



# Standard Classification for Size of Aggregate Used as Ballast for Membrane Roof Systems<sup>1</sup>

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## 1. Scope

1.1 This classification defines the aggregate size designations and ranges in mechanical analyses for standard sizes of aggregate used as ballast for membrane roof systems.

1.2 The text of this classification references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

1.3 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 designations shown in parentheses is the standard value as stated in Specification E11.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates  
D75 Practice for Sampling Aggregates  
D1079 Terminology Relating to Roofing and Waterproofing  
E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

<sup>1</sup> This classification is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.20 on Roofing Membrane Systems.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

### 2.2 ANSI/SPRI Standard:<sup>3</sup>

RP-4 Wind Design Standard for Ballasted Single-ply Roofing Systems

## 3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminology D1079.

## 4. Significance and Use

4.1 The wind resistance of ballasted membrane roof systems is determined largely by the size and weight of the ballasted used. ANSI/SPRI RP-4 provides a method for the wind design of ballasted single-ply membrane roof systems and includes specific guidelines for the size and weight of aggregate used as ballast. The aggregate size classifications provided in this standard are intended for use with the guidelines provided ANSI/SPRI RP-4 in designing the wind resistance of aggregate ballasted single-ply membrane roof systems.

4.2 The aggregate size classifications provided in this classification are intended to provide a basis of compliance for contract documents' that specify certain aggregate sizes for use on ballasted membrane systems.

## 5. Manufacture

5.1 The standard sizes of aggregate described in this classification are manufactured by means of any suitable process used to separate raw material into the desired size ranges. Production of standard sizes by blending two or more different components is permitted.

## 6. Standard Sizes

6.1 Standard sizes of 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 E11.

<sup>3</sup> Available from SPRI, 411 Waverley Oaks Road, Suite 331B, Waltham, MA 02452.



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.]
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	...	...
3	50 to 25-mm [2 to 1-in.]	...	...	...	100	90 to 100	0 to 15	...	...	0 to 5	...
4	37.5 to 19-mm [1½ to ¾-in.]	...	...	...	...	100	90 to 100	20 to 55	0 to 15	...	0 to 5

## 7. Basis of Classification

7.1 Classification is based upon the size number and size ranges shown in **Table 1** with the aggregate sampled in accordance with Practice **D75** and tested for grading by Test Method **C136**.

## 8. Keywords

8.1 aggregate; aggregate standard size; screenings

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