



Designation: D 448 – 98

Standard Classification for Sizes of Aggregate for Road and Bridge Construction¹

This standard is issued under the fixed designation D 448; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This classification defines aggregate size designations and ranges in mechanical analyses for standard sizes of coarse aggregate and screenings for use in the construction and maintenance of various types of highways and bridges.

1.2 With regard to sieve sizes and the size of aggregate as determined by the use of testing sieves, the values in inch-pound units are shown for the convenience of the user; however, the standard sieve designation shown in parentheses is the standard value as stated in Specification E 11E 11.

2. Referenced Documents

2.1 *ASTM Standards:*

C 136 Test Method for Sieve Analysis of Fine and Coarse Aggregates²

D 75 Practice for Sampling Aggregates³

E 11 Specification for Wire-Cloth Sieves for Testing Purposes⁴

¹ This classification is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.50 on Aggregate Specifications.

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² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 04.03.

⁴ Annual Book of ASTM Standards, Vol 14.02.

3. Significance and Use

3.1 Contract documents may specify certain of these aggregate sizes for specific uses or may suggest one or more of these sizes as appropriate for the preparation of various end-product mixtures. In some cases, closer limits on variability of the aggregate grading may be required.

4. Manufacture

4.1 The standard sizes of aggregate described in this classification may be manufactured by means of any suitable process used to separate raw material into the desired size ranges. Standard sizes may also be produced by blending two or more different components.

5. Standard Sizes

5.1 Standard sizes of coarse aggregate shall comply with the sizes given in Table 1. All sizes shall be determined by means of laboratory sieves having square openings and conforming to Specification E 11E 11.

6. Basis of Classification

6.1 Classification is based upon the size number and size ranges shown in Table 1 with the aggregate sampled in accordance with Practice D 75D 75 and tested for grading by Test Method C 136C 136.

TABLE 1 Standard Sizes of Processed Aggregate

Size Number	Nominal Size, Square Openings	Amounts Finer than Each Laboratory Sieve (Square Openings), mass percent														
		100-mm (4-in.)	90-mm (3½-in.)	75-mm (3-in.)	63-mm (2½-in.)	50-mm (2-in.)	37.5-mm (1½-in.)	25.0-mm (1-in.)	19.0-mm (¾-in.)	12.5-mm (½-in.)	9.5-mm (¾-in.)	4.75-mm (No. 4)	2.36-mm (No. 8)	1.18-mm (No. 16)	300-µm (No. 50)	150-µm (No. 100)
1	90 to 37.5-mm (3½ to 1½-in.)	100	90 to 100	...	25 to 60	...	0 to 15	...	0 to 5	...	...	...	...	...	...	...
2	63 to 37.5-mm (2½ to 1½-in.)	...	...	100	90 to 100	35 to 70	0 to 15	...	0 to 5	...	...	...	...	...	...	...
24	63 to 19.0-mm (2½ to ¾-in.)	...	...	100	90 to 100	...	25 to 60	...	0 to 10	0 to 5	...	...	...	...	...	...
3	50 to 25.0-mm (2 to 1-in.)	...	...	...	100	90 to 100	35 to 70	0 to 15	...	0 to 5	...	...	...	...	...	...
357	50 to 4.75-mm (2-in. to No. 4)	...	...	...	100	95 to 100	...	35 to 70	...	10 to 30	...	0 to 5	...	...	...	...
4	37.5 to 19.0-mm (1½ to ¾-in.)	...	...	...	...	100	90 to 100	20 to 55	0 to 15	...	0 to 5	...	...	...	...	...
467	37.5 to 4.75-mm (1½-in. to No. 4)	...	...	...	...	100	95 to 100	...	35 to 70	...	10 to 30	0 to 5	...	...	...	...
5	25.0 to 12.5-mm. (1 to ½-in.)	...	...	...	...	...	100	90 to 100	20 to 55	0 to 10	0 to 5	...	...	...	...	...
56	25.0 to 9.5-mm (1 to ⅝-in.)	...	...	...	...	...	100	90 to 100	40 to 85	10 to 40	0 to 15	0 to 5	...	...	...	...
57	25.0 to 4.75-mm (1-in. to No. 4)	...	...	...	...	...	100	95 to 100	...	25 to 60	...	0 to 10	0 to 5	...	...	...
6	19.0 to 9.5-mm (¾ to ⅝-in.)	...	...	...	...	...	...	100	90 to 100	20 to 55	0 to 15	0 to 5	...	...	...	...
67	19.0 to 4.75-mm (¾-in. to No. 4)	...	...	...	...	...	...	100	90 to 100	...	20 to 55	0 to 10	0 to 5	...	...	...
68	19.0 to 2.36-mm (¾-in. to No. 8)	...	...	...	...	...	...	100	90 to 100	...	30 to 65	5 to 25	0 to 10	0 to 5	...	...
7	12.5 to 4.75-mm (½-in. to No. 4)	...	...	...	...	...	...	...	100	90 to 100	40 to 70	0 to 15	0 to 5	...	...	...
78	12.5 to 2.36-mm (½-in. to No. 8)	...	...	...	...	...	...	...	100	90 to 100	40 to 75	5 to 25	0 to 10	0 to 5	...	...
8	9.5 to 2.36-mm (⅝-in. to No. 8)	...	...	...	...	...	...	...	...	100	85 to 100	10 to 30	0 to 10	0 to 5	...	...
89	9.5 to 1.18-mm (⅝-in. to No. 16)	...	...	...	...	...	...	...	...	100	90 to 100	20 to 55	5 to 30	0 to 10	0 to 5	...
9	4.75 to 1.18-mm (No. 4 to No. 16)	...	...	...	...	...	...	...	...	...	100	85 to 100	10 to 40	0 to 10	0 to 5	...
10	4.75-mm (No. 4 to 0 ^A)	...	...	...	...	...	...	...	...	...	100	85 to 100	...	...	...	10 to 30

^A Screenings.