



**SPECIAL PROVISIONS  
FOR  
PLANT AGING OF FLEXIBLE PAVING MIXTURES**

**Boone County  
RTB-RB-34(013)--90-00**

**Effective Date  
February 6, 2013**

**THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS.**

**121017.01 DESCRIPTION.**

These special provisions require production and placement of mixtures with two levels of asphalt absorption, two mix types (WMA and HMA), at two plant temperatures. Unless otherwise stated, produce and place mixtures per the Supplemental Specifications for Flexible Pavement.

**121017.02 MATERIALS.**

Test sections are shown in Table 121017.02-1.

**A. Low Absorption Test Sections.**

Use one job mix formula (JMF) for all low absorption sections (HMA and WMA).

**B. High Absorption Test Sections**

Use one job mix formula (JMF) for all high absorption sections (HMA and WMA).

**C. General Requirements**

Use a PG 58-28 binder and similar gradations for all mixtures. Up to 20% certified RAP may be used. Classified and unclassified RAP may be used per the Supplemental Specifications for Flexible Pavement. The maximum binder replacement from RAP shall be 20%. Do not use RAS. Use water-injection as the WMA technology.

**Table 121017.02-1: Test Sections**

	Bid Item	2303-0033500	2599-9999020
	Description	HOT MIX ASPHALT MIXTURE (1,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT, LOW ABSORPTION	HOT MIX ASPHALT MIXTURE (1,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT, HIGH ABSORPTION
Test Secn	Asphalt Binder Absorption in Mix, %	< 1.0 (Low Absorption)	≥ 1.5 (High Absorption)

	Location	Leg	Qty, tons	Mix Type <sup>2</sup>	Plant Temperature (Surface Lift) <sup>1</sup>	Qty, tons	Mix Type <sup>2</sup>	Plant Temperature (Surface Lift) <sup>1</sup>
1	1st St	North	427.4	HMA	HMA Control			
		South	427.4	HMA	HMA Control			
2	2nd St	North	427.4	HMA	HMA Control + 30°F			
		South	427.4	HMA	HMA Control + 30°F			
3	3rd St	North	427.4	HMA	HMA Control + 30°F			
		South	427.4	WMA	WMA Control			
4	4th St	North	427.4	WMA	WMA Control			
		South	427.4	WMA	WMA Control + 30°F			
4	5th St	North	427.4	WMA	WMA Control + 30°F			
		South <sup>5</sup>	427.4	WMA	WMA Control + 30°F			
5	7th St	North				427.4	HMA	HMA Control
		South				427.4	HMA	HMA Control
6	8th St	North				427.4	HMA	HMA Control + 30°F
		South				427.4	HMA	HMA Control + 30°F
7	9th St	North				427.4	HMA	HMA Control + 30°F
		South				427.4	WMA	WMA Control
8	10th St	North				427.4	WMA	WMA Control
		South <sup>5</sup>				427.4	WMA	WMA Control + 30°F
8	11th St	North <sup>4</sup>				427.4	WMA	WMA Control + 30°F
		South <sup>5</sup>				427.4	WMA	WMA Control + 30°F
9	12th St <sup>3</sup>	North	427.4	HMA	X% Binder Replacement <sup>3</sup>			
		South	427.4	HMA	Y% Binder Replacement <sup>3</sup>			
TOTAL			5,128.8			4,274.0		

1. For the surface lift, select production temperatures (temperature inside the mixing drum) from the following ranges:  
 HMA Control 280°F - 330°F  
 WMA Control 215°F - 280°F
2. For WMA sections, use a water injection technology.
3. Replace a percentage of the virgin asphalt binder with bioasphalt unless otherwise directed by the Engineer. The Bioasphalt material will be provided. Incorporate the bioasphalt at varying levels under the direction of Iowa State University researchers. Technical support will be provided.
4. Apply tack coat directly on fabric. The first lift shall be 4 inches. The paver tractor unit shall be mounted on crawler treads (tracks) unless approved by the Engineer. Do not use a windrow pick-up process. Discharge mixture directly into paver hopper.
5. Provide a nuclear gauge for density measurement (information only) after each roller pass at location(s) defined by the researchers.

**D. Production**

Produce mixes at the respective plant temperature identified in Table 121017.02-1 and ensure the silo storage time to load-out remains consistent (± 20 minutes) among mixes. The maximum allowable production temperature in Article 2303.03, C, 3, d, 4 of the Supplemental Specifications for Flexible Pavement will be waived for sections requiring plant temperatures to be 30°F above

the control temperature.

**E. Quality Assurance/Quality Control**

**1. Uncompacted Mixture.**

Provide safe access to researchers sampling from the truck at the point of load-out.

For each lift of each test section, take at least one hot box sample for quality control from behind the paver. When paving multiple lifts in one day on a test section, one box may be used per test section.

Acceptance for lab voids will be per Article 2303.03, D, 3, b, 3, i, 1 of the Supplemental Specifications for Flexible Pavement. Acceptance for lab voids on 12<sup>th</sup> street will be per Article 2303.03, E of the Supplemental Specifications for Flexible Pavement. Retain all lab compacted QC specimens for researchers until notified by the research team.

**2. Compacted Mixture.**

Each lift of each test section will constitute a lot. Lots may be combined when multiple lifts of the same test section are placed in the same day. Take at least eight cores for each lot unless otherwise directed by the Engineer. Acceptance for field voids will be per Article 2303.03, D, 4, a, 6, a of the Supplemental Specifications for Flexible Pavement. Retain all field cores for the test sections after acceptance testing and submit to the research team. Acceptance for field voids on 12<sup>th</sup> street will be per Article 2303.03, E of the Supplemental Specifications for Flexible Pavement. Additional cores may be required for information only.

**3. Plant and Site Access.**

Provide advanced notification of mixture placement (2 weeks minimum) to the Engineer such that research sampling can be coordinated. Provide safe access to research personnel at the plant and on the grade to collect samples.

**121017.03 CONSTRUCTION.**

Construction shall be per Article 2303.03 of the Supplemental Specifications for Flexible Pavement.

**121017.04 METHOD OF MEASUREMENT.**

Method of measurement shall be per Article 2303.04 of the Supplemental Specifications for Flexible Pavement.

**121017.05 BASIS OF PAYMENT.**

Basis of payment shall be per Article 2303.05 of the Supplemental Specifications for Flexible Pavement.