

- ASTM C55 Concrete Building Brick
- ASTM C90 Loadbearing Concrete Masonry Units
- ASTM C1634 Concrete Facing Brick

This specification covers concrete brick intended for use in structural masonry (C55) or facing (C1634) for buildings in exterior walls. The most common usage is brick veneer construction.

Physical Requirements

The standard sets minimum compressive strength (psi) and maximum water absorption limits (lb/ft³) for each grade of brick (N or S). The maximum water absorption limit is dependent on the weight classification of the brick (light/medium/normal). Brick from the Ogden plant is normal weight and tested in accordance with ASTM C1634. Ashlar units are manufactured in accordance to C90.

ASTM	Compressive Strength (psi)		Water Absorption (lb/ft ³)	
	Average of 3	Individual	Weight Classification	
			Medium	Normal
C1634	3500	3000	13	10
C55	2500	2000	15	13
C90	1900	1700	15	13

The standard also requires that the total linear drying shrinkage is less than 0.065% at time of delivery. This is to minimize the risk of shrinkage cracks in walls. The shrinkage is determined by tests carried out on brick manufactured within the previous two years using the same materials and methods.

Dimensional Tolerances

Note that the standard gives tolerances around specified dimensions. The specified dimensions are as designated by the manufacturer. Refer to Hanson Brick’s catalogue for brick sizes. The tolerance around the specified dimensions for width, height and length is + – 1/8 inch. Brick can be either solid or cored. The cores shall not be more than 25% of the area. The distance from the core to any edge must be at least 3/4 inch.

Finish and Appearance

All units shall be sound and free of cracks or other defects that interfere with the proper placement of the units or significantly impair strength or performance. Minor cracks incidental to the usual method of manufacture or minor chipping resulting from customary methods of handling in shipment and delivery are not grounds for rejection.

The following requirements apply to only ASTM C1634:

Where units are to be used in exposed wall construction, the face or faces that are to be exposed shall not show chips or cracks not otherwise permitted or other imperfections when viewed from a distance of 20 feet. This is to ensure that masonry is assessed on the overall aesthetics and not on minor imperfections.

The standard does make allowance for five percent of the brick shipment to have minor imperfections such as: chips, not larger than 1/2 inch in any direction, or cracks not wider than 0.02 inch and not longer than 25% of the nominal height of the unit.

The color and texture is as specified by the purchaser. The finish surfaces that will be exposed in place shall conform to an approved sample consisting of not less than four units, representing the range of texture and color permitted.

When particular features are desired, such as weight classification, high compressive strength, surface textures for appearance or bond, finish color, fire resistance, insulation, acoustical properties, or other special features, such properties should be specified separately.