

HOT MIX ASPHALT OVERLAYS**PART 1 - GENERAL****1.01 SECTION INCLUDES**

HMA Overlays

1.02 DESCRIPTION OF WORK

Includes the requirements for the construction of HMA overlay surface course placed upon an existing pavement.

1.03 SUBMITTALS

Comply with Division 1 - General Provisions and Covenants and [Section 7020, 1.03](#).

1.04 SUBSTITUTIONS

Comply with Division 1 - General Provisions and Covenants.

1.05 DELIVERY, STORAGE, HANDLING, AND SALVAGING

Comply with Division 1 - General Provisions and Covenants and [Section 7020, 1.05](#).

1.06 SCHEDULING AND CONFLICTS

Comply with Division 1 - General Provisions and Covenants, as well as [Section 7020, 1.06](#).

1.07 SPECIAL REQUIREMENTS

None.

1.08 MEASUREMENT AND PAYMENT

Comply with [Section 7020, 1.08](#), except as modified herein:

A. HMA Overlay by Ton:

- 1. Measurement:** Measurement will be in tons of HMA overlay.
- 2. Payment:** Payment will be at the unit price per ton of HMA overlay.
- 3. Includes:** Unit price includes, but is not limited to, asphalt mix with asphalt binder, tack coats between layers, construction zone protection, and quality control.

B. HMA Overlay by Square Yards:

- 1. Measurement:** Measurement will be in square yards for each different thickness of HMA overlay. The area of manholes, intakes, or other fixtures in the pavement will not be deducted from the measured pavement area.
- 2. Payment:** Payment will be at the unit price per square yard for each thickness of HMA overlay.
- 3. Includes:** Unit price includes, but is not limited to, asphalt mix with asphalt binder, tack coat, construction zone protection, and quality control.

PART 2 - PRODUCTS**2.01 HMA OVERLAY MATERIALS**

Comply with [Iowa DOT Section 2303](#), with the following exception:

Follow the procedure outlined in [Iowa DOT Materials I.M. 510](#) for HMA mixture designs, except replace Table 1 in Appendix A, HMA Mixture Design Criteria with the SUDAS HMA Mixture Design Criteria (Table 7020.01) (Tables 2 through 4 in Appendix A still apply).

2.02 WARM MIX ASPHALT MATERIALS

If use of warm mix asphalt (WMA) is approved by the Jurisdiction, comply with [Iowa DOT Section 2303](#).

2.03 RECYCLED ASPHALT MATERIALS

When recycled asphalt materials (RAM) are used and they exceed 20% replacement of the total binder, the binder grades may need to be modified. Comply with [Iowa DOT Materials I.M. 510](#).

- A. Recycled Asphalt Pavement:** If use of recycled asphalt pavement (RAP) is approved by the Jurisdiction, comply with [Iowa DOT Section 2303](#).
- B. Recycled Asphalt Shingles:** If use of recycled asphalt shingles (RAS) is approved by the jurisdiction, comply with [Iowa DOT Section 2303](#).

2.04 BINDER GRADES

- A. Conventional Overlays:** Use the specified binder grade.
- B. HMA Interlayer:** Use PG 58-34E meeting AASHTO T 321 with minimum 100,000 cycles to failure. Comply with [Iowa DOT Materials I.M. 510A](#). Do not use RAP.
- C. High Performance Thin Lift:** Use PG 64-34E+ complying with requirements of PG 64-34E except that a minimum percent recovery of 90% when tested at 64°C per AASHTO T 350 at 3.2kPa is required. Comply with [Iowa DOT I.M. 510A](#). Do not use RAS.

2.05 HIGH PERFORMANCE THIN LIFT**A. Mix Design:**

| | |
|-------------------------------------|------------------------------|
| Design Gyration | 50 |
| Design Voids Target (based on %Gmm) | ≤ 2.0 |
| Film Thickness | 8.0 to 15.0 |
| Aggregate Quality | A |
| Minimum crushed content | 50% |
| FAA minimum | 40 |
| Minimum sand equivalency | 50 |
| Friction Aggregate | Minimum 50% Type 4 or better |

- B. Replacement:** Do not use more than 15% binder replacement. Do not use RAS.
- C. Hamburg Testing:** Compact to 3.5% air voids. No more than 8 mm rutting in first 8,000 passes.

2.05 HIGH PERFORMANCE THIN LIFT (CONTINUED)**D. Gradation:**

| Sieve Size | Minimum Percent Passing | Maximum Percent Passing |
|-------------------|------------------------------------|------------------------------------|
| 1 1/2" | | |
| 1" | | |
| 3/8" | 91 | 100 |
| No. 4 | | 90 |
| No. 8 | 27 | 63 |
| No. 16 | | |
| No. 30 | | |
| No. 50 | | |
| No. 100 | | |
| No. 200 | 2 | 10 |

2.06 NOMINAL AGGREGATE SIZE FOR ASPHALT OVERLAYS

Nominal aggregate size dictates lift thickness. Minimum lift thickness should be at least 3 times the nominal maximum aggregate size to ensure aggregate can be aligned during compaction to achieve required density. Therefore, desired lift thickness can direct the decision on nominal aggregate size to use.

PART 3 - EXECUTION**3.01 HMA OVERLAY**

Comply with [Section 7020](#), [Iowa DOT Section 2303](#), [Section 7040](#), and the following:

A. Preparation of Existing Pavement:

1. Remove pavement by milling as required by the contract documents. Mill to the depth, cross-section, or profile specified.
2. Sweep existing pavement with approved broom. Provide dust control during brooming.
3. If milling is not required, correct irregularities in existing pavement cross slope with partial patching, full-depth patching, and leveling base coat prior to placing the overlay. Use base or intermediate course mixes to correct irregularities. Surface course thickness per plan.

B. Special Requirements for Thin Lift Overlays and HMA Interlayer:

1. Apply tack coat prior to placement of thin lift overlay and HMA interlayer. Comply with [Section 7020](#).
2. Compact with static steel wheel roller.

3.02 PROTECTION FROM TRAFFIC

Comply with [Section 7020, 3.03](#).

3.03 DEFECTS OR DEFICIENCIES

Comply with [Section 7020, 3.04](#).

3.04 PAVEMENT SMOOTHNESS

Comply with [Section 7020, 3.05](#).

3.05 QUALITY CONTROL

A. General: Comply with [Section 7020, 3.06](#).

B. Special Requirements for Thin Lift Overlays and HMA Interlayer:

1. Complete field voids for Class II compaction as defined in [Iowa DOT Section 2303](#).
2. Sample and test from windrow or hopper. Apply [Iowa DOT Article 2303.05, A, 3](#) for AAD acceptance. Air void target is based on approved JMF.
3. Take at least one cold feed each day for gradation control.

3.06 REMOVAL OF PAVEMENT

Comply with [Section 7040](#).

END OF SECTION