

CONSTRUCTION METHODS

460.40: General

Prior to the start of any work activity addressed in 460.43: Preparation of Underlying Surface through 460.51: Opening to Traffic, a Construction Quality Meeting shall be held to review the Contractor's QC System. The Contractor shall present and discuss with the Engineer in sufficient detail the specific QC information and activities. The meeting is intended to ensure that the Contractor has an adequate QC System in place and that the Contractor's personnel are fully knowledgeable of the roles and activities for which they are responsible to achieve the specified level of quality. Contractor personnel required to attend the Construction Quality Meeting include the Construction Quality Control Manager (QC Manager) and all Superintendents.

460.41: Control of Grade and Cross-Section

The Contractor will provide a longitudinal and transverse reference system for the purpose of locating and documenting sampling and testing locations and related uses, i.e. limits of paving. It is the Contractor's responsibility to clearly define this reference system. Work related to this reference system is incidental and will be included as part of the Contractor's QC System.

The Contractor shall furnish, set, and maintain all line and grade stakes necessary to guide the automated grade control equipment. Where required these control stakes shall be maintained by the Contractor and used throughout the operations, from the grading of the subbase material up to and including the final course of the pavement.

Under normal conditions, where more than one course of HMA is to be constructed, the use of the string line for grade control may be eliminated or discontinued after the construction of the initial course of HMA. For resurfacing projects, the use of the string line for grade control may be eliminated. The use of approved automation may then be substituted for the string line where lines and grades are found to be satisfactory by the Engineer.

460.42: Weather Limitations

HMA shall only be placed on dry, unfrozen surfaces and only when the temperature requirements contained in Table 460.42-1 below are met. If the temperature requirements contained in Table 460.42-1 are not met at any point throughout the paving shift, HMA placement shall cease, except as determined and directed in writing by the Engineer depending upon the necessity and emergency of attendant conditions and weather conditions.

The Contractor may continue HMA placement when overtaken by sudden rain, but only with material which is in transit from the HMA production facility at the time, and then only when the temperature of the HMA mixture is within the temperature limits specified and when the existing surface on the roadway is free of standing moisture. The Engineer is not obligated to accept any material that was not already in transit prior to the onset of rain and the Contractor shall suspend operations for the day when the requirements of Subsection 460: Hot Mix Asphalt Pavement for Local Streets cannot be met.

The construction of HMA pavement shall terminate November 15 and shall not be resumed prior to April 1, except as determined and directed in writing by the Engineer depending upon the necessity and emergency of attendant conditions, weather conditions, and location of the project. Only in

Massachusetts Department of Transportation – Highway Division
Standard Specifications for Highways and Bridges

extreme cases will the placement of Surface Courses be permitted between November 15 and April 1.

Table 460.42-1: Temperature Limitations for HMA Placement

HMA Pavement Course	Lift Thickness (in.)	Minimum Air Temperature (°F)	Minimum Surface Temperature (°F)
Surface Course	<1 ¾	45	50
Surface Course	≥1 ¾	35 (see Note 1)	40
Intermediate Course	All	35 (see Note 1)	40
Base Course	All	35 (see Note 1)	40
Leveling Course	As Specified	45	50

Note 1: When the air temperature falls below 50°F, extra precautions shall be taken in drying the aggregates, controlling the temperatures of the materials, and in placing and compacting the mixtures.

The Contractor shall supply the Engineer with 2 approved dial type thermometers with a temperature range of -50°F to 500°F and 2 infrared pistol thermometer for each paving machine in operation on the project. The thermometers will remain the property of the Contractor upon completion of the project. The infrared pistol thermometers shall read in Fahrenheit and conform to the following requirements:

- Portable and battery operated
- LCD Display to nearest 1°F
- Temperature operating range of 0°F to 750°F
- Accuracy of ± 2%
- Repeatability of ± 5°F
- Emissivity preset at 0.95

460.43: Preparation of Underlying Surface

HMA mixtures shall be placed only upon properly prepared surfaces that are clean from foreign materials. The underlying surface shall be prepared in accordance with the requirements below, prior to the placement of HMA pavement courses.

A. Subbase or Reclaimed Base.

Prior to the placement of HMA Base Course mixtures, the Contractor shall inspect the prepared subbase or reclaimed base material to ensure that it is in conformance with the required grade, cross-section, and in-place density. Subbase or reclaimed base material that is not in accordance with the plans or specifications shall be reworked or replaced to meet the applicable requirements of Subsection 401: Gravel Sub-Base, Subsection 402: Dense Graded Crushed Stone for Sub-Base, or Subsection 403: Reclaimed Pavement for Base Course and/or Sub-Base before the start of HMA placement. The compacted subbase or reclaimed base shall not be frozen or have standing water when placing HMA.