QUALITY CONTROL PLAN (AAQCP)



- a. Stockpile management and procedures to prevent contamination
- b. Mixing and transportation+++AASHTO M156 - platform scale, weighing and metering devices and calibration+++
- c. Control of mixture volumetrics
- d. Moisture content of mixtures
- e. Placing and finishing
- f. Joints
- g. Compaction, including Asphalt Pavement-Portland Cement Concrete joints
- h. Surface smoothness
- i. Truck bed release agent

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- j. QC Testing Plan
- k. If using an ignition furnace to determine asphalt content in accordance with ASTM D6307, provide the calibration factor ( $C_f$ ) for each ignition furnace proposed for use. Provide the ASTM reportable data, including  $C_f$ , for each JMF. +++ACCEPTANCE LAB+++
- l. Correlation of mechanical hammer to hand-held (manual) hammer. Determine the number of blows of the mechanical hammer required to provide the same density of the JMF as provided by the hand-held (manual) hammer. Use the average of three specimens per trial blow application.
- m. Profilograph Operator(s)
- n. Licensed Surveyor
- o. Example copy of COC from asphalt binder supplier.

## Revised AAQCP Section:

- Inclusion of ignition furnace calibration/correlation for acceptance lab.
- Dedicated spot to submit Marshall hammer correlations.



# AGGREGATE TESTING DURING PRODUCTION

## 3.1.2.1 Aggregate Properties

Obtain the combined aggregate sample from the cold feed+++hot bins?+++  
+++random+++ belt in accordance with ASTM D75/D75M and split on the 4.75 mm  
No. 4 sieve. Determine a composite aggregate bulk specific gravity ( $G_{sb}$ )  
once every four lots in accordance with ASTM C127 and ASTM C128. Report  
results per Table 12. In addition, determine the following coarse and fine  
aggregate properties during production (after test section acceptance) once  
every four lots. Commence testing procedures as soon as sample is obtained.  
Provide results within 24 hours of completion of test. If any of the test  
results fail, suspend production immediately.

### Coarse Aggregate:

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**NOTE: Select the same L.A. Abrasion value as in  
paragraph COARSE AGGREGATES.**

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- a. The percentage loss not greater than [40][\_\_\_\_\_] percent after 500 revolutions when tested in accordance with ASTM C131/C131M.
- b. At least 75 percent by weight of coarse aggregate contain at least two or more fractured faces when tested in accordance with ASTM D5821 with fractured faces produced by crushing.
- c. The particle shape essentially cubical and the aggregate containing not more than 5 percent, by weight, of flat and elongated particles (5:1 ratio of maximum to minimum) when tested in accordance with ASTM D4791 Method B. Express flat and elongated percentages as a weighted average of the various sieve sizes tested.



Picture from NCAT Report 05-01 Development of Rapid QC Procedures for Evaluation of HMA Properties During Production, R. West.



Picture from NCAT Report 07-03 Utilization of Automation and Real-Time Testing to Improve QC/QA Procedures for Hot Mix Asphalt, R. West, P. Turner



# QUESTIONS?



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