

**2014 ASPHALT PAVEMENT  
RECOMMENDED SPECIFICATIONS FOR  
LOCAL GOVERNMENTS AND NON-GOVERNMENTAL APPLICATIONS**

*This recommended specification incorporates the latest asphalt pavement technologies. It attempts to present the best practices/procedures and processes, but it is not intended to replace sound engineering knowledge, judgment and experience.*

The Indiana Department of Transportation (INDOT) Standard Specifications, dated 2014, Section 402, shall apply with the modifications as noted herein. The current version of the INDOT Standard Specifications, Recurring Special Provisions, and Supplemental Specifications are applicable.

**HMA.01 Description**

This work shall consist of one or more courses of Hot Mix Asphalt (HMA) base, intermediate, surface mixtures or other miscellaneous HMA application

**HMA.02 Quality Control**

HMA shall be supplied from a Certified HMA plant in accordance with Indiana Test Method (ITM) 583 – Certified Volumetric Hot Mix Asphalt Producer Program. HMA shall be transported and placed according to a Quality Control Plan (QCP) prepared by the Contractor in accordance with ITM 803 – Contractor Quality Control Plan for HMA Pavement, and submitted to the Contracting Agency five (5) calendar days prior to commencing HMA paving operations.

**HMA.03 Materials**

HMA materials shall meet the requirements of 904 except Table 1. HMA Coarse Aggregates for surface aggregates in Section 904.03(d) shall modified as follows when the design speed or posted speed limit is equal to or less than 45 mph

Coarse Aggregate Type	Traffic ESALs		
	< 3,000,000	< 10,000,000	≥ 10,000,000
Air-Cooled Blast Furnace Slag	Yes	Yes	Yes
Steel Furnace Slag	Yes	Yes	Yes
Sandstone	Yes	Yes	Yes
Crushed Dolomite	Yes	Yes	Yes
Polish Resistant Aggregates	Yes	Yes	Yes
Crushed Stone	Yes	Yes	(Note 2)
Gravel	Yes	Yes	(Note 2)

Note 2. Crushed Stone or gravel may be used in accordance with Indiana Test Method (ITM) 221

**HMA.04 Design Mix Formula and Mixture Type**

The design mix formula/job mix formula (DMF/JMF), shall be prepared by an INDOT approved Mix Design Laboratory in accordance with Sec. 402.05, and submitted to the Contracting Agency in an acceptable format one week prior to use. The DMF/JMF Type and Maximum Nominal Aggregate Size (NMAS) and shall be based on the following table:

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<b>Mixture Type</b>	<b>Type A *</b>	<b>Type B*</b>	<b>Type C*</b>
<i>Design ESAL</i>	<i>200,000</i>	<i>2,000,000</i>	<i>9,000,000</i>
<i>AADT (Average Annual Daily Traffic)</i>	<i>&lt;4000</i>	<i>4000- 15,000</i>	<i>15,000-30,000</i>
<i>AADTT (Average Annual Daily Truck Traffic)</i>	<i>&lt; 50</i>	<i>50-1700</i>	<i>&gt;1700</i>
<i>Commercial &amp; Residential Application</i>	<i>Residential Driveways, passenger car parking, &lt;500 stalls, &lt; 20 **heavy trucks per day, service stations</i>	<i>Parking Lots with 20-300 **heavy trucks per day, Truck Stops</i>	<i>Heavy Commercial parking with 150-300 **heavy trucks per day</i>
<b>Surface-</b>			
Max. Nominal Aggregate Sizes (NMAS)	4.7mm, 9.5 mm 12.5 mm	4.75mm 9.5 mm 12.5 mm	4.75 mm 9.5mm 12.5 mm
<i>PG Binder</i>	<i>64-22</i>	<i>64-22</i>	<i>70-22</i>
<b>Intermediate-</b>			
Max. Nominal Aggregate Sizes	9.5mm 12.5mm 19.0mm 25.0 mm	9.5mm 12.5mm 19.0mm 25.0 mm	9.5mm 12.5mm 19.0mm 25.0 mm
<i>PG Binder</i>	<i>64-22</i>	<i>64-22</i>	<i>64-22</i>
<b>Base-</b>			
Max. Nominal Aggregate Sizes	19.0 mm 25.0 mm	19.0 mm 25.0 mm	19.0 mm 25.0 mm
<i>PG Binder</i>	<i>64-22</i>	<i>64-22</i>	<i>64-22</i>

\*A higher category mix may be used for a lower category application if the contractor so elects. The substitution will be at no additional cost to the agency.

\*\* Heavy trucks are commercial vehicles with normally 2 axle, six tire or larger

HMA may be produced as warm-mix asphalt (WMA). The DMF/JMF shall list the minimum plant discharge temperature for HMA and WMA as applicable to the mixture. WMA mixtures may be produced by using a water injection foaming device or additives as specified herein and according to the manufactures recommendations

#### **HMA.05 Volumetric Mix Design**

Shall remain as Sec. 402.5 except the Material Adjustment Factor (MAF) will not apply.

#### **HMA.06 Job Mix Formula**

A HMA DMF/JMF per 402 will be developed by a Certified HMA Producer. A DMF/JMF used in the current or previous calendar year that it was developed to  $N_{des}$  will be allowed as long as it meets the requirements of current mix design procedures and mix design guides for aggregate bulk specific gravity ( $G_{sb}$ ) effective October, 2013.

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**HMA.07 Mix Criteria**

Shall remain as Sec. 402.07

**HMA.08 Recycled Material**

Shall remain as Sec. 402.08

**HMA.09 Acceptance of Mixtures**

Acceptance will be on the basis of a Type D Certification in accordance with Sec. 916(d). The HMA Certification shall be the quality control test representing the material and shall include air voids and binder content for material supplied to the project. Type D certification shall be submitted to the Contracting Agency's representative each day in which material is received.

**CONSTRUCTION REQUIREMENTS****HMA.10 General**

Shall remain the same as Sec. 402.10

**HMA.11 Preparation of Surfaces to be Overlaid**

Shall remain the same as Sec. 402.11

**HMA.12 Weather Limitations**

HMA courses less than 110 lb/syd are to be placed when the ambient and surface temperatures are 60° F or above. HMA courses equal to or greater than 110 lb/syd but less than 220 lb/syd are to be placed when the ambient and surface temperatures are 45° F or above. HMA courses equal to or greater than 220 lb/syd are to be placed when the ambient and surface temperatures are 32° F or above. Mixture shall not be placed on a frozen subgrade. However, HMA courses may be placed at lower temperatures provided the density of the HMA course is in accordance with HMA.16 or if approved by the Contracting Agency's representative

**HMA.13 Spreading and Finishing**

Shall remain the same as Sec. 402.13

**HMA.14 Joints**

Shall remain the same as Sec. 402.14

**HMA .15 Compaction**

The HMA mixture shall be compacted with equipment in accordance with 409.03(d) immediately after the mixture has been spread and finished. Rollers shall not cause undue displacement, cracking, or shoving.

Rollers	Number of Roller Applications						
	Courses < 440 lb/syd (240 kg/m <sup>2</sup> )					Courses > 440 lb/syd (240 kg/m <sup>2</sup> )	
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 1	Option 2
Three Wheel	2		4			4	
Pneumatic Tire	2	4				4	
Tandem	2	2	2			4	
Vibratory Roller				6			8
Oscillatory					6		

**HMA.16 Low Temperature Compaction Requirements**

Shall remain the same as Sec. 402.16. Density test reports shall be furnished to the Contracting Agency.

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**HMA.17      Shoulder Corrugations**

Shall remain the same as Sec. 402.17

**HMA.18      Pavement Smoothness**

Shall remain the same as Sec. 402.18

**HMA .19      Method of Measurement**

Shall remain the same as Sec. 402.19 except the MAF shall not apply

**HMA.20      Basis of Payment**

Add the following pay items to Section 402.20

<b>Pay Item*</b>	<b>Pay Unit</b>
HMA Surface Type __, __mm	Ton
HMA Intermediate Type __, __mm	Ton
HMA Base Type __, __mm	Ton

\*Mixture Type shall include the Type from Table in HMA.04 and the Nominal Maximum Aggregate Size (NMAS)