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Standard Practice for Bituminous Mixing Plant Inspection¹

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1. Scope

1.1 This practice defines the authority and duties of the inspector at the bituminous mixing plant. These duties are performed in order to ensure the contractor's compliance with the contract and applicable specifications and do not in any way relieve the contractor of the responsibility to produce uniform mixtures in compliance with the contract.

1.2 The values stated in inch-pound units are to be regarded as the standard.

1.3 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

C 136 Method for Sieve Analysis of Fine and Coarse Aggregates^{2,3}

D 75 Practice for Sampling Aggregates³

D 140 Practice for Sampling Bituminous Materials³

D 242 Specification for Mineral Filler for Bituminous Paving Mixtures³

D 546 Test Method for Sieve Analysis of Mineral Filler for Road and Paving Materials³

D 979 Practice for Sampling Bituminous Paving Mixtures³

D 995 Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures³

D 3666 Practice for Evaluating and Qualifying Agencies Testing and Inspecting Bituminous Paving Materials³

3. Terminology

3.1 Descriptions of Terms Specific to This Standard:

3.1.1 *engineer, n*—the party in responsible charge of the work or the engineer's duly recognized or authorized representative.

3.1.2 *inspector, n*—the engineer's (or in the absence of the engineer, the purchaser's) authorized representative delegated to perform inspections, tests, and duties hereinafter indicated.

3.1.2.1 *Discussion*—The inspector shall be qualified as a technician in accordance with the applicable requirements of Practice D 3666.

3.1.3 *contractor, n*—the party to the contract who has agreed to supply materials and perform work in accordance with the specifications, or the contractor's duly authorized representative at the plant.

3.1.4 *laboratory, n*—any supervising laboratory duly authorized by the engineer to direct and advise the inspector in the discharge of assigned duties.

3.1.4.1 *Discussion*—The laboratory shall satisfy the applicable requirements of Practice D 3666.

3.1.5 *plant laboratory, n*—the laboratory operated by or under the direction of the plant inspector at the plant, or the contractor's laboratory for use by the contractor's representative for the control of plant production.

4. Significance and Use

4.1 This practice defines the authority and duties of the inspection personnel assigned to bituminous mixing plants.

4.2 The intent of the practice is to assure by inspection, that the contractor's facilities, production operations, materials handling, required testing, and finally, the finished mix product comply with applicable specifications.

5. Responsibilities and General Duties of Inspector

5.1 *Authority*—In the absence of authority conferred by the specifications or contract provisions, the inspector shall be provided with written authority from the engineer to ensure fulfillment of specifications covering materials, plant procedure, and products, and reject such materials, procedures, and products failing to conform to specifications. The inspector shall have available a copy of the specifications and any contract special provisions applying to the particular project, and shall be furnished immediately in writing with copies of all modifications, amendments, and instructions affecting the product of the plant. The inspector shall recognize the right of the contractor to use such apparatus, methods, and personnel as deemed proper, provided that no specification requirements are thereby violated. Any appeal on the part of the contractor from rejections shall be made in writing to the engineer, with a copy to the inspector, unless otherwise provided in the contract.

5.2 *Cooperation*—The plant inspector shall cooperate with the contractor in every reasonable way to obtain efficient and economical plant operation consistent with production of a mixture of satisfactory quality, and with the paving inspector on matters of mutual concern relating to obtaining a mixture of satisfactory placement characteristics, all within the limits of the specifications.

5.3 *Duties*—In addition to the responsibilities specified in 5.1 and 5.2, the duties of the plant inspector shall be:

5.3.1 To ensure that the plant is equipped and operated at all times in conformity with the specifications (Section 6).

¹ This practice is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.23 on Plant-Mixed Bituminous Surfaces and Bases.

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² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 04.03.

 D 290
TABLE 1 Index of Sampling

Material	Method	Quantity	When Collected	By Whom Tested
Fine aggregate (cold feed)	Practice D 75	Case I ^A —25 lb (11.3 kg) Case II ^B —5 lb (2.3 kg)	preliminary or first shipments from given source and when source of supply changes, when material characteristics change, or by special instructions from engineer	laboratory or plant laboratory
Coarse aggregate (cold feed)	Same as for Fine Aggregate	Case I ^A —50 lb (22.7 kg) Case II ^B —50 lb (22.7 kg)	same as for fine aggregate	laboratory or plant laboratory
Filler	Specification D 242	5 lb (2.3 kg)	each shipment	laboratory or plant laboratory
Aggregates (plant bins)	By use of approved sampling device capable of obtaining a representative bin sample	5 (2.3 kg) to 35 lb (15.9 kg) or more depending on maximum particle size as required under Method C 136	at least daily	plant laboratory
Bituminous material	Practice D 140	1 qt (1 L)	each car, tank truck, or boat	plant laboratory
Finished mixtures: A. To determine average daily analysis of mixture. B. For determination of uniformity of individual or different batches	Practice D 979	Practice D 979	A. Daily B. As directed	laboratory
Pavement sample	Practice D 979	1 square piece of size specified by Practice D 979	as directed	laboratory

^A When job-mix is formulated by Laboratory.^B When job-mix is formulated by Contractor.

5.3.2 To obtain samples as required for testing at the plant laboratory or submission to the laboratory (Section 7),

5.3.3 To inform the contractor when mixture or conditions violate specifications and disapprove subsequent production if corrections are not made (Section 8),

5.3.4 To conduct tests to check the adequacy of (1) materials to be used in mixture production and (2) plant control in maintaining a mixture which is in conformance with the job-mix formula and tolerance limits for uniformity (Section 9),

5.3.5 To maintain required inventory and production records (see 10.1), and

5.3.6 To submit daily reports (see 10.2 and 10.3).

6. Plant Equipment and Operation

6.1 General requirements for plant equipment shall be determined in accordance with Specification D 995 and supplementing contract requirements.

6.2 The inspector shall ascertain as early as possible, by a thorough inspection of the plant site, plant, and appurtenances, that all elements are in compliance with the contract. Specific attention shall be given to materials storage and handling, cold aggregate feeds, drier, mixture production plant, batching and mixing components, truck scales (when required), and hauling units. The inspector shall witness checks on the accuracy of the scales, using standard weights, and of volumetric meters if used in the proportioning of mixtures. During the operation of the plant, a periodic check shall be made on the accuracy of scales or meters used in determining the mass or volume of each component material.

7. Sampling

7.1 Materials (General):

7.1.1 A recommended schedule of sampling is indicated

in Table 1, Index of Sampling.

7.1.2 As far as possible in advance, but within the time limitation imposed by contract requirements, representative samples of each material proposed for use in the bituminous mixture shall be obtained by, or under approval and observation of, the inspector and submitted to the laboratory or tested by the inspector as directed.

NOTE 1—Requirements for lead time, size of samples, and specific sampling procedures will vary with contracting agencies, for example, different conditions will prevail as between job-mix formulation by the contractor or the engineer.

7.1.3 Should the source of supply of any material, or the characteristics of any material affecting specification requirements change from that represented by the initially submitted samples, new samples shall be submitted to the laboratory by the inspector.

7.1.4 Daily control samples of bituminous material and mixtures shall be collected and, at the end of the day's work, forwarded to the laboratory without delay.

NOTE 2—When forwarding samples of crude asphalt, refined asphalt, hard natural asphalt, oxidized asphalt or any other bituminous materials in inspections covering the production of bituminous pavements incorporating such materials, information shall also be furnished relative to the proportions by mass being used so that proper combinations can be made for analysis and check determinations.

7.2 Bituminous Mixtures:

7.2.1 Samples of bituminous mixtures shall be taken by the contractor daily, or as directed, and witnessed by the inspector for the purpose of checking average aggregate grading, and if desired, bituminous material content of the produced mixture by means of extraction procedures. Samples may also be taken, if directed, to determine uniformity within a batch, or batch-to-batch (time-to-time for continuous mixing plants).

7.2.1.1 In the case of plants automatically recording batch