**SECTION 32 12 16.13**

**HOT MIX ASPHALT PAVING**

BASED ON DFD MASTER SPECIFICATION DATED 12/30/2022

This section has been written to cover most (but not all) situations that you will encounter. Depending on the requirements of your specific project, you may have to add material, delete items, or modify what is currently written. The Division of Facilities Development expects changes and comments from you.

***(Note to Designer: The DFD utilizes the WisDOT Standard Specifications for Highway and Structure Construction (SSHSC) for projects involving asphalt paving.)***

**PART 1 - GENERAL**

**SCOPE**

The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to provide and construct the paving and surfacing as provided for in these specifications and on the drawings. Included are the following topics:

PART 1 - GENERAL

Scope

Related Work

Reference Documents

Quality Assurance

Submittals

PART 2 - MATERIALS

Recycled Products and Materials

Hot Mix Asphalt (HMA) Pavement

Tack Coat

PART 3 - EXECUTION

Hot Mix Asphalt (HMA) Pavement

Pavement Repairs

**RELATED WORK**

***(The designer must determine if this work will impact other related work or Contractors and should revise these specifications accordingly to only include those Sections that apply to the project.)***

Applicable provisions of Division 1 govern work under this Section.

Related Work Specified Elsewhere:

Section 30 05 00 – Common Work Results for all Exterior Work

Section 31 22 16.15 – Roadway Subgrade Preparation

Section 32 11 23.33 – Dense Graded Base

Section 00 00 00 – (Section Title)

**REFERENCE DOCUMENTS**

Where reference is made to WisDOT or SSHSC in this specification it shall mean the pertinent sections of the Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction (SSHSC), current edition, and all supplemental and interim supplemental and interim specifications.

**QUALITY ASSURANCE**

***(Notes to the designer: The designer and project team should decide if density testing and related costs are necessary for the project.)***

The Contractor is to conduct sampling, testing, and analysis as required by this section and elsewhere in the Contract Documents by retaining the services of an independent construction materials testing firm acceptable to DFD. Contractor must maintain a quality control program in accordance with WisDOT SSHSC Section 701 General QMP Requirements and Section 460.2.8 Quality Management Program to ensure that the asphalt produced meets the specified mix design and plan requirements.

The Contractor’s construction materials testing personnel must complete non-destructive nuclear density testing as outlined in Table 32 12 16.13-1. Test results shall be provided to A/E and DFD Construction Representative within 24 hours of being completed. All densities shall meet the requirements outlined in WisDOT SSHSC Subsection 460.3.3

***Table 32 12 16.13 - 1***

|  |  |
| --- | --- |
| Layer | Test/Sample Frequency |
| Lower | *3 random tests/5000 SF placed* |
| *Upper* | *1 random test/5000 SF placed* |

If density is below specified amount, submit proposed corrective action to DFD Project Representative. Corrective action may consist of removal and replacement of deficient pavement or reduced payment, as agreed to by the DFD Project Representative.

**SUBMITTALS**

Provide HMA pavement mix design reports for all mix designs to be used on the project. All mix designs shall meet the requirements outlined in WisDOT SSHSC Sections 450 and 460, and shall be listed on the current WisDOT Approved Mix Design List.

**PART 2 - MATERIALS**

**RECYCLED PRODUCTS AND MATERIALS**

The Wisconsin Department of Administration, Division of Facilities Development (DFD) strongly encourages the use of recycled materials and products containing recycled materials. Bidders and Contractors may submit specifications for recycled materials and products containing recycled materials for consideration by the DFD for use on the project as part of the submittal process following the contract award.

**HOT MIX ASPHALTIC (HMA) PAVEMENT**

***(Notes to the designer: Flexible pavements are to be designed by the methods described in the WisDOT Facilities Development Manual (FDM), Chapter 14, Section 14-10 for roadway or access roads when the soil type and traffic volumes are known. The designer should reference the Wisconsin Asphalt Pavement Association (WAPA) guidelines when making a determination on pavement types for parking lots and areas that exhibit more static loading. The pavement type should be based on guidelines developed by WAPA or as shown in the FDM. The WAPA*** [***Asphalt-Bid-Mix-Specifications-Tear-off-Quick-Reference-Card***](http://www.wispave.org/wp-content/uploads/dlm_uploads/Asphalt-Bid-Mix-Specifications-Tear-off-Quick-Reference-Card.pdf) ***can be used as a quick reference to determine the pavement type, or the WAPA website has a tool that will help provide the correct HMA pavement based on lift thickness, traffic loading, and location. The tool is found here:***

[***https://www.wispave.org/wisconsin-asphalt-bid-mix-specification-tool/***](https://www.wispave.org/wisconsin-asphalt-bid-mix-specification-tool/)***. Typically there will be a different material type specified for both the lower and upper layers. For example if a 4.5” HMA pavement is to be placed in Madison, WI for a small parking lot the two HMA pavements may be 2.5” 3 LT 58-28 S for the lower layer and 2” 4 LT 58-28 S for the upper layer. For the majority of projects, the HMA pavements will be designed for “Low” traffic volumes with a “Standard” asphalt binder. If a typical section of the pavement structure and HMA type is not shown on the plan, the HMA type and thickness should be indicated in the below paragraph.***

Provide HMA pavement thickness and type as indicated on the plan and conforming to the requirements of WisDOT SSHSC Section 450 and Section 460. Utilize the same material type throughout the paving operation unless noted elsewhere on the drawings. Ensure all asphaltic materials provided under this section conform to the requirements of WisDOT SSHSC Section 455 and as revised in any current Supplemental Specifications.

**TACK COAT**

Apply tack coat at a minimum rate of 0.05 gallons per square yard to the lower layer(s) of HMA pavement surface prior to placing upper layer(s) of HMA pavement, unless otherwise noted. Apply at rate of 0.07 gallons per square yard where tack coat is being applied to a milled surface or other hard rigid surface. The surface shall be clean and dry prior to tack coat application. Tack coat shall require a minimum asphalt content of 50% and meet all other requirements of the WisDOT SSHSC Section 455.

**PART 3 - EXECUTION**

**HOT MIX ASPHALT (HMA) PAVEMENT**

Complete all work under this section to WisDOT SSHSC Section 450 and Section 460. Provide HMA layer thicknesses as shown on the drawings. If the drawings do not indicate HMA layer thicknesses, the minimum thickness of the HMA lower layer shall not be less than 1-3/4 inches (12.5 mm nominal aggregate size) and the minimum thickness of the HMA upper layer shall not be less than 1-1/2 inches (9.5 mm nominal aggregate size).

**PAVEMENT REPAIRS**

Sawcut all pavement surfaces to neat and straight lines at the limits of removal by a two-step method. Limit the initial pavement removal to the immediate area of the proposed work. Full depth sawcutting is not required for this phase of removal. After the work is completed, make a full depth sawcut to neat and straight lines outside the widest point of pavement disruption. Sawcut the lines of the repair parallel to existing joints, or parallel to or perpendicular to pavement edges, to form a neat patch. Carefully remove all remaining pavement within the sawcut area to the lines of the sawcut. Do not disturb the existing base materials between the area disturbed by the work and the sawcut line by the sawcutting, pavement removal, or pavement replacement processes.

Remove all walks, curbs, and other jointed paving by sawcutting at the nearest joint beyond the limits of removal.

Adjust all inlets, manholes, catch basins, valve boxes, and other such castings to match new finished grade as incidental work.

***(Notes to the designer: The following paragraphs are intended for use in areas requiring the overlay and/or repair of existing asphaltic pavements. Delete this section if not applicable to the project.)***

Clean and fill all major structural cracks (not alligatored areas) with crack filler conforming to ASTM D-3405 prior to placing new HMA pavement overlay. Place tack coat on all surfaces in accordance with WisDOT SSHSC Section 455. Apply emulsified asphalt tack coat at the rate of 0.05 gallons per square yard to the existing asphalt surface.

Place HMA lower layer in all areas undergoing removal and replacement. Remove existing gravel as necessary to allow placement of lower layer in lift thicknesses as shown on the drawings.

Place HMA upper layer on all roadway, parking lots, service drives, and loading dock areas as designated on the drawings.

**END OF SECTION**