

HOT MIX ASPHALT (HMA) PAVEMENT GUIDE SPECIFICATIONS FOR LOCAL GOVERNMENTS

This guide 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, Section 402, shall apply with the exceptions as noted herein. The current version of the INDOT Specifications, Recurring Special Provisions, and Supplemental Specifications are applicable.

Description: This work shall consist of one or more courses of HMA base, intermediate, surface mixtures or other miscellaneous HMA application, produced from an INDOT Certified HMA plant, in accordance with Indiana Test Method (ITM) 583.

Design Mix Formula and Mixture Type: The design mix formula, prepared in accordance with 402.05, shall be based on the following table:

<i>Mixture Type</i>	<i>Type A *</i>	<i>Type B*</i>	<i>Type C*</i>	<i>Type D *</i>
<i>Design ESAL</i>	<i>200,000</i>	<i>2,000,000</i>	<i>9,000,000</i>	<i>11,000,000</i>
<i>AADT</i>	<i><4000</i>	<i>4000- 15,000</i>	<i>15,000-30,000</i>	<i>>30,000</i>
<i>Surface</i>	<i>9.5, 12.5 mm</i>	<i>9.5, 12.5 mm</i>	<i>9.5, 12.5 mm</i>	<i>9.5, 12.5 mm</i>
<i>Surface - PG Binder</i>	<i>64-22</i>	<i>64-22</i>	<i>70-22</i>	<i>76-22</i>
<i>Intermediate</i>	<i>9.5, 12.5,19.0 mm</i>	<i>9.5, 12.5,19.0 mm</i>	<i>9.5, 12.5, 19.0mm</i>	<i>9.5, 12.5,19.0 mm</i>
<i>Intermediate - PG Binder</i>	<i>64-22</i>	<i>64-22</i>	<i>64-22</i>	<i>76-22</i>
<i>Base</i>	<i>25.0 mm</i>	<i>25.0 mm</i>	<i>25.0mm</i>	<i>25.0 mm</i>
<i>Base - PG Binder</i>	<i>64-22</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.

Recycled Materials

Recycled Asphalt Pavement: (RAP):

Type A & B & C

Surface: Maximum 25% RAP, no change in PG Binder grade.

Base & Intermediate: Maximum 35% RAP, no change in PG Binder grade for 25% or less RAP, for greater than 25% RAP change PG Binder Grade as shown below.

Type D

Surface: Maximum 15% RAP, no change in PG Binder grade.

Intermediate: Maximum 25% RAP, no change in PG Binder grade for 15% or less RAP, for greater than 15% RAP change PG Binder Grade as shown below.

Base: Maximum 35% RAP, no change in PG Binder grade for 25% or less RAP, for greater than 25% RAP change PG Binder Grade as shown below:

PG 64-22 to PG 58-28

PG 70-22 to PG 64-28

PG 76-22 to PG 70-28

Recycled Asphalt Shingles (RAS)

RAS may be used as a substitute for new materials. RAS shall consist of waste from a shingle manufacturing facility or tear-off shingles from roofs (post consumer). RAS shall meet AASHTO specification MP 15, Standard Specification for Use of Reclaimed Asphalt Shingle as an Additive in Hot Mix Asphalt and the mix design shall be done according to AASHTO PP 53 Standard Practice for Design Considerations When Using Reclaimed Asphalt Shingles in New Hot Mix Asphalt.

Up to 5% RAS may be used when the source is manufacturer waste. Up to 3% RAS can be used when source is post consumer. For equivalent RAP calculation, 1% of RAS shall be counted as equivalent to 5% RAP. Maximum allowable percentage of RAP plus equivalent RAP shall not exceed the limits listed under Recycled Asphalt Pavement (RAP) above.

Asphalt binder grade should be selected based on the total RAP according to the guideline listed under Recycled Asphalt Pavement (RAP). When shingles are included as part of the allowable RAP percentage the ratio of added new asphalt binder to total asphalt binder shall be 70% or greater ((added binder/total binder) x 100 >= 70)

Surface Aggregate Type: For Type C Mixtures, surface aggregates shall meet the requirements for less than 3,000,000 ESAL in Section 904.03(d).
For Type D mixtures, surface aggregates shall meet the requirements for less than 10,000,000 ESAL in 904.03(d).R

Density

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 ²)				Courses > 440 lb/syd (240 kg/m ²)	
	Option 1	Option 2	Option 3	Option 4	Option 1	Option 2
Three Wheel	2		4		4	
Pneumatic Tire	2	4			4	
Tandem	2	2	2		4	
Vibratory Roller				6		8

Acceptance of Mixtures: Acceptance shall be based on 402.09. The HMA Certification shall include the PG Binder grade sent to the project.

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