

EQUIPMENT

1. **Furnace:** Convection or Direct Irradiation Type .....
  - a. Internal weighing system capable of measuring the mass of sample sizes of at least 2500gms.....
  - b. Furnace chamber shall be of sufficient size to accommodate sample sizes of at least 2500gms .....
  - c. Shall have a data collection system so that the sample mass loss can be automatically determined to an accuracy of 0.1gms and displayed during a test .....
  - d. Equipment shall be capable of varying the test end point from 0.1 g to 1.0 g on a sample Size of 1500 g (0.007% to 0.07% on 1500 g) .....
  - e. The furnace shall be capable of alerting the operator and/or turning off the furnace heating elements .....
  - f. Furnace shall be vented into a hood or to the atmosphere and when set up properly will have no noticeable odours escaping into the laboratory .....
  - g. The furnace will have a fan with capability to pull air through the furnace to expedite the test and to reduce escape of smoke into the laboratory .....
  - h. The furnace shall be equipped so that the door cannot be opened during the ignition test .....

**Note:** Inspector should request that the client produce the operation manual for the particular furnace being inspected – manual should contain details as to the proper installation and venting of the furnace.
2. **Balance:** 3 kg capacity, accurate to 0.1 g .....
3. **Drying pans:** for drying washed aggregate – seamless enamel, stainless steel. or aluminum with a minimum of 10 square mm horizontal surface area per gram of sample .....
4. **Rectangular metal pans:** for the determination of moisture content – 250 x 400 x 50 mm .....
5. **Riffle Splitter:** individual chutes approximately 38 mm for all types of paving mix .....
6. **Oven:** capable of maintaining a temperature of 110°C.....
7. **Sample Basket Assembly:** as provided by the manufacturer for particular model of furnace being inspected – 2 stackable sample baskets and 1 catch pan .....
8. **Basket Carrier:** as provided by the manufacturer for lifting the baskets in and out of the oven .....
9. **Sample Safety Cage:** as provided by the manufacturer for shielding hot sample basket assembly while the asphalt sample cools .....
10. **Gloves:** heat resistant .....
11. **Safety Glasses or Safety Shield** .....
12. **Appropriate Warning Labels** .....

COMMENTS: (write on separate page if necessary)

**FURNACE CALIBRATION**

1. Calibration end point set to 1.0 g for all sample sizes or by percentages (0.2% by mass at 500 g sample size; 0.07% at 1500 g; 0.05% at 2000 g) .....  
**Note:** Inspector should obtain a status printout for this information.
2. Individual calibration factor (lab Mix) is less than 1.0% .....
3. Mean calibration factor (based on Lab Mix) for each mix type recorded and documented .....  
**Note:** Calibration of Oven Scale should be performed when the ignition oven is turned off

**Sample Preparation – Field Sample**

1. Sample obtained according to approved methods – quartering or riffle splitter ..
2. Sample size conforms to the requirements - ‘Designated Large Sieve’ size of the mix.....
3. Core sample heated & trimmed to remove particles cut during coring process – depth trimmed shall be equivalent to the ‘Designated Large Sieve’ size for particular mix type .....
4. Sample for determination of moisture content if required – minimum 1000 g .....
5. Spread mixture in a pan and place in oven - reheat to 110° C .....

**Ignition Procedure - Convection Type\* / Irradiation Type\*\***

1. Set Sample Assembly on balance – determine and record mass .....
2. Tare Sample Assembly to 0.0 g .....
3. Spread mixture evenly on both trays of the Sample Assembly – weigh and record sample to the nearest 0.1 g .....
4. Tare oven balance by pressing “0” key .....
5. Input the testing mass into the furnace software .....
6. \* **Input the testing temperature, 430 ± 5° C, 480 ± 5° C, or 540 ± 5° C as determined by furnace calibration into the furnace software** .....
7. \*\* **Input setup of the burn profile for the type of mix being tested** .....
8. If test sample is dry, Input the mean calibration factor into the furnace software.....

or

If test sample contains moisture, adjust the asphalt cement content for the test portion by either:

- a. adjusting the AC content % after ignition testing .....  
or , if the % moisture is known
- b. adjusting the mean calibration factor before ignition testing .....
9. Input furnace end point to 1.0 g or by % (0.2% by mass at 500 g; 0.07% at 1500 g; 0.05% at 2000 g) .....
10. Sample loaded into the furnace according to manufacturers instructions .....
11. Oven door closed – furnace will not operate with the door open .....
12. Press the “Start.Stop” button – automatic locking mechanism locks the door .....
13. At completion of the test – an audible alarm will signal test completion and the printer will stop .....
14. Press the “StartStop” button - automatic locking mechanism will unlock the door .....
15. Sample removed from oven – according to manufacturers instructions .....
16. Printout of test is removed, documented and saved .....
17. Calculate asphalt cement content to 2 decimal points .....

**Asphalt Cement Content By Ignition & Analysis of Remaining Aggregate  
from Bituminous Paving Mixtures**

LS-292/D-6307-98

**Calculations:**

- a. If the field sample used for ignition is dry, the % AC (by ignition) – the final value on ignition Tape will be correct .....\_\_\_\_\_
- b. If the field sample used for ignition is not dry, correct for moisture content, as determined by Items 8a or 8b under Ignition Procedure .....\_\_\_\_\_

**Note: for calculations see LS 292 / Items 4.4 to 4.4.4 and Items 5.1 to 5.2**

**COMMENTS:** (write on separate page if necessary)

Name of Laboratory: \_\_\_\_\_ Date: \_\_\_\_\_  
Inspector: \_\_\_\_\_ Inspection No.: \_\_\_\_\_