

**USE WITH 2006 STANDARDS.**

**USE WITH nSSP 39-000 HOT MIX ASPHALT, SUPERPAVE**

**Use this nSSP for PILOT PROJECTS ONLY**

**Use when requiring contractor to produce HMA utilizing the Superpave mix design method**

**Use for projects with HMA-SP (Type A) or rubberized hot mix asphalt RHMA-SP-G.**

**Use this nSSP only with approval of the Office of Roadway Materials Testing. Contact Joseph Peterson.**

**BEES item codes possibly triggered by this SSP are:**

**3901XX Hot Mix Asphalt, Superpave (Type A)**

**3901XX Rubberized Hot Mix Asphalt, Superpave (Gap Graded)**

**390135 Hot Mix Asphalt (Leveling)**

**397005 Tack Coat**

**394060 Data Core**

**Use other HMA BEES item codes required by the plans or other SSPs (e.g., RHMA, OGFC, dike, rumble strips, etc.)**

**1\*. Fill in HMA Type either "hot mix asphalt, superpave (HMA-SP) (Type A)" or "rubberized hot mix asphalt, superpave (gap graded) (RHMA-SP-G)". Edit for multiple types.**

## **10-1. HOT MIX ASPHALT**

### **GENERAL**

#### **Summary**

This work includes producing and placing \_\_\_\_\_.

**2**

HMA-SP (Type A) and RHMA-SP-G must comply with section titled "Hot Mix Asphalt, Superpave" of these special provisions.

### **MATERIALS**

#### **Asphalt Binder**

**3\*. Delete paragraphs 3\* if there is no HMA Type A-SP on the project. Fill in asphalt binder grade. See Design Information Bulletin 86 to determine asphalt binder grade. Edit for multiple types and grades.**

The grade of asphalt binder mixed with aggregate for HMA-SP (Type A) must be \_\_\_\_\_.

**4\*. Delete paragraph 4\* if there is no RHMA-G-SP on the project Fill in asphalt binder grade. See Design Bulletin 86 to determine asphalt binder grade. Edit for multiple grades.**

Asphalt binder mixed with asphalt modifier and crumb rubber modifier (CRM) for asphalt rubber binder must be PG \_\_\_.

### Aggregate

**5\*. \*. Delete paragraphs 5\* if there is no HMA Type A-SP on the project. Use the following table to determine the HMA grading. Edit for multiple types and grades.**

| Specified Total Thickness Range | Grading  |
|---------------------------------|----------|
| 0.08 foot – 0.125 foot          | 3/8-inch |
| 0.125 foot – 0.20 foot          | 1/2-inch |
| 0.20 foot and above             | 3/4-inch |

The aggregate for HMA\_SP (Type A) must comply with the \_\_\_\_\_ grading.

**6. Delete paragraphs 6-8 if there is no RHMA-G-SP on the project Edit for aggregate grading. Use "1/2-inch" grading if layer thickness is at least 0.10 foot and use "3/4-inch" grading if layer thickness is at least 0.20 foot. Edit for multiple grading.**

The aggregate for RHMA-SP-G must comply with the \_\_\_\_\_ grading.

**7. Do not edit except subparagraph 5. For subparagraph 5, insert the percent air voids. Determine percent air voids based on the following table:**

| Traffic<br>Index (10-yr) | Region   |        |         |        |
|--------------------------|----------|--------|---------|--------|
|                          | Mountain | Valley | Coastal | Desert |
| 0 - 6                    | 3.0      | 3.0    | 3.0     | 3.0    |
| >6 - 10                  | 4.0      | 4.0    | 4.0     | 5.0    |
| >10                      | 4.0      | 5.0    | 5.0     | 5.0    |

### Asphalt Rubber Binder Content

Determine the amount of asphalt rubber binder to be mixed with the aggregate for RHMA-SP-G as specified in section titled "Hot Mix Asphalt Mix Design Requirements" of these special provisions except:

1. Base the calculations on the average of 3 briquettes produced at each asphalt rubber binder content.
2. Plot asphalt rubber binder content versus average air voids content for each set of three specimens and connect adjacent points with a best-fit curve.
3. Calculate voids in mineral aggregate (VMA) and voids filled with asphalt (VFA) for each specimen, average each set, and plot the average versus asphalt rubber binder content.
4. Calculate the dust proportion and plot versus asphalt rubber binder content.

5. From the curve plotted in Step 2, select the theoretical asphalt rubber binder content that has \_\_\_ percent air voids.
6. At the selected asphalt rubber binder content, evaluate corresponding voids in mineral aggregate, voids filled with asphalt, and dust proportion to verify compliance with requirements. If necessary, develop an alternate composite aggregate gradation to conform to the RHMA-SP-G requirements.
7. Record the asphalt rubber binder content in Step 5 as the Optimum Bitumen Content (OBC).
8. To establish a recommended range, use the OBC as the high value and 0.2 percent less as the low value. Notwithstanding, the recommended range must not extend below 7.5 percent. If the OBC is 7.5 percent, then there is no recommended range, and 7.5 percent is the recommended value.

## 8

Laboratory mixing and compaction must comply with AASHTO R 35, except the mixing temperature of the aggregate must be between 300 °F and 325 °F. The mixing temperature of the asphalt-rubber binder must be between 375 °F and 425 °F. The compaction temperature of the combined mixture must be between 290 °F and 300 °F.

## CONSTRUCTION

**Paras 9 through 18 are miscellaneous clauses for HMA projects. Delete paragraphs that do not apply.**

### **9. Use when rumble strips are shown on the plans.**

#### **Rumble Strips**

Construct rumble strips in the top layer of new HMA surfacing.

#### **Vertical Joints**

**10. Use on 2-lane highways where the thickness of HMA is 0.15 foot or less and the vertical joint between lanes is to be kept to a minimum. Do not use this para with Para 13.**

If you perform half-width paving, at the end of each day's work the distance between the ends of adjacent surfaced lanes must not be greater than can be completed in the following day of normal paving.

**11. Use when shoulders or median borders are to be paved.**

Before opening the lane to public traffic, pave shoulders and median borders adjacent to a lane being paved.

**12. Use on projects or portions of projects with HMA surfacing thicker than 0.15 foot. Delete this para if Para 13 is used.**

Do not leave a vertical joint more than 0.15 foot high between adjacent lanes open to public traffic.

**13. Use if a vertical joint is not allowed between lanes open to traffic, regardless of thickness.**

Place HMA on adjacent traveled way lanes so that at the end of each work shift, the distance between the ends of HMA layers on adjacent lanes is between 5 feet and 10 feet. Place

additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another approved bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

### Widening

**14. Use for widening if new structural section is to be placed to the elevation of the existing surfacing for the entire length of the project before placing the uppermost layer of HMA. If a surface treatment other than HMA is to be placed on the existing pavement, edit "HMA" to match the surface treatment. Delete "on both sides of the existing pavement," if widening is only on one side.**

If widening existing pavement, construct new structural section on both sides of the existing pavement to match the elevation of the existing pavement's edge for the project's entire length before placing HMA over the existing pavement.

**15. Use when widening is not continuous for the entire length of the project, and new structural section is to be constructed to the elevation of the existing surfacing at each location of widening before placing the uppermost layer of HMA surfacing at each location. If a surface treatment other than HMA is to be placed on the existing pavement, edit "HMA" to match the surface treatment. Delete "on both sides of the existing pavement," if widening is only on one side.**

If widening existing pavement, construct new structural section on both sides of the existing pavement to match the elevation of the existing pavement's edge at each location before placing HMA over the existing pavement.

**16\*. Use when the structural section is to be constructed to the elevation of the existing surfacing for the specified lengths before placing the uppermost layer of HMA surfacing at each location. If a surface treatment other than HMA is to be placed on the existing pavement, edit "HMA" to match the surface treatment. Fill in the increment. Delete "on both sides of the existing pavement," if widening is only on one side.**

If widening existing pavement, construct new structural section on both sides of the existing pavement to match the elevation of the existing pavement's edge in increments of at least \_\_\_\_\_ feet before placing HMA over the existing pavement.

### Conform Tapers

**17. Use when conform tapers are used in place of paving shoulders and/or median borders.**

Place shoulder conform tapers concurrently with the adjacent lane's paving.

**18. DO NOT use for paving driveways and road connections. This paragraph covers the short conform taper at the edge of pavement.**

Place additional HMA along the pavement's edge to conform to road connections and private drives. Hand rake, if necessary, and compact the additional HMA to form a smooth conform taper.