

HMA Guide Specifications for Local Government

Industry Recommendations

Why Use a Local Spec?

- Standardized Specification
- Ease of Use by Locals
- Credibility of HMA Producer Program
- Increase the Bar (Quality)
- Longer Lasting Roads
- Elimination of “personal specs”

Background of Proposed Specification

Association Committee

- ★ Binder Suppliers
- ★ Aggregate Suppliers
- ★ HMA Producers
- ★ Researchers

Basis for Local Specification

New INDOT 402 Specification (09/02)
– Some Exceptions to meet local needs

Mix Design mixtures (No cookbook recipes)

INDOT 402 Exceptions for Local Specification (Industry Recommendations)

3 Types of Mixtures

Type “A” - < 4,000 AADT
• Low Volume (200,000 ESALS)

Type “B” - 4,000 - 30,000 AADT
• Medium Volume (1,000,000 ESALS)

Type “C” - > 30,000 AADT
• High Volume (11,000,000 ESALS)

TYPE A,B, & C MIXTURES

- Surface = 9.5 or 12.5 mm
- Intermediate = 9.5, 12.5, or 19.0 mm
- Base = 25.0 mm



TYPE "A" & "B" MIXTURES

- Use any type of aggregate
 - Stone, Gravel, Dolomite, Slag, etc.



(d) Surface Aggregate Requirements. The surface mixture aggregate selection shall be based on the ESAL category as follows:

Coarse Aggregate Type	Traffic ESAL		
	< 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	Note 1
Polished Resistant Aggregates	Yes	Yes	Note 1
Crushed Stone	Yes	No	No
Gravel	Yes	No	No

Note 1. Polish resistant aggregates or crushed dolomite may be used when blended with ACBF or sandstone but cannot exceed 50% of the coarse aggregate by mass (weight), or cannot exceed 40% of the coarse aggregate by mass (weight) when blended with steel furnace slag.



TYPE "A" & "B" MIXTURES

- Use any type of aggregate
 - Stone, Gravel, Dolomite, Slag, etc.
- Use PG 64-22 Binder
 - Up to 15.0% RAP
- Use PG 58-28 Binder
 - From 15.1 - 25.0% RAP



Type "C" Mixtures

Can only use the following Coarse Aggregates in Surface Mixtures

Crushed Dolomite

Sandstone

Blast or Steel Furnace Slag

Polished Resistant Aggregates

Crushed Stone or Gravel not Allowed



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Crushed Dolomite	Yes	Yes	Note 1
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Gravel	Yes	No	No

Note 1 Polish resistant aggregates or crushed dolomite may be used when blended with ACBF or sandstone but cannot exceed 50% of the coarse aggregate by mass (weight), or cannot exceed 40% of the coarse aggregate by mass (weight) when blended with steel furnace slag.



TYPE "C" MIXTURES

- Use PG 76-22 Binder
 - Surface (Up to 15.0% RAP)
 - Intermediate (Up to 15.0% RAP)
- Use PG 70-28 Binder
 - Surface (From 15.1 - 25.0% RAP)
 - Intermediate (From 15.1 - 25.0% RAP)

TYPE "C" MIXTURES for Base

- Use PG 64-22 Binder
 - Base (Up to 15.0% RAP)
- Use PG 58-28 Binder
 - Base (From 15.1 - 25.0% RAP)

Mixture Type	Type A	Type B	Type C
Design ESAL	200,000	1,000,000	11,000,000
AADT	<4000	4000-30,000	>30,000
Surface	9.5, 12.5 mm	9.5, 12.5 mm	9.5, 12.5 mm
Surface - PG Binder	64-22	64-22	76-22
Intermediate	9.5, 12.5, 19.0 mm	9.5, 12.5, 19.0 mm	9.5, 12.5, 19.0 mm
Intermediate - PG Binder	64-22	64-22	76-22
Base	25.0 mm	25.0 mm	25.0 mm
Base - PG Binder	64-22	64-22	64-22

Type "A, B, & C" Mixtures Acceptance Requirement

Mixture Acceptance based on 402.09

- ☑ Air Voids
- ☑ Binder Content
- ☑ Type "D" Certification

Frequency of Tests

- ☑ Per Quality Control Plan at HMA Plant

Hot Mix Asphalt Certification

Project Number _____ Date _____
 Certified HMA Producer Name _____
 Certified HMA Plant Number _____
 HMA Type and Designation _____
 JMF Number _____ PG Binder Grade _____

Specification reference **INDOT 402.09**

This is to certify that the following test results for air voids and binder content represent the HMA mixture furnished for this contract.

Air Voids _____ (~1.5% from JMF)

Binder Content _____ (~0.7% from JMF)

* () First test of JMF for the year. A production sample shall be taken within the first 250 T (250 MG) produced and test results submitted within 48 HR of the time the sample was taken.

* If applicable

 Certified Asphalt Technician

 Company

Any falsification of this document by the technician can result in loss of the technician's INDOT Certification.
 12-02-02

Type "A, B, & C" Density Acceptance Requirement 402.15 Standard Roller Train

- ☑ Equipment in accordance with 409.03(d)

- ☑ Project Quality Control Plan

Advantages 402 Specification

Primary Reasons

- All mixtures are designed by an Certified Mix Design Laboratory
- HMA produced by an INDOT Certified Volumetric Hot Mix Asphalt Producer
- Improve Quality
- Provide Uniformity (economical)

Certified Volumetric Hot Mix Asphalt Producer

What is it and what does it mean

A COMMITMENT TO QUALITY

WHAT IS IT?

- A program whereby the producer takes responsibility for all aspects of the production of Quality HMA in accordance with contract/specification requirements.
- INDOT monitors the Producers production, sampling, & testing procedures.

REQUIREMENTS

- Certified Asphalt Technicians
- Laboratory
- Calibrated Testing Equipment
- Maintain a Daily Diary

Aggregate & Binder Testing

Designate a Materials Sampling and Testing Program. This program MUST be approved by the Department.

- Aggregates
 - Stockpile
 - Blended (Belt sample or Extracted/Burn agg)
- Binder (Liquid Sampling)

RAP Testing

Recycled Materials

- Binder Content
- Gradation
- Moisture
- Coarse Aggregate Angularity

HMA Testing

HMA Sampled at plant

- Binder Content of Mix
- Moisture
- Temperature



More HMA Testing

HMA Sampled from Pavement

- Air Voids
- VMA
- Binder Content
- Moisture



Production Requirements

- Binder Management
- Aggregate Management
- RAP Management
- HMA Plant Calibrations
- Mix Temperature Management
- Mix Moisture Management
- HMA Storage



Truck Management

- Truck Bed Maintenance
- Truck Loading
- Tarping
- Truck Unloading



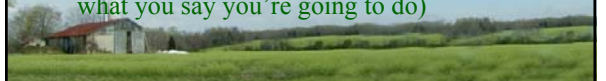
CONTROL CHARTS

- Charts must be maintained on certain items
- Action Limits on Charts
- Corrective Action Plan
- Documented in Daily Diary



Written Quality Control Plan

- This is the contractor's working document for a Certified Volumetric HMA Plant.
- Each HMA plant has its own unique plan.
- Required to do what your plan says (Do what you say you're going to do)



CERTIFIED HMA PRODUCER ADVANTAGES FOR LOCALS

- Oversight is Managed by INDOT
- Compliance Monitored by INDOT

Because of Trust and Partnering

Between the INDOT,
FHWA, and
Industry...

Certified Accepted HMA Mixes

- 304.04 HMA Patching
- 304.05 Widening with HMA
- 402.04 HMA Mixtures Type A, B, or C
- 402.07(a) HMA Rumble Strips
- 402.07(b) HMA Wedge and Leveling
- 402.07(c) Temporary HMA Mixtures



Certified HMA Mixes

- 503.03(e) HMA Terminal Joints
- 507.05(b) HMA for Partial Depth Patching
- 604.07(c) HMA for Sidewalk
- 605.07(c) HMA for Curbing
- 610.02 HMA for Approaches
- 611 HMA for Crossovers
- 718.04 HMA for Underdrains
- 801.11 HMA for Temporary Crossovers

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SUMMARY

- Use INDOT's New 402 Specification As a Base Document With Listed Exceptions.
- 3 Types of Mixtures, Type A, B, and C.
- Acceptance by Type “D” Certification.
- Controlled use of RAP.
- INDOT Certified Volumetric HMA Producer Program.

Asphalt Pavements Are



Versatile



THE NEW ASPHALT, ABSOLUTELY!

SMOOTH | DURABLE | SAFE | QUIET