

DEPARTMENT OF TRANSPORTATION

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METHOD OF TEST FOR REDUCING SAMPLES OF ASPHALT MIXTURES TO TESTING SIZE

A. SCOPE

This test method describes the procedures for reducing large samples of asphalt mixture to the appropriate size for testing, using techniques that are intended to minimize variations in the measured characteristics between the test sample and the large sample.

B. REFERENCES

California Test 125 Sampling Highway Materials and
Products Used in the Roadway Structural Sections
AASHTO R 47-19 Reducing Samples of Asphalt Mixtures to Testing Size

C. PROCEDURE

The following procedures apply to plant-produced hot mix asphalt (HMA) samples taken in accordance with California Test 125. HMA includes non-rubberized asphalt mixtures (Type A HMA, Open Graded Friction Course (OGFC), and Bonded Wearing Course (BWC)) and rubberized asphalt mixtures (Rubberized HMA – Gap Graded (RHMA-G), Rubberized HMA – Open Graded (RHMA-O), and BWC).

Heat the sample in the oven to its required compacting temperature. Verify the internal sample temperature using a temperature probe. Do not keep the sample in the oven longer than 3 hours after it has reached the required temperature. Samples should not be subjected to more than 2 cycles of reheating.

PART 1. NON-RUBBERIZED ASPHALT MIXTURES

Conduct sample reduction of all non-rubberized asphalt mixtures in accordance with AASHTO R 47-19.

PART 2. RUBBERIZED ASPHALT MIXTURES

This procedure for reducing rubberized asphalt mixtures samples to testing size is designed to minimize handling of the material by proportioning test samples directly from the sample boxes without any intermediate processing of the material.

Anti-stick or release agents may be used on tools if the tools are wiped before sampling. Release agents must not contain any solvents or petroleum-based products that may affect asphalt binder properties. Tools may also be preheated to compaction temperature to prevent accumulation of material.

2A. APPARATUS

1. Scoop: a straight-edged, metal flat-bottom scoop with a minimum 3 in. nose width.
2. Taping knife: a rectangular 8 in. wide taping knife with a heat resistant handle and at least a 4 in. blade height to be able to cut the entire depth of the sample.
3. Spatula: a 3 in. wide spatula with a heat resistant handle.
4. Oven: an oven of sufficient size to heat sample boxes and capable of maintaining temperatures up to 325°F.
5. Table: a work surface that is be flat and capable of handling material heat exposure up to 325°F without damage.
6. High temperature gloves: gloves approved for a minimum working temperature of 325°F.

7. Temperature probe: a thermometer or temperature probe having a metal stem, a minimum range of 100° to 400°F, and accurate to 3°F or less.
8. Utility knife: standard utility knife or similar device suitable for cutting boxes.
9. Balance: a balance or scale accurate to 0.1 g with a minimum capacity of 10 kg.
10. Pans: a sufficient number of metal pans based on test sample size and number of samples being prepared.

2B. PROCEDURE

1. Prepare the sample reduction area and materials ahead of time to minimize the amount of time spent reducing samples. At a minimum:
 - a. Prepare a list of test samples that need to be reduced by weight.
 - b. Prepare test sample labels.
 - c. Heat scoop, tapping knife, and spatula in the oven.
2. Use high temperature gloves to remove heated sample boxes (4 boxes representing one sample set) from the oven and place them on the table.
3. Place the pan on the scale and tare.
4. Prepare sample boxes by cutting through the front vertical edges of each box. Fold down the front side of each box to provide a working space (Figure 1). The front vertical face of the samples should be fully exposed.

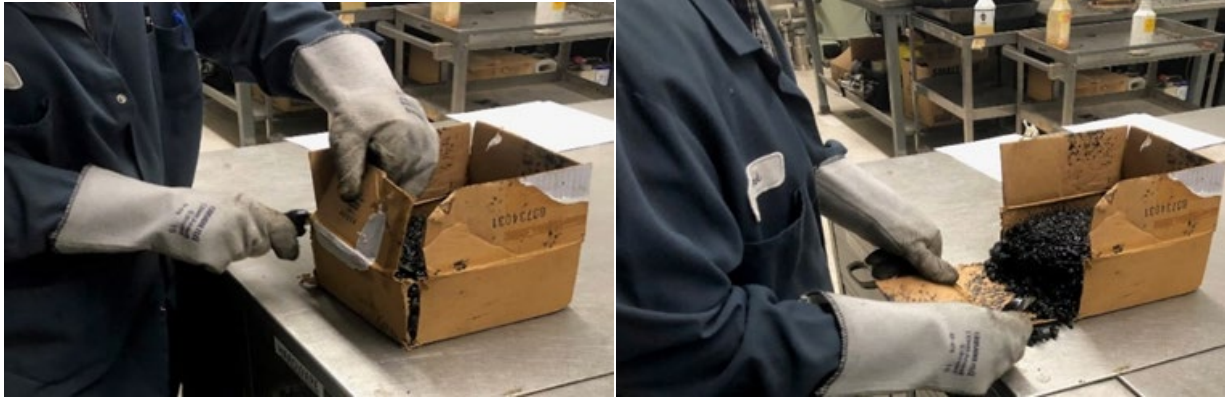


FIGURE 1 Cut Sides of the Front of the Box to Expose Material

5. Remove approximately equal portions from each of the 4 sample boxes using the tapping knife, scoop, and spatula to obtain the necessary test sample weight.
 - a. Isolate a portion of the sample by pushing the tapping knife vertically into the material and perpendicular to the left and right side of the box edges. Remove material by sliding the scoop along the bottom of the box from the edge of the isolated portion inward to the tapping knife (Figure 2).



FIGURE 2 Sample Equal Portions from Each Box

- b. Pull the flat-bottom scoop from the box without spilling material from the box or scoop.

- c. Using the spatula:
 - i. Transfer the material from the scoop into the pan.
 - ii. Scrape any fines stuck to the inside of the scoop into the pan.
 - iii. Scrape any excess material left on the scoop back into its corresponding box.
6. Monitor and adjust each box increment size to achieve the desired final test sample weight within the required weight limits (Figure 3).
7. Steps 1 through 6 must be completed within 15 minutes of removing the boxes from the oven.
8. Repeat necessary steps until all test samples have been obtained.



FIGURE 3 Monitor and Adjust Each Box Increment Size to Achieve the Desired Final Test Sample Weight

E. REPORTING

When required, submit personnel information performing sample reducing electronically in accordance with the DIMEXML format and guidance documents found at the following link:

<https://dime.dot.ca.gov/index.php?r=help/submittestresult>

F. HEALTH AND SAFETY

It is the responsibility of the user of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. Prior to handling, testing, or disposing of any materials, testers must be knowledgeable about safe laboratory practices, hazards and exposure, chemical procurement and storage, and personal protective apparel and equipment.

Refer to the Safety Manual for your Laboratory.

**End of Text
(California Test 306 contains 6 pages)**