

ducts any tests necessary to put the plant into operation and ensure production of a mixture conforming to these specifications.

- (c) **Hydraulic Cement Concrete Plant Technician:** A Hydraulic Cement Concrete Plant Technician performs necessary adjustments in the proportioning of material used to produce the specified concrete mixtures.
- (d) **Hydraulic Cement Concrete Batcher:** A Hydraulic Cement Concrete Batcher performs the batching operation. The batcher implements adjustments only at the direction of a certified Concrete Plant Technician unless the batcher's certification authorizes otherwise.
- (e) **Asphalt Paving Technician:** An Asphalt Paving Technician inspects asphalt concrete placement and surface treatment in accordance with applicable requirements.
- (f) **Concrete Field Technician:** A Concrete Field Technician provides quality control of placement operations for hydraulic cement concrete in accordance with the requirements of Sections 316, 404, 405, 410, 412, 415, 502, 504, 505, 506, and 509.

## SECTION 201—MINERAL FILLER

### 201.01—Description.

These specifications cover inorganic material such as lime or fly ash, usually of very fine grading, added to soil or asphalt to produce a desired effect.

### 201.02—Detail Requirements.

Mineral filler shall conform to the requirements of AASHTO M17. Tests will be performed in accordance with the requirements of AASHTO T37.

## SECTION 202—FINE AGGREGATE

### 202.01—Description.

These specifications cover material for use as fine aggregate in hydraulic cement concrete, mortar, asphalt concrete, and asphalt surface treatments.

### 202.02—Materials.

Fine aggregate is classified herein in accordance with its occurrence or method of manufacture as natural sand or stone sand. Natural sand shall consist of grains of

hard, sound material, predominantly quartz, occurring in natural deposits or in loosely bound deposits, such as sandstone conglomerate. Stone sand shall consist of sound crushed particles of approved Grade A stone, essentially free from flat or elongated pieces, with sharp edges and corners removed.

Fine aggregates for use in hydraulic cement concrete that are obtained from more than one source shall not be used alternately or mixed without the consent of the Engineer.

### 202.03—Detail Requirements.

- (a) **Grading:** Grading shall conform to the requirements of Table II-1. Tests will be performed in accordance with the requirements of AASHTO T27.
- (b) **Soundness:** Soundness shall conform to the requirements of Table II-2. Tests will be performed in accordance with the requirements of AASHTO T103 or T104.
- (c) **Organic Impurities:** When fine aggregate is to be used in hydraulic cement concrete, the percentage of organic impurities shall conform to the requirements of AASHTO T21; however, material producing a darker color than that specified in AASHTO T21 may be accepted in accordance with the requirements of AASHTO M6.
- (d) **Void Content:** Void content will be tested in accordance with the requirements of VTM-5.
- (e) **Deleterious Material:** The amount of deleterious material in sands shall be not more than the following:

Material	% by Weight	AASHTO Test Method
Clay lumps	0.25	T112
Shale, mica, coated grains, soft or flaky particles	1.0	T113
Organic material	0	T21
Total material passing No. 200 sieve by washing <sup>1</sup>		T11 and T21
For use in concrete subject to abrasion	3	
For other concrete	5	

<sup>1</sup>In the case of stone sand, if the material passing the No. 200 sieve is dust of fracture, essentially free from clay or shale, the percentages shown for use in concrete subject to abrasion and in other concrete may be increased to 5.0 percent and 7.0 percent, respectively.

TABLE II-1  
Fine Aggregate

Grading	Amounts Finer Than Laboratory Sieve (Square Opening) (% by Weight)							
	3/8 in. (9.5mm)	No. 4 (4.75 mm)	No. 8 (2.36 mm)	No. 16 (1.18 mm)	No. 30 (600 $\mu$ m)	No. 50 (300 $\mu$ m)	No. 100 (150 $\mu$ m)	No. 200 (75 $\mu$ m)
A	Min. 100	97 $\pm$ 3	90 $\pm$ 10	67 $\pm$ 18	42 $\pm$ 17	17 $\pm$ 9	Max. 10	
B	Min. 100	97 $\pm$ 3					Max. 10	
C	Min. 100	97 $\pm$ 3				Max. 25		
F	Min. 100	92 $\pm$ 8	80 $\pm$ 20	62 $\pm$ 22	39 $\pm$ 19	Max. 26	Max. 10	Max. 7
G	Min. 100			70 $\pm$ 30	50 $\pm$ 35	Max. 26	Max. 10	Max. 5