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Include if using a Section 402 pay item (projects with **more** than 7000 tons of asphalt concrete pavement).

Use on projects when a Hveem or Marshall job-mix formula will be developed for the specific project, and statistical acceptance will be used. Be mindful of the project duration: it takes 1 month to do a mix design.

## Section 402. — ASPHALT CONCRETE PAVEMENT BYHVEEM OR MARSHALL MIX DESIGN METHOD

Enter the pavement roughness type and asphalt binder grade in the highlighted areas below. Materials will provide to the designer the following:

**Roughness type**: Use the following guidelines:

**Type I** is for 3R mill and fill ONE lift. This requires before and after IRI measurement.

-Type I-A is for speeds greater than 35 mph.

-Type I-B is for speeds less than 35 mph.

**Type II** is for 3R mill and fill TWO lifts. This requires before and after IRI measurement.

-Type II-A is for speeds greater than 35 mph.

-Type II-B is for speeds less than 35 mph.

**Type III** is for 4R and 3R work with pulverization, base, or other typical section work prior to placing the asphalt.

-Type III-A is for speeds greater than 35 mph.

-Type III-B is for speeds than 35 mph.

**Asphalt binder grade**: Binder grade is project specific.

**Pressure Aging Vessel Temperature**: The default temperature should be 212°F. If the project is in a desert environment the temperature could change to 230°F in thehighlighted area below.

**Construction Requirements**

**402.03 Composition of Mix (Job-Mix Formula).** Add the following:

A minimum of 1.0 percent antistrip additive type 3 (lime) is required in the asphalt concrete mixture.

Aggregate grading designation is ¾-inch or ½-inch as shown in Table 703-4.

Pavement roughness is type <<<I-A, I-B, II-A, II-B, III-A, or III-B>>> and IV as shown in Subsection 402.16.

Asphalt binder grade is PG <<<xx-xx>>>. The Pressure Aging Vessel test temperature is <<<212>>> °F.

Add the following after the first paragraph:

If more than 1.0 percent hydrated lime is proposed in the JMF, provide AASHTO T 283 test results showing the additional lime is necessary to meet the minimum tensile strength ratio requirements in Table 402-1.

**402.03(e) Verification.** Delete Subsections (3) and (7) and substitute the following:

**(3) Bulk specific gravity of aggregate (Gsb).** The Contractor’s coarse and fine Gsb is verified if the CO’s results are within 0.038 for AASHTO T 85 and 0.066 for AASHTO T 84.

**(7) TSR.** The Contractor’s TSR result is verified if the CO’s result is within the specification limit in Table 402-1.