



**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS AND TESTS**

**REDUCING HMA SAMPLES TO TESTING SIZE
ITM No. 587-21**

1.0 SCOPE.

- 1.1 This test method covers the procedures for reducing HMA samples to the appropriate size for testing.
- 1.2 This procedure may involve hazardous materials, operations and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 AASHTO Standards.

R 47 Standard Practice for Reducing Samples of Asphalt Mixtures to Testing Size

2.2 ITM Standards.

580 Sampling HMA

3.0 SIGNIFICANCE AND USE. This ITM is used to reduce HMA samples for testing purposes. Minimum size samples, sample sizes that are within a weight (mass) range, and sample sizes that meet a known target weight are required, depending on the type of test conducted.

4.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101.

5.0 APPARATUS.

5.1 Splitting Board. The splitting board shall be any flat surface free from contaminants such as HMA, aggregate, liquid asphalt, dirt, grease, excess solvents, etc., and may be preheated with heat lamps.

5.2 Trowel or drywall taping knife

The splitting board and tools can be made nonstick by the application of PAM® Original cooking spray or an approved anti-adhesive material that is diluted and

used per the manufacturer's recommendations. The material shall not contain any solvents or petroleum-based products that could affect asphalt binder properties.

6.0 PROCEDURE – MINIMUM WEIGHT

- 6.1 Place the sample on a clean splitting board
- 6.2 Thoroughly mix the sample by turning the entire sample over a minimum of four times with a trowel or drywall taping knife. Create a conical pile and carefully flatten to a uniform thickness and diameter by pressing down the apex with the trowel or drywall taping knives. Make a visual observation to ensure that the material is homogeneous. Quarter the sample into four approximately equal portions.
- 6.3 Recombine two diagonally opposite portions
- 6.4 Weigh the sample. If the sample does not meet the minimum weight (mass) required for the appropriate test method, set aside the sample, and repeat 6.2 and 6.3 for the remaining two portions.
- 6.5 Add the additional diagonally opposite portions to the original sample. Repeat this procedure until the minimum weight required is obtained.
- 6.6 If the sample obtained in 6.4 is excessively large, the sample may be discarded. Repeat 6.2 to 6.5 for the remaining two portions until the required weight is obtained.

7.0 PROCEDURE - WEIGHT RANGE.

- 7.1 Place the sample on a clean splitting board
- 7.2 Thoroughly mix the sample by turning the entire sample over a minimum of four times with a trowel or drywall taping knife. Create a conical pile and carefully flatten to a uniform thickness and diameter by pressing down the apex with the trowel or drywall taping knives. Make a visual observation to ensure that the material is homogeneous. Quarter the sample into four approximately equal portions.
- 7.3 Recombine two diagonally opposite portions
- 7.4 Weigh the sample. If the sample does not meet the minimum weight required for the appropriate test method, set aside the sample, and repeat 7.2 and 7.3 for the remaining two portions.
- 7.5 Weigh the additional diagonally opposite portions. If the weight of the additional portion plus the original sample is less than the minimum required weight, repeat

7.2 and 7.3 and add the portions to the sample. Repeat this procedure until the weight is within the weight range. If the weight of the additional portion plus the original sample is greater than the maximum allowable weight, discard the additional mixture and repeat 7.2 to 7.5 until the weight is within the weight range.

- 7.6 If the sample obtained in 7.4 exceeds the maximum allowable weight, discard the sample, and repeat 7.2 to 7.5 until the weight is within the weight range.

8.0 PROCEDURE - TARGET WEIGHT

- 8.1 Place the sample on a clean splitting board

8.2 Thoroughly mix the sample by turning the entire sample over a minimum of four times with a trowel or drywall taping knife. Create a conical pile and carefully flatten to a uniform thickness and diameter by pressing down the apex with the trowel or drywall taping knives. Make a visual observation to ensure that the material is homogeneous. Quarter the sample into four approximately equal portions.

- 8.3 Combine two diagonally opposite portions and weigh the sample (Note 1). This sample will initially be used to prepare Specimen A.

Note 1: The sample will generally exceed the target weight by more than 300 g after the first split. Weighing the sample is not required when the sample obviously exceeds the target weight. Set aside the remaining portions from the initial split for later use in Specimen B.

- 8.4 If the sample is greater than the target weight and not within 300 g of the target, repeat 8.2 and 8.3 on the sample. Proceed to 8.5 when the sample becomes less than the target weight by more than 300 g or proceed to 8.6 or 8.7 if the sample is within ± 300 g of the target weight.

- 8.5 If the sample is less than the target weight and not within 300 g of the target, set the sample aside and repeat 8.2 and 8.3 on the remaining portions. Add diagonally opposite portions to the previously weighed sample until the sample is within ± 300 g of the target weight (Note 2). Proceed to 8.6 or 8.7.

Note 2: Avoid exceeding the target weight by more than 300 g. If in doubt, the diagonally opposite portions should be weighed prior to adding to the previously weighed sample to avoid exceeding the target weight. Start over if the target weight has been exceeded by 300 g.

- 8.6 For samples less than and within 300 g of the target weight, mix the remaining quarters into a miniature stockpile. Carefully add to the sample an amount required for achieving the target weight by sampling with a trowel at a location

approximately one-third the stockpile height, measured from the base of the stockpile.

- 8.7** For samples more than and within 300 g of the target weight, mix the sample into a miniature stockpile. Carefully remove from the sample an amount required for achieving the target weight by sampling with a trowel at a location approximately one-third the stockpile height, measured from the base of the stockpile.
- 8.8** The target weight is considered obtained when the weight is within ± 10 g of the DMF/JMF target weight value.
- 8.9** Discard the remnant material from Specimen A and repeat these procedures on material saved from the initial split for use in Specimen B.