Designation: C568/C568M – 15

Standard Specification for Limestone Dimension Stone[1]

This standard is issued under the fixed designation C568/C568M; 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 U.S. Department of Defense.

1. Scope

1.1 This specification covers the material characteristics, physical requirements, and sampling appropriate to the selection of limestone for general building and structural purposes. Refer to Guides C1242 and C1528 for the appropriate selection and use of limestone dimension stone.

1.2 Dimension limestone shall include stone that is sawed, cut, split, or otherwise finished or shaped and shall specifically exclude molded, cast, or otherwise artificially aggregated units of composed fragments, and also crushed and broken stone.

1.3 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.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C97/C97M Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone

C99/C99M Test Method for Modulus of Rupture of Dimension Stone

C119 Terminology Relating to Dimension Stone

C170/C170M Test Method for Compressive Strength of Dimension Stone

C241/C241M Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic

C1242 Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems

C1353 Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform Abraser

C1528 Guide for Selection of Dimension Stone

3. Terminology

3.1 *Definitions*—All definitions are in accordance with Terminology C119.

4. Classification

4.1 Dimension limestone shall be classified into three categories, generally descriptive of those limestones having densities in approximate ranges, as follows:

4.1.1 *I* (*Low-Density*)—Limestone having a density ranging from 110 through 135 lb/ft^3 [1760 through 2160 kg/m^3].

4.1.2 *II* (*Medium-Density*)—Limestone having a density greater than 135 and not greater than 160 lb/ft^3 [2160 through 2560 kg/m^3].

4.1.3 *III* (*High-Density*)—Limestone having a density greater than 160 lb/ft^3 [2560 kg/m^3].

5. Physical Requirements

5.1 Limestone supplied under this specification shall conform to the physical requirements listed in Table 1.

5.2 Limestone shall be sound, durable, and free of spalls, cracks, open seams, pits, or other defects that are likely to impair its structural integrity in its intended use.

5.3 The desired color and texture, with their permissible natural variations in material characteristics for all material to be produced for the project, shall be established by control samples. Select representative samples by viewing a sufficient number of physical samples prior to production that show the complete range of variations in color and texture of the limestone specified.

6. Sampling

6.1 Samples, if required, for testing to determine the characteristics and physical properties shall be representative of the limestone to be used.

7. Keywords

7.1 calcium carbonate; limestone

[1] This specification is under the jurisdiction of ASTM Committee C18 on Dimension Stone and is the direct responsibility of Subcommittee C18.03 on Material Specifications.

Current edition approved Dec. 1, 2015. Published January 2016. Originally approved in 1965. Last previous edition approved in 2010 as C568/C568M – 10. DOI: 10.1520/C0568_C0586M-15.

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

TABLE 1 Physical Requirements

NOTE 1—The values in Table 1 were established using samples prepared according to the individual test methods. Finishes, other than those specified in the individual test methods, may result in a deviation from established values.

Physical Property	Test Requirements	Classification		Test Method(s)
Absorption by weight, max, %	12	I	low-density	C97/C97M
	7.5	II	medium-density	
	3	III	high-density	
Density, min, lb/ft^3 [kg/m^3]	110 [1760]	I	low-density	C97/C97M
	135 [2160]	II	medium-density	
	160 [2560]	III	high-density	
Compressive strength, min, psi [MPa]	1800 [12]	I	low-density	C170/C170M
	4000 [28]	II	medium-density	
	8000 [55]	III	high-density	
Modulus of rupture min, psi [MPa]	400 [2.8]	I	low-density	C99/C99M
	500 [3.4]	II	medium-density	
	1000 [6.9]	III	high-density	
Abrasion resistance, min, hardness[A,B]	10	I	low-density	C241/C241M/C1353
	10	II	medium-density	
	10	III	high-density	

[A] Pertains only to stone subject to foot traffic.
[B] Abrasion Resistance Test Method C1353 will eventually replace Test Method C241/C241M and it is not necessary to perform both tests. Availability of the proper equipment and materials by the testing laboratory may determine which test is performed.