

# MYTHBUSTERS



# THE FACTS: BRICK VS. CONCRETE MASONRY VENEER

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**"Concrete masonry costs less than clay brick."**

Some bricklayers actually charge more to install concrete masonry—they claim it takes more time to install and to clean. Properly constructed concrete masonry veneer also requires control joints and horizontal reinforcement (which adds expense). Replacing control joint sealant over time also adds expense.

**"Concrete brick looks just like clay brick."**

Your eye can tell the difference. The colors in concrete masonry—made up of pigments in the cement paste—are flatter than those in clay brick and exhibit less vibrancy in hue. Early concrete brick colors were lighter than clay brick and faded with time. Some manufacturers have recently introduced darker colors made with modified pigments which they claim will not fade. However, it will take years to verify this. The dark, rich colors in a through-body clay brick will never fade. Control joints introduce unsightly vertical lines to concrete masonry.

**"Concrete masonry will last as long as clay brick."**

Clay brick undergo a vitrification process in the kiln. This fuses the clay particles together and results in its renowned durability. Concrete masonry relies on the cement paste to bond to the aggregate in the mix together. As the cement paste bond begins to break down or the paste is washed away, the concrete may deteriorate.

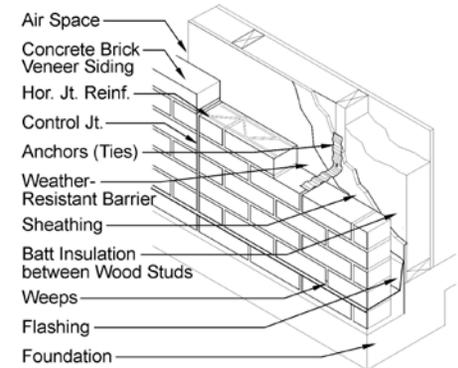


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## THE ARTIFICIAL "BRICK": CONCRETE MASONRY VENEER

Imagine a brick that's not a brick—without the deep rich colors and the unique look and feel. Replace that image with a machine-like, overly perfect looking brick made from concrete. That is concrete masonry. It is made from a portland cement matrix binding small to medium-sized aggregates such as sand, gravel and crushed stone. Natural or synthetic pigments are added to the mix to provide different colors. Some units have the exterior face textured with split or ribbed surfaces, or coatings applied to produce color variations. During manufacturing of concrete masonry units, additives may be used to prevent efflorescence and reduce water absorption. Concrete masonry veneer units are either architectural concrete block or concrete brick.

Architectural concrete block typically come in a thickness of 3 5/8 inches, heights of 3 5/8 and 7 5/8 inches and a length of 15 5/8 inches. The exterior face may be split, ribbed or ground, or a combination of these textures. These units may be cored or solid. Individual architectural concrete block weigh in a heavy 19 to 33 pounds each.



Concrete brick comes in a variety of sizes similar to those of clay brick. Like clay brick, the units may be cored, solid or have frogs and weigh from 3 to 15 pounds each.

What's the big difference between architectural concrete block or concrete brick and clay brick? Quite simply, it's the materials and methods of manufacture. Concrete units are cured at high humidity and temperatures to facilitate bond between the portland cement and aggregate. Clay brick is fired with natural gas or coal at approximately 2000 °F to fuse the shale or clay into a durable unit.

These different materials and manufacturing processes affect the behavior of the units when placed in a wall. Concrete masonry walls shrink, whereas clay brick walls expand. Both materials change size when subjected to temperature and moisture changes; however, the rate of change is different for each material.





## CAN YOU REALLY TRUST CONCRETE TO LAST HUNDREDS OF YEARS?

Genuine clay brick has been used to support and clad structures for thousands of years. The imbued color and time-tested durability of clay brick is readily apparent on our nation's historic homes, buildings and structures. Will concrete masonry, a recently introduced product, be able to make these same claims in several hundred years? Do debatable cost savings justify forgoing genuine clay brick—the premium exterior cladding?



## CONCRETE MASONRY VENEER STRENGTHS:

### Design Flexibility

Architectural concrete block is an accepted material for exposed wall construction. It is available as split, ribbed or ground face in an array of colors. Concrete brick is generally the same size as clay brick and available in a limited range of colors and textures.

### Physical Properties

Highly mechanized production ensures small dimensional tolerances between different concrete masonry units.

### Material Costs

Generally, concrete masonry is slightly less expensive than clay brick; however, costs are comparable when units are textured and colored.

## CONCRETE MASONRY VENEER WEAKNESSES:

### Requires Control Joints and Joint Reinforcement

Vertical control joints and horizontal joint reinforcement are recommended in both commercial and residential applications for concrete masonry veneer. When omitted, cracking in mortar joints will be visible.

### Inconsistent Color

The color in concrete masonry is not inherent within the unit and comes from pigments added to the cement paste. Since concrete masonry is manufactured using a batch method, obtaining color consistency from batch to batch can be a concern.

### Fading of Color

Even with recent improvements, the color of concrete masonry veneer still fades over time. Remember, the color comes from a pigment in the cement matrix. Surface erosion will change the unit's color as more of the aggregate is exposed.

### Installation Costs

Concrete masonry veneer requires more attention and time at installation than clay brick. When constructing outside corners, concrete brick with smooth ends must be roughened up by the

contractor to approach the same appearance as their front face. These facts add cost to concrete brick walls.

### Unit Shrinkage

Natural shrinkage of concrete masonry units occurs when these units are subjected to wetting and drying. Shrinkage cracks may develop in the veneer if control joints and horizontal joint reinforcement are not installed.

### Too Precise

The tighter dimensional tolerances of concrete masonry units produce a wall that may not have the handcrafted look like brick. A concrete masonry veneer can appear too precise and machine-like. It simply lacks the character of clay brick.

### Difficult To Clean

Concrete masonry, unlike brick, cannot be cleaned with any cleaner containing any acid. Even a buffered acid solution found in many brick cleaning products can dissolve the cement matrix at the surface of the masonry. Although more prone to staining, concrete masonry units must be cleaned without chemicals.