Test Procedure for

SAMPLING BITUMINOUS MATERIALS, PRE-MOLDED JOINT FILLERS, AND JOINT SEALERS

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1. SCOPE

1.1 These procedures apply to the sampling of liquid, semi-solid, or solid bituminous materials at the point of manufacture, and from bulk storage, tank cars, distributors, drums, or cakes, for the following purposes:

- preliminary investigation of material source,
- quality tests of bituminous materials at point of manufacture, and
- inspection of materials at the site of the project.

1.2 The test method is in several parts, containing procedures for the following:

- Part I—Sampling from Storage Tanks
- Part II—Sampling from Pipelines
- Part III—Sampling from Tank Cars, Trucks, or Distributors
- Part IV—Sampling Blended Materials
- Part V—Sampling from Drums, Packages, or Cakes
- Part VI—Sampling Pre-Molded Expansion Joint Filler and Asphalt Plank
- Part VII—Sampling Joint Sealers
- Part VIII—Sampling Bituminous Adhesive
- Part IX—Sampling Low-Modulus Silicone Sealant.

1.3 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.
PART I—SAMPLING FROM STORAGE TANKS

2. SCOPE

2.1 Refineries are required to store semi-solid asphalt, liquid asphalt, and emulsified asphalt in metal tanks provided with a number of drain cocks, depending on the capacity of the tank, located on the side at definite distances from the top.

2.2 Use the following procedure when sampling liquid bituminous materials from these storage tanks.

3. MATERIALS

3.1 Screw top or friction-lid cans, clean, dry, 1 L (1 qt.)

3.2 Safety equipment:

- gloves,
- glasses or goggles,
- long sleeve shirt,
- long pants, and
- shoes that cover the entire foot.

4. PROCEDURE

4.1 Seal inlet valves of the tank prior to sampling, if applicable.

4.2 Wearing the required safety equipment, open the appropriate drain cock on the tank and allow enough material to flow into a waste container to ensure a representative sample.

4.3 Fill the sample container from the drain cock. Use a friction-lid can for AC graded materials or a screw-top can for cutbacks, emulsions, and other asphalts that are liquid at 25°C (77°F).

4.4 Seal the sample container.

4.5 Attach identifying tags to the sample container, clearly showing the name of the producer, the grade, the tank and seal numbers, and any other identifying information.

4.6 Enter all required sample information, including all information from the sample container, on Form 202, “Identification of Material Samples.”

5. NOTES

5.1 The number of samples collected per tank depends upon the capacity of the tank.
5.1.1 Take two samples, from 1/3 and 2/3 of tank depth, for tanks of up to 1,500,000 L (400,000 gal.) capacity.

5.1.2 Take three samples, from top, middle, and bottom of tank, for tanks of more than 1,500,000 L (400,000 gal.) capacity.

5.2 If the tank contains a mechanism to ensure uniformity of the material contained within it, and observation or testing samples from various levels within the tank verifies the mechanism, a single sample is satisfactory for test purposes.

5.3 If drain cocks are not available, take samples by lowering a weighted container into the tank. The container should be fitted with a stopper, removable by a string or wire when the container is at the proper depth in the tank.

PART II—SAMPLING FROM PIPELINES

6. SCOPE

6.1 When the pipeline fills tank cars, distributors, or drums, take the sample directly from the pipeline.

6.2 A sampling pipe of not more than 1/8 the diameter of the pipeline, with a drain cock used to regulate the flow through it, is required. Insert this pipe into a rising section of the line on the discharge side of the pump, with its opening turned to face the flow of the liquid.

6.3 Use the following procedure when sampling liquid bituminous materials from pipelines.

7. MATERIALS

7.1 Screw-top or friction-lid cans, clean, dry, 1 L (1 qt.)

7.2 Sample receiver, with a minimum capacity of 19 L (5 gal.)

8. PROCEDURE

8.1 Open the drain cock, allow enough material to flow into a waste container to clear the sample cock, and sample line of old material.

8.2 Fill the sample container from the drain cock.

8.3 Mix material taken in a receiver throughout the loading process thoroughly and fill the sample container.

8.4 Tightly close the sample container. Label the container and enter the information in Form 202, “Identification of Material Samples,” as noted in Part I.
PART III—SAMPLING FROM TANK CARS, TRUCKS, OR DISTRIBUTORS

9. SCOPE

9.1 Use this procedure when sampling liquid or semi-solid bituminous materials from tank cars, trucks, or distributors.

10. MATERIALS

10.1 Screw-top or friction-lid cans, clean, dry, 1 L (1 qt.)

10.2 Asphalt sampling device. (See example, Figures 1–3.)

Figure 1—Asphalt Sampling Device (Full View)
Figure 2—Asphalt Sampling Device (Handle Detail)

Figure 3—Asphalt Sampling Device (Can Support Detail)
11. **PROCEDURE**

11.1 Carefully inspect the material for the presence of foam, sediment, or free water on top or bottom of the car or truck. Make notation of such observations.

11.2 When sampling from distributors, mix the material thoroughly with the pump.

11.3 When sampling semi-solid materials, heat the materials to fluidity. (Sample all liquid materials without heating, if possible.)

11.4 Obtain the sample from the top of the truck, whenever possible, or from the sampling port or loading line, where safety or other considerations prevent access to the top of the truck.

11.4.1 Obtain a sample from the top of the truck by lowering a 1 L (1 qt.) can, attached to the sampling device, through the top hatch.

11.4.2 Obtain a sample from the sampling port or the loading line halfway through the unloading process. If the sampling port is used, follow Sections 4.2–4.3.

11.5 Pour the material into a clean container.

11.6 When sampling from a distributor, take the sample from the spray bar by placing a can under one of the nozzles and opening the spray bar valve for that nozzle.

11.7 Label the sample container and complete Form 202, “Identification of Material Samples,” as described in Part I.

**PART IV—SAMPLING BLENDED MATERIALS**

12. **SCOPE**

12.1 The producer should assign a batch number to each individual grade of asphalt produced through an automatic blender. The producer must change this number each time either of the blending stocks is changed.

12.2 Use the following procedure when sampling these blended materials.

13. **MATERIALS**

13.1 Screw-top or friction-lid can, clean, dry, 1 L (1 qt.)
14. **PROCEDURE**

14.1 Either obtain a sample from a trial blend or from the first truck from each batch using the procedure described in Part III, or obtain a sample from the pipeline used for loading, using the procedure described in Part II.

**PART V—SAMPLING FROM DRUMS, PACKAGES, OR CAKES**

15. **SCOPE**

15.1 Use this procedure when sampling bituminous materials from drums, packages, or cakes.

16. **MATERIALS**

16.1 *Friction-lid bucket*, clean, dry, 4 L (1 gal.)

17. **PROCEDURE**

17.1 If sampling the lot of material from a single batch, select one unit at random for sampling.

17.2 If not sampling the lot of material from a single batch, or if a singular sample from the lot fails to meet specifications, select a number of units equal to the cube root of the total number of units in the lot, rounding up to the next whole number. *Example:* Take four samples for lots from 28 units up to $4 \times 4 \times 4 = 64$ units, and take five samples from lots of 65 and up to $5 \times 5 \times 5 = 125$ units.

17.3 Collect a sample of at least 454 g of material from at least 76 mm (3 in.) below the surface and 76 mm (3 in.) from the side of the container or from the middle of the cake.

17.4 Melt and thoroughly mix materials from the same batch to form one composite sample; test materials not from the same batch separately. (Even when more than one batch is present in a particular lot, test the individual batches as composite samples if clearly identified.)

17.5 Fill a 2 L (2 qt.) friction-lid bucket as the final sample.

17.6 Label the container and complete Form 202, “Identification of Material Samples,” for each sample, as described in Part I.
PART VI—SAMPLING PRE-MOLDED EXPANSION JOINT FILLER AND ASPHALT PLANK

18. SCOPE

18.1 Use this procedure when sampling pre-molded materials, such as joint filler and asphalt plank.

19. MATERIALS

19.1 Box or light piece of plywood, 300 × 300 mm (12 × 12 in.)

20. PROCEDURE

20.1 Take a sample at least 300 × 300 mm (12 × 12 in.) for each thickness of material, for each type, and for each producer.

20.2 When material is in irregular shapes or sizes, use a piece of at least 90,000 mm² (1 ft²) of each thickness, type, and producer as the sample.

Note 1—Do not use pieces less than 100 mm (4 in.) in any dimension as samples.

20.3 Enclose the sample in a box or tie it securely to a light piece of board or plywood and wrap it to avoid damage during shipment.

20.4 Complete Form 202, “Identification of Material Samples,” and attach it to the sample or sample container, placed for easy identification.

PART VII—SAMPLING JOINT SEALERS

21. SCOPE

21.1 Use this procedure for all types of joint sealers, including hot-poured rubber and two-component types. The manufacturer usually packages these materials in individual containers.

22. MATERIALS

22.1 Sample containers, including clean, dry boxes and 4 L (1 gal.) buckets with friction lids.
23. **PROCEDURE**

23.1 *Hot Poured Rubber Asphalt Joint Sealer and Rubber Asphalt Crack Sealing Compound:*

23.1.1 Obtain one container from each batch or lot.

23.1.2 When several batches make up a shipment, combine them to make one lot.

23.1.3 Take one sample to represent the shipment.

23.2 *Single-Component, Ready Mixed, Cold-Applied Sealer:*

23.2.1 Fill one bucket per sample.

23.2.2 Stir thoroughly before sampling.

23.3 *Two-Component Sealers (only):*

23.3.1 Stir any liquid components thoroughly.

23.3.2 Pour from one can to a clean, empty container to check for settlement.

23.3.3 Take one full bucket sample for any liquid components.

23.3.4 For solid or paste components, take a sample of appropriate size to mix with the bucket of liquid.

23.3.5 For units packaged together, as a can carrying a “piggyback” container inside, take one unit for the sample.

23.4 *All Types of Joint Sealers:*

23.4.1 Include primers with joint sealer samples where appropriate.

23.4.2 Complete Form 202, “Identification of Material Samples,” and include the information specified in Section 24.

23.4.3 Submit one sample for each lot and/or batch number (numbered by manufacturer) of sealer in the shipment.

24. **SAMPLE INFORMATION**

24.1 Enter the following information on Form 202, “Identification of Material Samples,” in addition to any other information normally included:

- consignment of sample, (EXAMPLE: Requisition and Board Control Number, Contractor and project information, or warehouse name and location);
mixing proportions by weight or volume, as appropriate, for two-component materials; and

- amount of material represented by the sample for single-component material, or of each component for two-component material.

PART VIII—SAMPLING BITUMINOUS ADHESIVE

25. SCOPE

25.1 Use this procedure for sampling bituminous marker adhesive.

26. MATERIALS

26.1 Sample boxes, clean, dry.

27. PROCEDURE

27.1 Obtain a 5.5 to 6.8-kg (12 to 15-lb.) segment in a box from each batch or lot. (The material, which is typically solid at room temperature, will have been hot-poured into the sample box by the manufacturer.)

27.2 When a shipment contains several batches, combine to make one lot, with one sample taken to represent the shipment.

27.3 Complete Form 202, “Identification of Material Samples,” for the sample.

PART IX—SAMPLING LOW-MODULUS SILICONE SEALANT

28. SCOPE

28.1 Use this procedure for sampling all types of one- and two-component silicone sealant.

29. MATERIALS

29.1 Plastic bag, zip lock, I L (1 qt.) size.

29.2 Large spatula or spoon.

29.3 Sample pail, 4 L (1 gal.)
30. **PROCEDURE**

30.1 Place a sample from the drum or other container in the plastic bag, seal, and ship inside the sample pail.

30.2 When tubes or cartridges of the same batch or lot accompany the shipment, take one tube or cartridge for the sample.

30.3 For two-component materials, sample one tube or cartridge of each component.

30.4 Complete Form 202, “Identification of Material Samples,” and ship with the sample. **Note 2**—When sampling from drums or other containers, take care to minimize exposure of the sealant to the air.

31. **ARCHIVED VERSIONS**

31.1 Archived versions are available.