



## 04733 - Calcium Silicate Building Stone

### 04233 - US (04 73 23-US)

Citadel® Building Stone  
 Laurier Building Stone  
 Shadow Stone® Building Stone  
 Old Mill Building Stone  
 Cumberland Building Stone  
 Old Country Building Stone



## PRODUCT DESCRIPTION

**BASIC USE** - A calcium silicate building stone unit used in full-bed masonry veneer construction for both interior and exterior applications. For residential, commercial and institutional applications.

**COMPOSITION AND MATERIALS** - Manufactured calcium silicate building stone units contain no Portland cement. They are pressure-formed and autoclave cured; resulting in high-density, severe weathering modular building stone units, with one or more finished faces. Refer to *ARRISCRAFT•NOTE – Calcium Silicate Masonry Units* for further information. They may be site cut, trimmed and finished to custom lengths, shapes or sizes, as necessitated by site conditions.

**SHAPES AND SIZES** - Arriscraft Building Stone products are available in a variety of standard sizes.

	CODE	HEIGHT	LENGTH	BED
<b>Citadel® Building Stone</b> Made in Cambridge	CIT23	2-3/8"	Random	3-7/8"
	CIT36	3-13/16"	Random	3-5/8"
	CIT52	5-1/4"	Random	3-1/2"
	CIT81	8-1/8"	Random	3-1/2"
<b>Georgia Citadel® Building Stone</b> Made in Georgia	GC23	2-3/8"	Random	4"±1/4"
	GC35	3-5/8"	Random	3-5/8"
	GC52	5-1/4"	Random	3-1/2"
	GC81	8-1/8"	Random	3-3/4"
<b>Laurier Building Stone</b> Made in Cambridge	LAU23	2-3/8"	23-5/8"	3-3/4"
	LAU52	5-1/4"	23-5/8"	3-1/2"
	LAU81	8-1/8"	23-5/8"	3-1/2"
	LAU11	11"	23-5/8"	3-1/2"
<b>Shadow Stone® Building Stone</b> Made in Cambridge	SHA22	2-5/16"	23-5/8"	3-3/4"
	SHA50	5"	31-5/8"	3-1/4"
	SHA75S	7-5/8"	23-5/8"	3-3/4"
<b>Old Mill Building Stone</b> Made in Cambridge	OLD52	5-1/4"	Random	3-1/2"
	OLD11	11"	Random	3-1/2"
<b>Cumberland Building Stone</b> Made in Georgia	CUM35	3-5/8"	Random	3-1/2"
	CUM75	7-5/8"	Random	3-5/8"
	CUM115	11-5/8"	Random	3-5/8"
<b>Old Country Building Stone</b> Made in Georgia	OC21	2-3/16"	Random	3-13/16"
	OC34	3-7/16"	Random	3-13/16"
	OC46	4-11/16"	Random	3-13/16"

Shipped material also includes a percentage of shorter random length units which can be used by the installer in creating the ashlar bond patterns and around openings and at internal corners. Contact your local Arriscraft representative or dealer for additional information.

**TOLERANCES** - Arriscraft Building Stone products are fabricated to a tolerance of ±3 mm (1/8"). Split, rocked, or tumbled units, by the nature of their random finish, may have dimensional variations exceeding this value. Calcium Silicate Building Stone units are shop inspected to be sound and free of cracks, chips or other defects that would either affect the serviceability or strength of the unit, or become exposed once installed and visible when viewed from a distance of not less than 3 metres (10 ft.) under diffused light.

**LIMITATIONS** - Manufactured masonry products are generally intended for above grade installations. All manufactured masonry units, regardless of their composition, are inherently absorptive, and none are intended for use below grade. Units installed below grade will wick moisture from the soil that is in contact with the masonry units and create a condition known as "rising damp" in the masonry veneer.

In colder climates, masonry walls at grade may become exposed to de-icing compounds. Like all types of manufactured masonry units, calcium silicate masonry units should not be installed where they will be directly exposed to de-icing compounds used to melt snow and ice from pavements. For information about installing masonry at grade refer to the "At Grade Design Ideas" brochure. The function of caps and copings is to prevent moisture from entering the building envelope through the top of the wall. As most manufactured masonry units are produced in relatively short lengths, if they are used as a cap or coping material, more mortar joints are required between the individual units. These mortar joints are the most likely entry point for moisture to infiltrate the building envelope. As such, it is generally recommended within the industry that longer components, such as quarried stone or metal parapet cap flashing, be used to reduce the number of joints thereby limiting the areas that may allow moisture infiltration of the building envelope.

**FINISHES** - Standard surface finishes for each Building Stone product include split, rocked and tumbled in various combinations.

**COLORS** - Standard colors for each of the Building Stone products are as follows:

- Citadel® Building Stone: Algonquin, Antique White, Desert Brown, Cashmere, Driftwood, French Country, Manitoulin Mist, Montana Sand, Traditional Grey and Willow Breeze
- Georgia Citadel® Building Stone: Autumn Harvest, Cobble Hill, Indiana Blend, Iron Mountain, Mocha and Silver Slate
- Laurier Building Stone: Brown Blend, Canyon Buff, Charcoal, Mahogany, Walnut and White
- Shadow Stone® Building Stone: Canyon Buff, Driftwood, and Jasper
- Old Mill Building Stone: Castle Grey, Hickory, Sandalwood and Turret Buff
- Cumberland Building Stone: Rustic Bark, Sienna, Savannah and Weatherwood.
- Old Country Building Stone: Big Horn, Brown (OC21 Size Only), Pine Bluff, Smoky Mountain, Sugarcane.

Colors within each product group may be blended in a wall to achieve a more natural appearance. Information pertaining to common color blends for each product line is available upon request. Not all colors within a product group are available in all sizes. Contact Arriscraft International for a detailed listing of colors and sizes available.

Custom colors are also available on a minimum order basis. As a manufactured product, Arriscraft Building Stone products are monitored for color consistency. Slight variations between batches may occur, and it is recommended that the installer mix units from different skids during installation.

Consultants should review samples prior to selecting a particular color and finish.

## TECHNICAL DATA

**APPLICABLE STANDARDS** - Required properties for calcium silicate masonry units are described in ASTM C73, *Standard Specification for Calcium Silicate Face Brick (Sand-Lime Brick)*. This standard classifies calcium silicate products as either moderate-weathering or severe-weathering depending on the material's tested physical properties of compressive strength and 24-hour absorption. Calcium Silicate Building Stone products meet the requirements of this standard.

## INSTALLATION

**DELIVERY** - Arriscraft Building Stone products are delivered to the site in protective packaging.

**HANDLING** - Lift skids with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect edges and corners.



**STORAGE** - Store Arriscraft Building Stone products in a manner designed to prevent damage and staining of units. Stack units on timbers or platforms at least 3" above grade. Place polyethylene or other plastic film between wood and other finished surfaces of units when stored for extended periods of time. Stored units should be covered if exposed to extreme weather conditions.

Do not use de-icing compounds to remove ice from masonry surfaces.

**PREPARATORY WORK** - It may be advantageous under hot, dry weather or windy conditions to pre-dampen the units prior to placement in the wall. Damp units should be surface dry at the time of placement.

For additional information when constructing in hot or cold weather refer to the ARRISCRAFT•TECH bulletins titled *Hot Weather Masonry Construction* and *Cold Weather Masonry Construction*.

**INSTALLATION** - Arriscraft Building Stone products must be installed using approved materials and techniques for each specific installation.

Construct masonry veneer with an adequate number of elastic movement joints, properly located to accommodate differential movement. Refer to ARRISCRAFT•NOTE – *Building Movement Joints* for further information.

Construct masonry veneer in accordance with TMS 402-11/AC1530-11/ASCE 5-11, Building Code Requirements for Masonry Structures in the United States, and any local requirements stipulated by the authorities having jurisdiction.

Mortar joints between units in any direction should be consistent to the following thicknesses:

- Citadel® Building Stone: 1/2"
- Georgia Citadel® Building Stone: 1/2"
- Laurier Building Stone: 1/2"
- Shadow Stone® Building Stone: 3/8"
- Old Mill Building Stone: 1/2"
- Cumberland Building Stone: 3/8"
- Old Country Building Stone: 3/8"

Mortar for unit masonry veneer should be a Type N Portland cement-lime mix, proportioned to a 1:1:6 ratio. This ratio refers to:

- 1 part Portland cement (ASTM C150, Type I)
- 1 part hydrated lime (ASTM C207, Type S); and
- 6 parts masonry sand (ASTM C144).

When properly combined with the appropriate quantity of water, it will produce a general-purpose mortar, exhibiting good workability and board life in its plastic state, and good durability and flexibility in its hardened state; and conforming to *ASTM C270; Standard Specification for Mortar for Unit Masonry*. For further information, refer to ARRISCRAFT•NOTE – *Mortar for Masonry Veneer*.

Project specific considerations may necessitate the use of other mixes at the designer's discretion. For applications where flexural strength is of particular importance to the design, consult with our Technical Services Department for further recommendations.

Arriscraft International recommends constructing masonry veneer with proper drainage mechanisms, including clear draining air spaces, through wall flashing membranes and weep hole vents. The air spaces must be at least 1" wide, and kept clear of debris, protrusions, mortar fins and droppings. Weep hole vents should be installed at the same level as through wall flashing membranes and spaced not more than 24" on centre horizontally. Refer to ARRISCRAFT•NOTE – *Moisture Management* for further information.

Arriscraft Building Stone products must be connected to a structural substrate with an approved masonry connection system, designed by the consultant for each specific installation. Refer to ARRISCRAFT•NOTE – *Connectors – Part I, Masonry Ties*.

**BOND PATTERNS** - Arriscraft Building Stone products are each installed using different bonding patterns. These are typically described as a percentage ratio, from the smallest to the largest sized units, as follows:

- Citadel® Building Stone: • 3-Unit Bond: 20:40:40 • 4-Unit Bond: 15:20:40:25
- Laurier Building Stone: • 3-Unit Bond: 20:50:30 • 4-Unit Bond: 15:40:30:15
- Shadow Stone®: • 2-Unit Bond: 70:30 • 3-Unit Bond: 30:50:20
- Old Mill: 75:25 Bond
- Cumberland: 20:50:30 Bond
- Old Country: 30:40:30 Bond

Refer to the ARRISCRAFT•CADD sample details for illustrations of each recommended bond pattern.

Standard bond patterns may also be modified by changing the ratio of small to large units. Contact your local Arriscraft representative or dealer for specific information on custom bond patterns.

## AVAILABILITY AND COST

**AVAILABILITY** - Arriscraft Building Stone products are available worldwide. Delivery times for orders will vary based on the complexity of what is required. Arriscraft International cannot be responsible for delays due to fire, acts of God, or any other cause beyond its control or which could not be reasonably foreseen.

Contact Arriscraft International for a list of dealers in your area.

**COST** - Quoted on a project basis for job-specific manufacturing to project requirements.

## WARRANTY

Arriscraft International warrants its products against deterioration for the life of the building, provided the products have been erected and used according to accepted masonry standards, within the guidelines of local building codes and as recommended by the manufacturer. Complete warranty information is outlined on the Arriscraft International standard form of Product Warranty.

## MAINTENANCE

Arriscraft Building Stone products should have excess mortar removed from their faces by brushing as they are placed within the wall at the point of tooling. Clean Arriscraft Building Stone products in accordance with the cleaning guidelines in ARRISCRAFT•CARE. Various masonry detergents and cleaning systems can change the colour of masonry products. Acid-based cleaning agents will darken the color of the masonry units. Due to the nature of the tumbled finish, aggressive cleaning of Citadel® or Old Mill Building Stone products is not recommended.

Always pre-test cleaning agents and methods on the job-site mock-up panel or a small inconspicuous area of the wall. The Consultant and/or Owner should approve the test area prior to the start of full-scale cleaning operations.

Refer to ARRISCRAFT•CARE – *Cleaning Guidelines* and ARRISCRAFT•NOTE – *Cleaning Masonry* for further information.

Arriscraft International does not recommend the application of water repellent or graffiti-proofing sealers to its masonry products.

## TECHNICAL SERVICES

Arriscraft International offers consultation services to assist with the preparation of details, specifications and with pricing. Enquiries are attended to promptly and without obligation.

## RELATED REFERENCES

Arriscraft International distributes an integrated technical information system, comprised of the following components:

- ARRISCRAFT•CADD are sample details which are available in .dwg, .dxf, and .pdf formats
- ARRISCRAFT•DATA are product data sheets
- ARRISCRAFT•NOTE are technical discussions with respect to building construction issues and
- ARRISCRAFT•SPEC are master guide specification sections.

All of these technical resources are available to be downloaded from the Arriscraft International web site at [www.arriscraft.com](http://www.arriscraft.com).

Arriscraft International also makes available samples for color and finish, coursing charts and copies of test reports upon request.



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