



Performance Examination - Asphalt

Standard Test Method for Asphalt Content of Asphalt Mixture by Ignition Method (ASTM D6307-16)

Candidate Name: _____ NICET ID: _____

Apparatus	Trial 1	Trial 2
Ignition Furnace Capable of maintaining a temperature of 580°C Dimensions adequate to accommodate a 2500 g sample Door cannot be opened during test Method for reducing furnace emissions Vented into a hood or to the outside A fan to pull air through the furnace		
Sample Basket Allows sample to be thinly spread Allows air to flow through and around sample Sets of two or more baskets nested Sample completely enclosed with a mesh screen or perforated stainless steel plate Catch pan of sufficient size to hold baskets		
Internal Balance (Method A only) Accurate to 0.1 g Capable of weighing a 2500 g sample in addition to the baskets Data collection system (Method A only) Built-in computer program Calculates the change in mass Capable of changing the ending mass loss percentage to 0.01%		
Oven Capable of maintaining a temperature of 110 ± 5°C (If not, include Maker and Identification No. under COMMENTS.)		
Balance conforming to specification D4753, class GP2 to 0.1 g		

Procedures	Trial 1	Trial 2
Calibration		
1. Calibration performed for each change in mix design or ingredients		
2. Sample approximately the same mass and gradation as that to be used for the HMA test sample		
3. Aggregate oven dried to constant mass (no temperature specified)		
4. Aggregate, asphalt cement, and all mixing bowls and tools heated to approx. 150°C		
5. Butter mix prepared to condition bowl		
6. Three calibration samples mixed at the design asphalt content		
7. Freshly mixed specimens placed directly into baskets		
8. Specimens tested according to a method		

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Procedures (continued)	Trial 1	Trial 2
9. Asphalt contents determined		
10. The test temperature is the same as that of calibration (540 ± 5°C)		
11. Average of the three taken and used as the calibration factor		
Sample Preparation		
1. Mixture warmed in an oven at 110 ± 5°C until it can be handled if necessary		
2. Particles of the mixture separated with spatula or trowel		
3. The sample obtained by splitting or quartering		
4. Sample mass is based on the nominal maximum aggregate size		
5. Sample divided into suitable increments and tested if necessary		
Ignition Procedure by Method A		
1. Furnace preheated to 540°C ± 5°C or the calibration temperature		
2. Sample dried to constant mass at 110 ± 5°C		
3. A test specimen for moisture determination obtained if necessary and moisture content determined according to D1461		
4. Sample evenly distributed in the basket, material kept away from edges and leveled		
5. The total mass of the sample, basket, catch pan and basket guards recorded		
6. The initial mass of the specimen calculated.		
7. Baskets placed in the furnace and chamber door closed.		
8. Pressing the start button locks the door and starts the blower		
9. The test continued until the change in mass does not exceed 0.01% for three consecutive minutes		
10. Corrected asphalt content (%) from the printed ticket reported. Moisture content subtracted from the printed ticket and the difference reported. Baskets removed and allowed to cool to room temperature		
11. Final mass obtained by subtracting the mass loss by the furnace from the initial mass of the mix		
12. Corrected asphalt content (% AC) calculated by the formula below: $\% AC = ((MB - MA) / MB \times 100) - CF$ Where MB = total mass prior to ignition, MA= total mass after ignition, CF= calibration factor		

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Procedures (continued)	Trial 1	Trial 2
Ignition Procedure by Method B		
1. Furnace preheated to 540 ± 5°C, or the calibration temperature		
2. Sample dried to constant mass at 110 ± 5°C		
3. A test specimen for moisture determination obtained if necessary and moisture content determined according to D1461. Basket(s) placed in catch pan and weighed with guards in place		
4. Sample evenly distributed in the basket, material kept away from edges and leveled		
5. The total mass of the sample, basket, catch pan and basket guards recorded		
6. The initial mass of the specimen calculated		
7. Sample burned in the furnace for at least 45 minutes		
8. The sample removed and allowed to cool to room temperature at least 10 minutes		
9. Sample weighed after ignition to the nearest 0.1 g		
11. Sample burned for at least 15 minutes after reaching the set temperature		
12. Steps 9 through 12 repeated until the change in mass does not exceed 0.01% of the initial sample mass		
13. Calculate corrected asphalt content (% AC) calculated by the formula below: $\% AC = ((MB - MA) / MB \times 100) - CF$ where MB = total mass prior to ignition, MA= total mass after ignition, CF= calibration factor		
14. Contents emptied into a flat pan, including any residual fines		
15. Report includes the following: Mass of HMA sample before and after ignition (to nearest 0.1 g) Measured asphalt content (to nearest 0.01%)		

First Attempt: Pass: _____ Fail: _____ Second Attempt: Pass: _____ Fail: _____

Comments:

Examiner Name: _____ Examiner Signature: _____ Date: _____