

The term brick as used today denotes a rectangular masonry unit formed in a plastic state from clay or shale and burned in a kiln. If brick is made from materials other than clay or shale, the name of the material from which the unit is manufactured is included, such as concrete brick.

The composition of the raw materials used and the manufacturing process affect the properties of clay masonry products. Basically, the important properties of brick are colour, texture, size variation, absorption, compressive strength and durability.

Generally, the harder a brick is, the longer lasting and more water resistant it is. Brick used in construction must endure heat, cold, wetting, drying, surface impact, ultra violet light and chemical exposure. The qualities of brick have been proven through centuries of use.

MANUFACTURING PROCESS

Brick is formed in two principle ways: the extruded method or the pressed brick method. The most common is the extruded process, which produces brick with a smooth or wire cut surface texture. Additional surface deformations and treatments can be added after extrusion. The pressed brick process produces a very accurately formed brick, with a smooth texture. Brick colours are primarily a product of the raw clay mixture and the firing procedure. Modern brick plants employ long tunnel kilns, in which kiln cars of "green brick" are continuously fed through drying, firing and cooling zones. Energy is conserved by recycling heat from the cooling zone to the drying zone.

PRODUCTS

Both Clay Face Brick and Structural Units are covered by CSA A82-06. A standard face brick (cored brick) is defined as a brick that is at least 75% solid. Hollow structural units have a net cross-sectional area of 40% to 75%.

The minimum width of a brick unit is 75 mm.

GRADE

There are two grades of clay masonry units: Exterior (EG), and Interior (IG). EG units are required for all exterior applications in Canada, where a high degree of resistance to frost action and weathering is desired and where a brick unit may be exposed to frost action when permeated with water. IG units do not have to meet as high a resistance to frost action, and may only be used for interior applications. In practice, only EG units are usually inventoried by brick producers.



Egyptian hieroglyph (c. 3100 BC)
"Brick" – literally "block of clay"

TYPES

There are three types of face or hollow brick in CSA A82-06: Types S, X and A.

Type S bricks are for general use in exposed exterior and interior masonry walls and partitions, where normal variations in size are permitted. This is by far the most commonly used and specified brick type, and provides the basis for acceptance if no other type is specified.

The dimensional tolerances for Type S units have been tightened in the 2006 edition, by requiring closer tolerances on units supplied for a specific project. In effect, this makes the tolerances at least as tight as the previous Type X dimensional restrictions. For example, the Type S tolerance on the 190 mm length of a standard brick used to be ± 6 mm for Type S, and ± 4 mm for Type X. For Type S, it is now ± 6 mm overall, but only ± 3 mm within a project job lot sample.

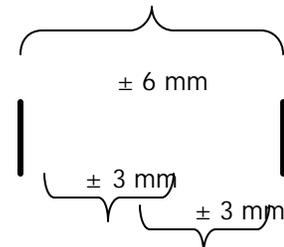
Type X brick are for special use in exposed exterior and interior masonry walls and partitions where a higher degree of mechanical perfection and smaller permissible variation in size are required.

Type A brick are manufactured and selected to produce characteristic architectural effects resulting from non-uniformity in size, colour and texture of individual units.

Typical Base Specification:

Clay Face Brick and Hollow Brick:
to CSA A82-06, Grade EG, Type S

Overall tolerance envelope



Possible project tolerance envelopes within overall

"Other than chips, the surfaces that will be exposed in place shall also be free of cracks or other imperfections detracting from the appearance of the brick when viewed from a distance of 4.5 m for Type X and **6.1m (20ft)** for Types S and A"