



# CL-2

CONSTRUCTION LEAFLET NO. 2  
ASPHALT INSTITUTE  
ASPHALT INSTITUTE BUILDING  
COLLEGE PARK, MARYLAND 20740-1802  
301-277-4258 FAX No. 301-927-5226

## MODEL SPECIFICATIONS FOR SMALL PAVING JOBS\*

### SPECIFICATIONS FOR PAVING

#### A \_\_\_\_\_ WITH FULL-DEPTH ASPHALT CONCRETE\*

1. **Scope:** Furnish and construct a Full-Depth<sup>1</sup> asphalt pavement structure for a \_\_\_\_\_ as specified.

#### A. GENERAL REQUIREMENTS

2. **Establishment of Grades:\*** Grades shall be (will be) established by the contractor (owner) and the grade stakes shall be (will be) set to the desired section by the contractor (owner). In establishing the grades due allowances shall be (will be) made for existing improvements, proper drainage, adjoining property rights and good appearance.
3. **Preparation of Subgrade:\*** All debris, vegetation, or other perishable materials shall be removed from the job site, except for trees or shrubs designated for preservation. The site to be paved shall be graded to the required section and all excess material removed from the location of the work. Material in soft spots shall be removed to the depth required to provide a firm foundation and shall be replaced with a material equal to, or better than, the best subgrade material on the site. The entire subgrade area shall be thoroughly compacted at the lowest moisture content at which a handful of the soil can be molded by a firm closing of the hand. The surface of the subgrade after compaction shall be hard, uniform, smooth, and true to grade and cross-section. If specified by the owner or his engineer prior to placing the base course, designated subgrade areas shall be treated with a soil sterilant at the rate specified by the manufacturer to prevent the growth of weeds. If specified, the subgrade shall be primed.
4. **Thickness of Structure:** On the prepared subgrade a plant-mixed asphalt base shall be laid in \_\_\_\_\_ course(s) to a compacted thickness of \_\_\_\_\_ millimetres ( \_\_\_\_\_ inches). Placing of the plant-mixed asphalt surface course shall follow and be laid in a single course to a compacted thickness of \_\_\_\_\_ millimetres ( \_\_\_\_\_ inches).

<sup>1</sup>Full-Depth® Asphalt Pavement—The term Full-Depth (registered by The Asphalt Institute with the U.S. Patent Office) certifies that the pavement is one in which asphalt mixtures are employed for all courses above the subgrade or improved subgrade. A Full-Depth asphalt pavement is laid directly on the prepared subgrade.

\*See Notes to the Owner (Engineer).

5. **Tack Coat.\*** If specified by the owner (engineer), a tack coat shall be applied on each layer of the base course. The tack coat shall be \_\_\_\_\_ asphalt applied at the rate of \_\_\_\_\_ litre per square meter (\_\_\_\_\_ gallon per square yard).
6. **Equipment, Materials and Labor:\*** The contractor shall provide the necessary equipment, materials, and labor to complete the job acceptable to the owner. Variations in the size and amount of equipment shall depend on the size of the area being paved.
7. **Sampling and Testing:** If specified by the owner (engineer) the contractor shall furnish for test and analysis representative samples of the materials to be used in the work. Alternatively, if specified by the owner (engineer), the contractor shall provide certification that material furnished is in accordance with the contract. Sampling and testing shall be in accordance with the latest revisions of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM) Standard procedures for sampling and testing the materials being used in the project.
8. **Smoothness:** The surface of the completed work, when tested with a 3-metre (10-foot) straightedge, shall not contain irregularities in excess of 6mm (¼ in.).

## B. MATERIALS

9. **Asphalt:** The asphalt for the plant mix shall be (*type and grade*) as specified by the owner (engineer) prior to the letting of the contract. The asphalt material for priming the subgrade shall be (*type and grade*) as specified prior to the letting of the contract. The asphalt material selected shall meet the requirements of the applicable table in *Specifications for Asphalt Cements and Liquid Asphalts*, Specification Series No. 2, the Asphalt Institute. A certificate of compliance with the specifications of the asphalt will be acceptable.
10. **Mineral Aggregate: Asphalt Plant Mix Base and Surface**
  - (1) The mineral aggregate for asphalt plant mix shall consist of coarse aggregate, fine aggregate, and, if needed, mineral filler. The coarse aggregate shall be sound, angular crushed stone, crushed gravel, or crushed slag. Uncrushed coarse aggregate may be used in base course mixtures if the mixture meets all design criteria. The fine aggregate shall be well graded, moderately sharp to sharp sands.
  - (2) The mineral aggregate and asphalt shall be combined in a mixing plant to meet the following gradations for asphalt concrete base and surface, as specified by the engineer prior to the letting of the contract.

---

\*See Notes to the Owner (Engineer).

Base and Surface Sieve Size	*Percent Passing by Weight
25.0mm (1 in.)	_____
19.0mm (¾ in.)	_____
9.5mm (⅜ in.)	_____
4.75mm (No. 4)	_____
2.36mm (No. 8)	_____
600 μm (No. 30)	_____
300 μm (No. 50)	_____
150 μm (No. 100)	_____
75 μm (No. 200)	_____
Asphalt	_____

(Percent by weight of total mix)

\*Figures to be filled in. See Item 6, Notes to the Owner (Engineer).

### C. CONSTRUCTION

**11. Spreading Base and Surface Courses: Asphalt Base and Surface**

(1) For all areas of more 850m<sup>2</sup>, (approximately 1,000 yd<sup>2</sup>) asphalt base and surface courses shall be spread and struck off with a paver. Any irregularities in the surface of the pavement course shall be corrected directly behind the paver. Excess material forming high spots shall be removed with a shovel or a lute. Indented areas shall be filled with hot mix and smoothed with a lute or the edge of a shovel being pulled over the surface. Casting of mix over such areas shall not be permitted.

(2) If it is impractical to use a paver or spread box in areas of 850m<sup>2</sup> (approximately 1,000 yd<sup>2</sup>) or less, asphalt base and surface courses may be spread and finished by hand. Wood or steel forms, rigidly supported to assure correct grade and cross-section, may be used. Placing by hand shall be performed carefully to avoid segregation of the mix. Broadcasting of the material shall not be permitted. Any lumps that do not break down readily shall be removed.

**12. Compaction, Asphalt Base and Surface:** Rolling shall start as soon as the hot mix material can be compacted without displacement. Rolling shall continue until thoroughly compacted and all roller marks have disappeared.

In areas too small for the roller a vibrating plate compactor or hand tamper shall be used to achieve thorough compaction.

**13. Method of Measurement:** The quantities to be paid for will be as follows:

(1) *Preparation of Subgrade*—Total number of square metres (square yards) of subgrade actually prepared for covering with base material.

(2) *Asphalt Mixture*—Total number of tonnes (tons) of asphalt mixture actually incorporated into the work.

**14. Basis of Payment:** The quantities enumerated in Section 13 will be paid for at the contract unit price bid for each item or at a lump sum price bid for the job. Payment will be in full compensation for furnishing, hauling and placing materials, for rolling, and for all labor and use of equipment, tools, and incidentals necessary to complete the work in accordance with these specifications.

**15. Performance Guarantee:** The contractor shall guarantee in writing the satisfactory performance of the completed pavement for a period of \_\_\_\_\_ years.

## NOTES TO THE OWNER (ENGINEER):

1. This specification is applicable for such small paving jobs as  
Parking Areas (4200m<sup>2</sup> [approximately 5,000 yd<sup>2</sup>] or less)  
Driveways  
Service Stations  
Bicycle Paths  
Golf Cart Paths  
Sidewalks
2. Full-Depth asphalt pavements are recommended for greatest strength and durability.
3. **Article 2. Establishment of Grades**—If the contractor is to establish the grades delete “will be” and “owner” wherever they appear in the first sente. If the owner is to establish the grades delete “shall be” and “contractor.”
4. **Article 5. Tack Coat**—From 0.25 to 0.7 litre/m<sup>2</sup> (0.05 to 0.15 gal/yd<sup>2</sup>) of diluted SS-1, SS-1h, CSS-1 or CSS-1h asphalt emulsion is recommended. The asphalt emulsion should be diluted with equal parts of water.
5. **Article 6. Equipment**—If the job is under the supervision of an engineer, the engineer should approve those pieces of equipment applicable to the job to which the specification will apply.
6. **Article 10. Mineral Aggregate—Asphalt Plant-Mix Base and Surface**—Asphalt mixes meeting the requirements of ASTM Standard Specification D-3515 are recommended. Asphalt mixes specified by local public agencies may be used if they have a history of satisfactory performance. Contact an Asphalt Institute engineer for information on local mixes.
7. **Article 15. Performance Guarantee**—Insert appropriate number of years. Periods generally range from one to five years.

All reasonable care has been taken in the preparation of this publication, however, the Asphalt Institute can accept no responsibility for inadvertent omissions or inaccuracies. The principle guidelines presented herein are to be used and interpreted by qualified engineers.