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Standard Terminology of Masonry[1]

This standard is issued under the fixed designation C1232; 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.

1. Scope*

1.1 This standard incorporates generic terms and generic definitions of terms specifically associated with masonry and masonry units. These generic terms and definitions are used within the standards developed by Committee C12 on Mortars and Grouts for Unit Masonry and Committee C15 on Manufactured Masonry Units.

1.2 This standard incorporates terms and definitions of terms associated with the standards specific to clay masonry units, in particular to Specifications C32, C34, C56, C62, C126, C212, C216, C279, C410, C652, C902, C1088, C1167, C1261, C1272, and C1405, and to Test Methods C67.

1.3 This standard incorporates terms and definitions of terms associated with the standards specific to concrete masonry units in particular to Specifications C55, C73, C90, C129, C139, C744, C1319, C1372, C1491, C1623, and C1634 and to Test Methods C140, C426, and C1262.

1.4 This standard incorporates terms and definition of terms associated with the standards specific to autoclaved aerated concrete masonry units in particular to Practice C1555 and to Specification C1386.

1.5 This standard incorporates terms and definitions of terms associated with the standards specific to clay and concrete roofing tile units in particular to Specifications C1167 and C1492 and to Test Methods C1568, C1569, and C1570.

1.6 For terminology specific to mortar and grout, see Terminology C1180.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C32 Specification for Sewer and Manhole Brick (Made From Clay or Shale)
C34 Specification for Structural Clay Load-Bearing Wall Tile
C43 Terminology of Structural Clay Products
C55 Specification for Concrete Building Brick
C56 Specification for Structural Clay Nonloadbearing Tile
C62 Specification for Building Brick (Solid Masonry Units Made From Clay or Shale)
C67 Test Methods for Sampling and Testing Brick and Structural Clay Tile
C73 Specification for Calcium Silicate Brick (Sand-Lime Brick)
C90 Specification for Loadbearing Concrete Masonry Units
C126 Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
C129 Specification for Nonloadbearing Concrete Masonry Units
C139 Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
C140 Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
C212 Specification for Structural Clay Facing Tile
C216 Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)
C279 Specification for Chemical-Resistant Masonry Units
C410 Specification for Industrial Floor Brick
C426 Test Method for Linear Drying Shrinkage of Concrete Masonry Units
C652 Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale)
C744 Specification for Prefaced Concrete and Calcium Silicate Masonry Units
C902 Specification for Pedestrian and Light Traffic Paving Brick
C1088 Specification for Thin Veneer Brick Units Made From Clay or Shale

[1] This terminology is under the jurisdiction of ASTM Committee C15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.08 on Terminology.

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[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.

***A Summary of Changes section appears at the end of this standard.**

C1167 Specification for Clay Roof Tiles
C1180 Terminology of Mortar and Grout for Unit Masonry
C1209 Terminology of Concrete Masonry Units and Related Units
C1261 Specification for Firebox Brick for Residential Fireplaces
C1262 Test Method for Evaluating the Freeze-Thaw Durability of Dry-Cast Segmental Retaining Wall Units and Related Concrete Units
C1272 Specification for Heavy Vehicular Paving Brick
C1319 Specification for Concrete Grid Paving Units
C1372 Specification for Dry-Cast Segmental Retaining Wall Units
C1386 Specification for Precast Autoclaved Aerated Concrete (AAC) Wall Construction Units
C1405 Specification for Glazed Brick (Single Fired, Brick Units)
C1491 Specification for Concrete Roof Pavers
C1492 Specification for Concrete Roof Tile
C1555 Practice for Autoclaved Aerated Concrete Masonry
C1568 Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Mechanical Uplift Resistance Method)
C1569 Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Wind Tunnel Method)
C1570 Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Air Permeability Method)
C1623 Specification for Manufactured Concrete Masonry Lintels
C1634 Specification for Concrete Facing Brick

3. Terminology

3.1 *Generic Definitions*—The definitions apply to masonry units and assemblies. They are generic as used by ASTM Committees C12 and C15.

bed surface, *n*—*(1)* the nonvertical surfaces of a manufactured masonry unit intended by the manufacturer to be joined by mortar or other methods. *(2)* the in situ nonvertical surfaces of a manufactured masonry unit joined by mortar or other methods.
cryptoflorescence, *n*—crystalline deposit of water-soluble compounds in the pores of masonry.
efflorescence, *n*—crystalline deposit, usually white, of water-soluble compounds on the surface of masonry.
face, exposed, *n*—the in situ exposed surface(s) of a manufactured masonry unit.
face, finished, *n*—any surface(s) of a manufactured masonry unit intended by the manufacturer to be exposed to view.
facing unit, *n*—manufactured masonry unit designed for use where one or more faces will be exposed and for which the specification includes requirements on color, finish, and other properties affecting appearance.
freeze thaw resistance, *n*—the ability of masonry to maintain integrity under the forces caused by cyclic action of freezing and thawing in the presence of moisture.
frog, *n*—an indentation in a bed surface of a masonry unit. Indentations not exceeding ⅜ in. (9.5 mm) are termed a frog, sometimes called a panel or panel frog. Indentations exceeding ⅜ in. (9.5 mm) are termed a deep frog.
groove, *n*—a channel formed on surfaces other than finished faces of manufactured masonry units for production or construction purposes.
height, *n*—vertical dimension of the face of a unit when the unit is positioned as a stretcher.
hollow masonry unit, *n*—unit whose net cross-sectional area in any plane parallel to the surface containing cores, cells, or deep frogs is less than 75 % of its gross cross-sectional area measured in the same plane.
length, *n*—horizontal dimension of the face of a unit when the unit is positioned as a stretcher.
manufactured masonry unit, *n*—a manmade noncombustible building product intended to be laid by hand and joined by mortar, grout, or other methods of joining.
masonry, *n*—the type of construction made up of masonry units laid with mortar, grout, or other methods of joining.
nominal dimension, *n*—dimension that is greater than the specified dimension by the thickness of a mortar joint. It is usually expressed as a whole number.
score, *n*—a channel formed for appearance purposes on the finished faces of a manufactured masonry unit.
shell, *n*—the outer walls of a hollow masonry unit. Shell can either be an end shell or a face shell.
solid masonry unit, *n*—unit whose net cross-sectional area in any plane parallel to the surface containing cores, cells, or deep frogs is 75 % or more of its gross cross-sectional area measured in the same plane.
specified dimensions, *n*—dimensions to which masonry units or constructions are required to conform. Actual (measured) dimensions may differ from the specified dimensions by permissible variations.
surface feature, *n*—a quality or condition of the face of a manufactured masonry unit.

DISCUSSION—Surface features include coatings, colors, textures, relief, or combinations of these. A masonry unit may have different surface features on individual faces.

thickness, *n*—that dimension designed to lie at right angles to the face of the wall, floor, or other assembly.
units placed in usage, *n*—manufactured masonry units that have been installed in masonry.

3.2 *Definitions Specific to Clay Masonry Units:*

absorption, *n*—weight of water picked up by a clay masonry unit during immersion at prescribed conditions expressed in relation to the dry weight of the unit.

DISCUSSION—Two conditions of immersion are designated in standards relating to brick: 24 h in room temperature (60 to 86°F (15.5 to 30°C)) water or 5 h in boiling water. (Different time intervals are specified for structural tile and other products.) The resulting absorptions are termed *cold water absorption* and *boiling water absorption*.

Absorption values are used in brick and tile standards as one factor in classifying these products into durability grades. Absorptions are indicators of the extent of firing during manufacture as well as being indicators of durability.

body color, *n*—the range of color obtained when materials used to form the brick react to the effects of firing temperature and atmosphere.

DISCUSSION—There may be additives in the body to produce a desired color. When no materials are added to the surface of the brick and the unit is not flashed when fired, the body color is also the through-body color, a surface feature.

brick, *n*—a solid or hollow masonry unit of clay or shale, usually formed into a rectangular prism, then burned or fired in a kiln; brick is a ceramic product.

brick, acid-resistant, *n*—brick suitable for use in contact with chemicals, usually in conjunction with acid-resistant mortars; see Specification C279.

brick, building, *n*—brick for load-resisting or other purposes where appearance properties such as texture or color are not important (formerly called common brick); see Specification C62 and Specification C652.

brick, facing, *n*—brick for general purposes where appearance properties such as color, texture, and chippage are important; see Specification C216 and Specification C652.

DISCUSSION—Facing brick are produced from selected clays and are available in typical face sizes, various colors, and in various textures.

brick, floor, *n*—brick with physical properties related to resistance to chemicals, thermal and mechanical shock, or absorption, or combinations of these, used as finished floor surfaces in industrial applications; see Specification C410.

DISCUSSION—Other brick are used as flooring in non-industrial applications; see Specification C902. Floor brick manufactured to meet the requirements in Specification C410 are typically smooth and dense.

brick, paving, *n*—brick made to provide the wearing surface of highways, streets, driveways, walkways, patios, and similar applications; see Specifications C902 and C1272.

brick, sewer, *n*—low absorption, abrasive-resistant brick intended for use in drainage structures; see Specification C32.

brick, specially-shaped, *n*—a brick manufactured to a basic shape of other than a rectangular prism.

cells/core holes, *n*—continuous openings or perforations within extruded clay products.

DISCUSSION—The extent of permissible openings is specified for each product as the percentage of gross area in the normal bedding surface plane that must be net (solid) area. Core hole is generally used for brick while cell is used for structural tile. Cells are distinguished from core holes by being larger in size. As an illustration, cells must be larger than 1 in.^{2} (645 mm^2) under Specification C34, and 1½ in.^{2} (968 mm^2) under Specification C652.

clay, *n*—an earthy or stony mineral aggregate consisting essentially of hydrous silicates of alumina, plastic when sufficiently pulverized and wetted, rigid when dry, and vitreous when fired to a sufficiently high temperature.

coated finish, *n*—the surface color and texture resulting from the application of mineral particles to the finished faces in the manufacturing process.

DISCUSSION—Coatings include sand, engobes, and glazes, and these may be applied alone or in combination.

combed finish, *n*—the texture resulting when faces are altered by more or less parallel scratches or scarfs in manufacture.

coring, *v*—the process of perforating structural clay products, generally performed during extrusion by supporting cores (rods) within the shaping cap of the extruder.

end-construction tile, *n*—tile designed to receive its compressive stress parallel to the axes of the cell.

engobe, *n*—a slip, other than a glaze, that is not impervious and is applied as a coating to a ceramic body to function as a glaze undercoat or to impart color, texture, opacity, or other characteristics.

extrusion, *n*—shaping of brick by pushing plastic clay or shale through a die opening that forms the peripheral dimensions of the brick.

DISCUSSION—The column of extrudate is then cut into sections to provide the third dimension of the brick. Water is added to the clay or shale in sufficient quantities to permit laminar flow through the extrusion machine. The consistency of the extrudate may vary from stiff and capable of supporting several times its weight to soft and deformable under slight loads.

fire clay, *n*—a sedimentary clay of low flux content.

fired bond, *n*—bond developed between particulate constituents of brick solely as the result of the firing process.

DISCUSSION—The bond may result from fusion or melting of one or more constituents of the composition or the surface of particles. Other thermal mechanisms such as sintering and interparticle reaction may be responsible for the bond.

The higher the heat treatment, the greater the extent of bonding and consequently the greater the developed strength and the lower the resulting porosity. The bond development should be sufficient to provide the specified strength, porosity, and durability for any particular product.