



Architectural Cast Stone Field Guide

Tips For Working With Westbrook Concrete Block Architectural Cast Stone Products

Manufacturer

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A Practical Reference Guide For The Field

Westbrook Concrete Block, Inc.® Architectural Cast Stone is a uniquely produced stone masonry product composed of a high-density mixture of fine aggregate, limestone, silica sand, and portland cement. Its classic look, structural integrity, and durability have made it a popular choice among contractors, and specifiers. Follow the tips in this guide to ensure successful installation, handling, and maintenance.

Quality Assurance

- » Viewing conditions should be equal to approved sample when viewed in direct daylight at 10' between units of similar age, subjected to similar weathering conditions.
- » Do not reject units with minor chipping resulting from shipping and delivery unless chipping is obvious under direct daylight at 20' as determined by architect.
- » Crazeing has no structural or durability significance and does not by itself constitute a cause for rejection.
- » Efflorescence commonly occurs shortly after building wash down; in the fall and winter months when vapor transmission slows down; when masonry stays damp for extended periods of time; and is not cause for rejection.
- » Clean samples based on Westbrook Concrete Block recommendations.
- » Submit copies of all shop drawings to the specifier and owner as required.

Lifetime Warranty

Westbrook Concrete Block, Inc. warrants its products to meet ASTM manufacturing guidelines and specifications provided the products have been installed, used and maintained according to accepted ASTM masonry standards and as recommended by the manufacturer. (For complete warranty information, please see the Westbrook Concrete Block, Inc. Terms and Conditions of Sale.)



Installation

Westbrook Concrete Block's Architectural Cast Stone must be installed according to standard masonry specifications and within the guidelines of local building codes.

- » Refer to specifications in NCMA TEK Bulletins and Section 048100, 047200 & 042200 to install units in conjunction with masonry.
- » Pull units from multiple cubes during installation to minimize variation in color and help with natural blending. Westbrook Concrete Block products are manufactured from natural limestone that has color range as part of its natural beauty.
- » Waste. For various reasons due to shipping, handling or the manufacturing process, a small amount of product may have blemishes or chips and should be used for field cutting for maximum material utilization. When ordering material, please allow for waste and saw cutting in your material estimate.
- » Cut units using a motor-driven masonry saw. Finished ends should be turned to the visible side and the saw cut turned to the inside of the mortar joint to hide exposed aggregates and saw marks.
- » When specified, fill dowel holes and anchor slots completely with mortar or non-shrink grout. Holes drilled in coping units for light or fence posts should be filled with flexible caulk to prevent coping units from cracking due to movement.
- » Set units in full bed mortar, unless otherwise indicated on drawings.
- » Fill vertical joints with mortar.
- » Make joints $\frac{3}{8}$ ", unless otherwise indicated on the drawings.
- » Use Westbrook Concrete Block Type N Mortar (ASTM C270). Westbrook Concrete Block Type S is also acceptable.
- » Sealing is not required. All Architectural Cast Stone is produced with an integral water repellent (IWR) in the mix design. If sealing is required, apply a non bridging breathable sealer typical of Prosoco's Sure Klean® Weather Seal, Siloxane WB Concentrate or Siloxane PD according to manufacturer's recommendations.
- » All Architectural Cast Stone products are shipped on a pallet and have one unfinished side. Architectural Masonry Veneer units have only one finished face. Textured units are to be set with the texture face forward. Smooth units are stacked "face up" on the pallet.
- » Not all ends are finished. Custom cast stone units do not have returns or finished ends unless otherwise ordered and noted on the shop drawings. Architectural Masonry Veneer units have an unfinished back, one finished face, and approximately 40% – 60% of the units have one smooth finished end.
- » Cover wainscot for protection and bond separation with plastic, felt paper or other approved products.
- » For best results cover freshly installed masonry products with plastic to ensure the wall system stays dry during the curing process especially if rain or cold weather is expected.

Leaders In LEED®

Many Westbrook Concrete Block products contribute to the achievement of LEED credits on projects. We proudly support the development of green product innovations and are committed to developing and improving our entire product line with respect to the environment.



Managing Moisture Control, Shrinkage and Cracking

Westbrook Concrete Block's Architectural Cast Stone stone, like all concrete masonry products, may shrink slightly. The most common shrinkage/restraint issues come from drying shrinkage, temperature changes, carbonation and differential movement.

- » Kiln fired clay brick expands as it absorbs moisture and concrete masonry units shrink. This differential movement needs to be controlled when utilized with clay products.
- » Dry Block mortar additive can be included in the mortar mix when a water repellent wall system is required. This is however not necessary.
- » Control movement in the wall system. To do this and minimize control joints consider horizontal joint reinforcement, bond separation between different building products (Brick vs Concrete Masonry), and the use of control joints. For Concrete Masonry units used as a wainscot with brick above, bond separation should be considered with horizontal joint reinforcement every 16" o.c. or every course on 12" and 16" tall units and appropriate control joints. Please refer to the appropriate NCMA TEK Guides.
- » Control joints are required at all openings, changes in wall height, between main intersecting walls, corners and for long running walls without openings at a distance of 1 1/2 times the height of the masonry, as outlined in TEK Guide 10-2C. The empirical method notes that the distance is for the masonry only and if brick is used, it should be treated independently for "expansion" and the appropriate brick technical guidelines followed. The most common shrinkage/restraint issues come from drying shrinkage, temperature changes, carbonation and differential movement.
- » In using elastic (control) joints, refer to NCMA TEK Bulletins 10-1A Crack Control in Concrete Masonry, 10-2C Control Joints for Concrete Masonry Walls — Empirical Method, 10-03 Control Joints for Concrete Masonry Walls – Alternative Engineered Method, 10-4 Crack Control for Concrete Brick and Other Concrete Masonry Veneers, and 5-2A Clay and Concrete Masonry Banding Details for guidelines. Refer to NCMA TEK Bulletin 3-6C Concrete Masonry Veneers for proper veneer anchoring.

Tolerances

- » Dry tamped stone is not structural. It's designed to carry only its own weight. Utilize architectural precast if stone is required to be structural.
- » Maximum size ratio is generally 15 to 1. Units should not be manufactured longer or larger than 15 times the thinnest dimension. Architectural precast, used with rebar, has a maximum size ration generally 20 or 25 to one depending on the unit profile and shape.
- » Do not deviate by more than plus or minus 1/8" from approved cross-section dimensions.
- » Do not deviate by length of units by more than length/360 or plus or minus 1/8", whichever is greater, not to exceed plus or minus 1/4".
- » Warp, bow, or twist: Do not exceed length/360 or plus or minus 1/8", whichever is greater.
- » For installation tolerances comply accordingly:
 1. Variation from Plumb: Do not exceed 1/8" in 5' or 1/4" in 20' or more.
 2. Variation from Level: Do not exceed 1/8" in 5', 1/4" in 20', or 3/8" maximum.
 3. Variation in Joint Width: Do not vary joint thickness more than 1/8" or 1/4" of nominal joint width, whichever is greater.
 4. Variation in Plane between Adjacent Surfaces: Do not exceed 1/8" difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

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Handling and Storage

- » Protect units at all times to prevent chipping, cracking, staining, or other damage.
- » Handle long units at the center and both ends simultaneously to prevent cracking.
- » Store units on pallets with non-staining waterproof covers.
- » Do not double stack pallets.
- » Ventilate units under covers to prevent condensation.
- » Prevent contact with dirt and splashing.
- » Do not use pry bars or other equipment in a manner that could damage units.

Repair

- » Repair chips and other surface damage if noticeable when viewed in direct daylight at 20'.
- » Use only repair methods that are approved by architect.
- » Use materials provided by manufacturer.

Cleaning

- » Clean exposed units after mortar is thoroughly set and cured. The wall should be cleaned within 1 to 2 weeks of installation for best results.
- » Perform test of cleaner on small area of 4' x 4' on each profile and color; then receive approval by architect before full cleaning. Let test area dry 4 to 5 days before inspection. Keep test area for future comparison.
- » It is not advised to clean in cold temperature.
- » Do NOT use the following to clean units:
 - » Muriatic acid
 - » Power washing
 - » Sandblasting
 - » Harsh cleaning materials or methods that would damage or discolor surfaces
- » Clean units by wetting down the surface first, before using the appropriate Sure Klean cleaner, brush on cleaner, let dwell for 2 to 3 minutes. Reapply cleaner, scrub surface with masonry brush and rinse off thoroughly. Areas with heavy soiling use a wood block or non-metallic scraper.
 - » Pay close attention to weather and evening temperature's in colder months and follow cleaner manufactures instructions.
 - » Darker colored units should be cleaned with Prosoco Light Duty Cleaners. It is likely that darker units will show a white haze and will require delicate cleaning techniques to ensure consistency.
- » **Sure Klean® 600 Detergent**
Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking.
- » **Sure Klean® Vana Trol®**
Concentrated acidic cleaner for new masonry surfaces subject to vanadium, manganese and other metallic stains. Is designed to simplify rinsing and reduces potential for efflorescence.
- » **Sure Klean® Custom Masonry Cleaner**
Removes concrete splashes, excess mortar, mud, retarders, heavy efflorescence, embedded stains, rust and surface soiling from textured to custom masonry surfaces.



» **Sure Klean® Light Duty Concrete Cleaner**

Specially formulated to remove common construction and atmospheric staining from a variety of substrates, including smooth architectural and engineered concrete, custom masonry, concrete brick, manufactured stone and decorative pavers. This general purpose, non etching acidic cleaner removes rust, mud, atmospheric dirt, mortar smears and other stains without altering the surface texture. Light Duty Concrete Cleaner adds depth to colors, brightens white matrices and exposed aggregate.

