

**SECTION 02470**

**BITUMINOUS CONCRETE PAVING**

**PART 1. GENERAL**

**1.1. Related Work Specified Elsewhere**

- a. The general provisions and documents of the Contract, including General and Special Conditions, apply to the work specified in this Section.
- b. Site Earthwork - Section 02200.
- c. Construction Drawings.

**1.2 References**

- a. State of Maine Department of Transportation Standard Specifications Highways and Bridges, latest revision, hereafter designated as MDOT Specifications.

**1.3 Material Certificates**

- a. Submit materials certificate to onsite independent testing laboratory which is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.

**PART 2. PRODUCTS**

**2.1 Materials**

- a. Bituminous Concrete (roadway and parking) - An approved hot plant mix conforming to MDOT Standard Specifications (latest revision). Use Grading B mix for binder and C mix for surface.

**PART 3. EXECUTION**

**3.1 Bituminous Concrete Paving**

- a. The Contractor shall be responsible that gravel is in proper condition to pave before starting work.
- b. Proof roll prepared base material surface to check for areas requiring additional compaction and areas requiring removal and recompaction.

- c. Do not begin paving work until deficient base material areas have been corrected and are ready to receive paving.
- d. Pavement mix for roads and parking areas shall be as herein specified and shall consist of the following courses after compaction:

	<u>Binder</u> <u>Course</u>	<u>Wearing</u> <u>Course</u>
Standard Duty Pavement:	2"	1"

- e. The spreading of bituminous concrete shall be done wherever practicable by an approved mechanical spreader. Place mixture while it is still hot (+250 D.F.). Rolling shall be done as soon as practicable after spreading and in no case after the mixture is cooled. The exposed finished surface shall present a true, smooth plane, free from roller marks, conspicuous joining lines, patches, voids or other imperfections. Where brown spots or other serious imperfections occur they shall be cut down to the base course and replaced by new pavement rather than by attempting to patch the surface. Feathered edge patches will not be permitted.
- f. Apply successive lifts of asphaltic concrete in transverse directions with the surface course placed in the direction of surface-water flow. Place in typical strips not less than 10' - 0" wide.
- g. Make joints between old and new pavements or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Joints at existing street paving and new paving shall be saw cut. Clean contact surfaces and apply tack coat.
- h. Mix placed by hand shall be placed on a steel dump board or wheelbarrow from the truck and then shoveled into place.

### 3.2 Rolling and Compaction

- a. The mixture, after being spread, shall be thoroughly compacted by rolling as soon as it will bear the weight of the rollers without undue displacement. Mixture shall be compacted to a minimum of 92% theoretical maximum density. The number, weight and types of rollers and sequences of rolling operations shall be such that the required density and surface are consistently attained while the mixture is in workable condition.

- b. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- c. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.
- d. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.
- e. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.
- f. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.
- g. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.
- h. Do not permit maneuvering of excavating equipment, lifts or other vehicles with tight turning or tracking capabilities on finished surface. Damaged areas shall be restored by Contractor at no additional expense to Owner.

### 3.3 Field Quality Control

- a. Grade Control: Establish and maintain required lines and elevations.
- b. Thickness: In-place compacted thickness shall not be less than thickness specified on the Drawings. Areas of deficient paving thickness shall receive a tack coat and a minimum one (1) inch overlay; or shall be removed and replaced to the proper thickness, at the discretion of the Owner; until specified thickness of the course is met or exceeded at no additional expense to the Owner.
- c. Surface Smoothness: Testing shall be performed on the finished surface of each asphalt concrete course for smoothness, using 10' - 0"

straightedge applied parallel with, and at right angles to centerline of paved area.

The results of these tests shall be made available to the Owner upon request. Surfaces will not be acceptable if exceeding following tolerances for smoothness:

Base Course Surface:	1/4"
Wearing Course Surface:	3/16"

- d. Check surface areas at intervals necessary to eliminate ponding areas. Remove and replace unacceptable paving as directed by Owner.
- e. Compaction: Field density tests for in-place materials shall be performed by examination of field cores in accordance with one of the following standards:
  - (1) Bulk specific gravity of paraffin-coated specimens: ASTM D-1188.
  - (2) Bulk specific gravity using saturated surface-dry specimens: ASTM D-2726.
- f. Rate of testing shall be one (1) core per 20,000 square feet of pavement, with a minimum of three (3) cores from heavy-duty areas and three (3) cores from standard-duty areas. Cores shall be cut from areas representative of the project.
- g. Areas of insufficient compaction shall be delineated, removed and replaced in compliance with the specifications at no expense to the Owner. Areas damaged by construction equipment shall be repaired to satisfaction of Owner at no expense to Owner.