
MATERIAL SPECIFICATION
MS-OR-521 AGGREGATES FOR DRAINFILL AND FILTERS

521.1 SCOPE

This specification covers the quality of mineral aggregates for the construction of drainfill and filters.

521.2 QUALITY

Drainfill and filter aggregates shall be sand, gravel, or crushed stone or mixtures thereof. Aggregates shall be composed of clean, hard, durable, mineral particles free from organic matter, clay balls, soft particles, or other substances that would interfere with the free-draining properties of the aggregates.

Coarse aggregate may be crushed limestone or other material that has limestone particles included. Aggregates from crushed limestone shall be thoroughly washed and screened to remove limestone dust, limestone fines, and fine soil particles. For coarse aggregate containing limestone, the total portion finer than the No. 4 sieve shall not contain more than 3 percent by weight of limestone. Limestone shall not be used for fine aggregates except in combination with other material, such that not more than 5 percent of the portion finer than the No. 4 sieve shall be limestone.

Aggregates shall be tested for soundness according to ASTM Method C 88 and shall have a weighted average loss in 5 cycles of not more than 12 percent when sodium sulfate is used or 18 percent when magnesium sulfate is used.

521.3 GRADING

Drainfill and filter aggregates shall conform to the specified grading limits after being placed or after being compacted when compaction is specified. Grading shall be determined by ASTM Method C 136. The percentage of material finer than the No. 200 sieve shall be determined by the method in ASTM Designation C 117.

The gradation shall conform to the requirements for the fine aggregates of ASTM C-33, unless otherwise specified on the drawings.

Gradation for ASTM C-33 fine aggregates:

Standard Sieve Size Percent of Material Smaller Than

3/8 inch (9.5 mm) 100

#4 (4.75 mm) 95 to 100

#8 (2.36 mm) 80 to 100

#16 (1.18 mm) 50 to 85

#30 (0.60 mm) 25 to 60
#50 (0.30 mm) 10 to 30
#100 (0.15 mm) 2 to 10

521.4 STORING AND HANDLING

Drainfill and filter aggregates shall be stored and handled by methods that prevent segregation of particle sizes or contamination by mixing with other material.