



## Split-Face Concrete Block: 2005

### ***Decorative, architectural block that has a rough, stone-like texture***

#### Summary

Split-face concrete blocks or concrete masonry units (CMUs) are a special class of decorative or architectural block that has a rough, stone-like texture created by splitting a block during production. This look is reminiscent of the rock-faced masonry in Richardsonian Romanesque houses popular in the mid-1880s, the continued use of fieldstone for exterior foundations, and the brief revival of medieval stone houses after the First World War. Plus, split-faced CMUs require less work than other decorative finishes, which may involve applying a ceramic-type glaze, polishing the exposed surface aggregate, machining raised patterns, fluting, scoring, or ribs. Like other architectural CMUs, split-faced block does not require any further application of a decorative finish on the exterior surface, such as paint or stucco. However, the current use of split-face block is almost entirely confined to commercial and institutional buildings and not yet widespread in residential buildings.



A CMU is made from a relatively dry mixture of Portland cement, aggregates, water, and admixtures. Aggregate or filler material is usually sand, gravel, or fly ash. Admixtures can be coloring agents, air-entraining materials, accelerators, retarders, or water repellants. The materials are then mixed, molded into the desired shape, and squeezed or compacted to make the material more dense. The units are subsequently cured under controlled moisture and temperature conditions. A machine splits the cured solid or hollow concrete units lengthwise or crosswise to achieve the rough, quarried stone surface texture of a split-face CMU. The surfaces are irregular and sharp, with the aggregates breaking through in various plains. Manufacturers produce a wide variety of colors, textures, and shapes by varying cements, aggregates, color pigments, and unit size. The most popular nominal size is the 8x8x16" hollow unit, but half-length units, return corners, and other multiples of four inches are available. Split solid units are nominally four inches wide with heights ranging from 1 5/8" to 7 5/8". Solid units usually serve as a veneer or facing material. Ribbed hollow units can be split to produce unusual effects.

The increased installation cost of split-face block may be a disadvantage for the cost-conscious segment of the residential industry or in regions where masonry is generally less cost effective or not a traditional material. It shares some

disadvantages with standard CMUs, such as mortar susceptibility to long-term water penetration, high thermal transmission, low tolerance to freeze/thaw cycles, and dust collection when used as an interior finish.

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#### PATH Attributes



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#### Ease of Implementation



Concrete block plants exist in most areas, but can vary in the range of products they produce. Almost all will make split-face or half-block. Most architectural blocks such as split-face must be ordered in advance, allowing a couple of weeks for delivery.

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#### Initial Cost

The average cost of split-faced block is about \$2.30 per block or \$2.59 per square foot compared with an average cost of \$1.30 per block or \$1.46 per square foot standard CMU block. Masons may charge an extra \$1.00 per square foot for additional care in laying the block.

The installed cost of split-face block is higher than standard block, but comparison with 2x4 framing depends on the local cost of lumber and the exterior finish used in conventional construction. Costs vary, however, according to the local cost of material, local reinforcement requirements, and the exterior finishes involved. Four-inch high split face block looks like brick and, along with regular split-face block, has found some acceptance for residential use in the Northeastern and Midwestern U.S. The installed cost of split-face "brick" is said to be cheaper than brick veneer.

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#### Operational Cost

Not Applicable

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## U.S.Code Acceptance

Block construction is generally accepted in all national codes. Local requirements for reinforcement with rebar may make CMU construction prohibitive, particularly in areas susceptible to seismic disturbances or soil subsidence.

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## Field Evaluations

Not Applicable

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## Installation

Split-face units are laid like regular CMUs with the split faces exposed. Like brick, a 3/8" mortar joint between units is standard. Consequently the actual dimensions are 3/8" less than the nominal dimensions. In laying the first course of hollow units, mortar is applied to the edges of the block faces and the webs. Otherwise, only the edges of the faces of the block are mortared. To ensure that joints are well filled, each unit is pushed downward and to the side against the mortared bed of the previously laid block so that the mortar oozes out of the joints on both sides of the block. Excess extruding mortar is cut off with a trowel and put back on a mortarboard for reuse. As with other architectural block, the mason uses a special tool slightly larger than the joint, compressing and shaping the mortar face to ensure a neat appearance and a weathertight joint. Because split-faced units are not covered with stucco or paint, masons are required to make an extra effort in laying the block, tooling the mortar joint, and keeping the wall clean.

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## Warranty

Not Applicable

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## Benefits/Costs

The exterior finish of split-face block has a relatively low incremental cost because it does not require an extra crew for additional finishing. Benefits include stone-like appeal, durability, stability, material inertness, and weather resistance. The strength of split-face block and other CMUs has particular value in coastal regions because of resistance to damage by wind and water.

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Please visit Path's website at [www.toolbase.org](http://www.toolbase.org) for additional and up to date information about this subject.