703.05 Aggregate for Cover Coat Material. Aggregates for cover coat material shall be crushed stone, crushed slag, crushed gravel, or natural gravel. Aggregates shall be composed of clean, tough, durable fragments free from an excess of flat, elongated, soft, or disintegrated pieces and free from fragments coated with dirt or other objectionable matter. Slag shall be air-cooled blast-furnace slag reasonably uniform in density.

The aggregate shall conform to the following requirements:

(1) The percentage of wear, Los Angeles Abrasion Test (AASHTO T 96), shall not be more than 35.

(2) The maximum amount of flat and elongated aggregate with a ratio of 3:1 shall not exceed 12 percent as determined by ASTM D4791.

(3) When blast-furnace slag is used, the weight per cubic foot shall be at least 70 pounds.

(4) For Type I, II, or IV cover coat material, 90 percent by weight of the particles retained on the 4.75 mm (No. 4) sieve shall have at least two fractured faces when tested per Colorado Procedure 45.

(5) Lightweight aggregate used for cover coat material shall be an aggregate prepared by expanding shale, clay, or slate in a rotary fired kiln. Lightweight aggregate shall have a dry loose unit weight of 35 to 55 pounds per cubic foot determined per AASHTO T 19, Shoveling Procedure. The total mass of the test sample of lightweight aggregate used in AASHTO T 96 (Los Angles Abrasion) shall be 2,000 g.

Table 703-7
GRADATION SPECIFICATIONS FOR COVER COAT AGGREGATE

Sieve Size	Percent by Weight Passing Square Mesh Sieve		
	9.5 mm (3⁄8") Type 1	12.5 mm (1/2") Type II	19.0 mm (3/4")* Type IV
19.0 mm (3/4")			100
12.5 mm (1/2")		100	95-100
9.5 mm (3⁄8")	100	65-85	60-80
4.75 mm (#4)	0-15	0-10	0-10
75 µm (#200)	0-1.5	0-1.5	0-1.5
*Type IV shall be used only with lightweight aggregates.			

703.06 Mineral Filler. Mineral filler shall conform to the requirements of AASHTO M 17 and shall consist of rock dust, slag dust, hydrated lime, hydraulic cement, fly ash, or other suitable mineral matter. It shall be free of organic impurities and agglomerations. When used, it shall be dry enough to flow freely.

Mineral filler shall be graded within the following limits:

Table 703-8
MINERAL FILLER GRADATION

Sieve Size	Mass Percent Passing Square Mesh Sieves
600 µm (No. 30)	100
300 µm (No. 50)	95-100
75 µm (No. 200)	70-100

Mineral filler shall have a plasticity index not greater than four excluding hydrated lime and hydraulic cement.
If mineral filler other than limestone dust is used in stone matrix asphalt (SMA) it shall consist of mineral matter that meets the requirements of Tables 703-9, 703-10 and the following:

Alternative mineral filler shall consist of finely divided mineral matter such as rock dust, slag dust, fly ash, loess, or other suitable mineral matter. Calcium oxide content of any mineral filler shall not exceed 22 percent.

Alternative mineral filler test data shall be provided as part of the SMA mix design submittal and as required in Table 703-9 during production.

The Contractor shall sample and test alternative mineral filler at the frequencies listed in Table 703-9. Production will be suspended if alternative mineral filler test results fail to meet requirements. The Contractor shall submit written plans to correct the mineral filler operation to the Engineer for approval before commencing paving.

Table 703-9
REQUIRED TESTING FOR ALTERNATIVE
SMA MINERAL FILLERS

Type of Test	Contractor Testing Frequency	Specification Limit	Remarks
Plasticity Index AASHTO T90	One per 10,000 tons of SMA placed♦	4% Maximum	▲
Hydrometer Analysis AASHTO T88	One at Mix Design submittal	Report	
Gradation AASHTO T37	One per 10,000 tons of SMA placed♦	Table 703-9	▲
Calcium Oxide Content ASTM C25	One at Mix Design submittal	22% Maximum	
Modified Rigden Voids – NAPA Publication IS-101	One per 10,000 tons of SMA placed♦	Shall not exceed 50	▲

♦ The minimum frequency shall be twice per project

▲ Sampling of alternative mineral fillers shall be at the point of introduction to the SMA and a split sample shall be submitted to the Engineer

Table 703-10
ALTERNATIVE SMA MINERAL GRADATION

(AASHTO M17/ASTM D242-95)	
Sieve	**Percent Passing**
600 µm (#30)	100
300 µm (#50)	95 - 100
75 µm (#200)	70 - 100

703.07 Bed Course Material.

(a) Bed course material for sidewalks, curbing, and bikeways shall consist of cinders, sand, slag, gravel, crushed stone, or other approved material of such gradation that all particles shall pass through a sieve having 19.0 mm (3/4 inch) square openings.

(b) Bed course material for slope protection, or riprap filter blanket shall be a porous, free draining material consisting of sand, gravel, cinders, slag, crushed stone, or other approved free draining material. This material shall meet the following gradation requirements: