

SECTION 107

COARSE AGGREGATE FOR USE IN PORTLAND CEMENT CONCRETE

107.1 DESCRIPTION

- A. Coarse Aggregate for Concrete Pavement:** Shall consist of crushed limestone ledge rock or other crushed quarry rock and shall be from a source that is approved by the SD DOT. Coarse aggregate for all other PCC pavements shall conform to Size #1 or Size #15.
- B. Coarse Aggregate for Bridge Deck Resurfacing:** For bridge deck resurfacing refer to current SD DOT specifications.
- C. Coarse Aggregate for Class M6 Concrete:** Shall consist of crushed limestone ledge rock or other crushed quarry rock and shall be from a source that is approved by the SD DOT. Coarse aggregate for Class M6 concrete shall meet the gradation requirements for Size #1.
- D. Coarse Aggregate for Precast Concrete:** Shall consist of crushed limestone ledge rock or other crushed quarry rock and shall be from a source that is approved by the SD DOT. The aggregate size shall be consistent throughout the entire structure. Only one source shall be used to produce each aggregate size. Coarse aggregate for wet cast concrete shall meet the gradation requirements of current SD DOT specifications. The gradation requirement shall not apply for dry cast concrete.
- E. Related Work:**
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|------------|----------------------------------------------------------------|
| Section 40 | Portland Cement Concrete Pavement |
| Section 55 | Cast in Place Concrete Structures |
| Section 56 | Class M6 Concrete for Curb & Gutter and Flatwork |
| Section 60 | Concrete Curb and Gutter |
| Section 61 | Concrete Sidewalk, Curb Ramps, and Detectable Warning Surfaces |
| Section 62 | Drop Inlets |

107.2 MATERIALS

- A. Deleterious Substances:** The amount of deleterious substances for all concrete except class M6 shall not exceed the following limits by dry weight:
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|------------------------------------------------------------------------------------------------------------------------------|------|
| Clay lumps | 0.3% |
| Shale and other materials having a specific gravity less than 1.95 | 1.0% |
| Scratch hardness | 2.0% |
| Other deleterious substances (such as alkali, mica, coated grains, flaky particles, coal, lignite, and chocolate rock) | 2.0% |

The maximum amount of deleterious substances listed above shall not exceed 2.0% by dry weight.

The deleterious substances in the coarse aggregate for Class M6 concrete shall not exceed the following limits:

Clay lumps	0.5%
Shale and other materials having a specific gravity less than 1.95.....	1.0%
Scratch hardness.....	2.0%
Other deleterious materials (such as alkali, mica, coated grains, flaky particles, coal, lignite, and chocolate rock)	3.0%

The maximum amount of all deleterious material shall not exceed 3.0% by dry weight.

- B. Percentage of Wear:** The percentage of wear, LA abrasion test, shall not be more than 40% by weight.
- C. Soundness:** When the coarse aggregate is subjected to 5 cycles of the sodium sulfate soundness test, the weighted loss shall not exceed 10% by weight. When Class M6 coarse aggregate is subjected to 5 cycles of the sodium sulfate soundness test, the weighted loss shall not exceed 12% by weight.
- D. Gradation:** Each size of coarse aggregate shall conform to the gradation requirements specified in the following table:

PERCENTAGE BY DRY WEIGHT PASSING SIEVE

Size #	Nominal Size Square Openings	2 inch	1½ inch	1 inch	¾ inch	½ inch	3/8 inch	#4	#8
1	1 inch to #8		100	95-100		25-60		0-10	0-5* ¹
1A	¾ inch to #8			100	90-100		20-55	0-10	0-5* ¹
3	¾ inch to #8				100	97-100	40-90	5-20	0-5* ¹
5	½ inch to #8				100	90-100	40-70	0-20	0-5* ¹
15	1 ½ inch to #8		100	98-100	70-90		27-53	2-20	0-6* ¹

*1 The combined mixture of fine and coarse aggregate shall be such that not more than 1.5% passes the #200 sieve. This limit shall not be more than 2.5% for Class M6 concrete.

- E. Flat and Elongated Particles:** The maximum amount of flat and elongated particles in the coarse aggregate of concrete pavement utilizing Size #15 shall not exceed 10%. Flat and elongated particles are defined as those particles with a ratio of maximum to minimum dimension greater than 5:1.

F. Sampling and Testing:

Sampling.....	SD 201
Gradation	SD 202
Clay lumps	AASHTO T 112
Particles Less Than 1.95 Specific Gravity.....	.SD 214
Scratch Hardness.....	SD 218*
Flat and Elongated Particles	SD 212
Chocolate Rock.....	SD 216*
LA Abrasion.....	SD 204
Soundness Test (sodium sulfate solution, five cycles)	SD 220
Material Finer than #200 Sieve	SD 206

* Not required for ledge rock

107.3 METHOD OF MEASUREMENT

Coarse aggregate for use in portland cement concrete and similar uses will be considered incidental to the various bid items. There will be no separate measurement for coarse aggregate used in portland cement concrete and similar uses.

107.4 BASIS OF PAYMENT

Coarse aggregate for use in portland cement concrete and similar uses will be considered incidental to the various bid items. There will be no separate payment for coarse aggregate used in portland cement concrete and similar uses.

END OF SECTION