

SECTION 04810 - CONCRETE STONE MASONRY ASSEMBLIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Concrete stone masonry units.
- B. Special shapes.
- C. Mortar for unit masonry.
- D. Reinforcement, anchorages, and accessories.

1.2 QUALITY ASSURANCE

- A. Perform Work in accordance with applicable requirements of governing authorities and codes. Comply with applicable requirements for installation of masonry work per ACI 530 and ACI 530.1.
- B. Obtain all exposed masonry units of uniform texture and color, or a uniform blend within ranges accepted from a single manufacturer.
- C. Provide a mock-up for evaluation of product and application workmanship. Construct mockup panel 48 inches by 48 inches (to illustrate stone masonry units, coursing, anchorage, mortar joints and color; pattern of finished wall and control joints.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver mortar materials in original unbroken, undamaged packages with manufacturers labels intact and visible. Store off the ground and undercover until used on the work.
- B. Store or pile sand on a plank platform and protect from dirt and rubbish. Store mortar materials and sand to prevent deterioration or contamination.
- C. Deliver masonry units banded on pallets with protective pallet covers. Prevent damage.
- D. Lift skids with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect edges and corners.
- E. Store masonry units in a manner designed to prevent damage and staining of units Single stack pallets on level ground with waterproof covering to protect from weather.
- F. Do not use calcium-chloride or de-icing salts to remove ice from masonry.

1.4 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer.
- B. Coordination: Coordinate with other Work that is integrated with or built-in masonry. Coordinate masonry flashing with flashing specified elsewhere to insure a complete, watertight flashing system to shed water to building exterior.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Oldcastle Architectural Companies; 375 Northridge Road, Suite 250, Atlanta, Georgia 30350. Tel: (770) 804- 3363. Fax: (770) 804-3369. Email: sales@oldcastleapg.com. Web: http://www.dufferinstone.com.

2.1 PRODUCTS

- A. Concrete Stone Masonry Veneer Units: DUFFERIN Stone Masonry Units as manufactured and distributed by Oldcastle Architectural Group.
- B. Solid units with physical dimensions and characteristics complying with ASTM C 55 and the physical properties of ASTM C 568, Class II.
- C. Wall assembly capable of complying with ASTM E 514, Class E. Special shapes and sizes, including 45 degree angle stone and stone surround shapes, as indicated on the drawings for the pattern specified.
- D. Color: Minimum of three variegated color blending as selected from manufacturers standard selections.
- E. Size: 4 inches in width nominal with face dimensions selected from a minimum of 15 face sizes to match ashlar pattern indicated on Drawings or established in the approved mock-up.
- F. Anchors: Provide anchors to suit design requirements for material and installation requirements.
- G. Mortar Materials: Provide mortar to suit design requirements for material and installation requirements.

2.3 ACCESSORIES

- A. Flashing: Provide flashing as specified in Section 07600.
- B. Weeps: Preformed plastic insect resistant vents with sloping louvers.
- C. Cavity Vents: Molded polyvinyl chloride insect resistant grilles.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify that built-in items are in proper location and ready for roughing into masonry work.
- B. Protect adjacent work areas and finish surfaces from damage during product installation.
- C. Provide for temporary bracing as required during construction.

3.2 INSTALLATION

- A. General: Install in accordance with ACI 530/ASCE 5/TMS 402 and manufacturer’s instructions.
- B. Coursings: Install masonry construction anchored solidly to backing, properly aligned, plumb, and true in required layout, making straight, level courses, unless otherwise indicated. Place varying size of stones to provide a random Ashlar pattern as approved. Maintain mortar joint thickness of 3/8 inch to 3/4 inch either horizontally or vertically. Tool joints Flush, Concave, or Recessed.
- C. Placing and Bonding: Lay masonry in full bed of mortar with full head joints, properly jointed with other work. Buttering corners of joints, deep or excessive furrowing of mortar joints is not permitted. Back-bevel bed joints to remove excess mortar droppings in cavity as work progresses. Fully bond intersections and external corners. Isolate masonry partitions from vertical structural framing members with a control joint as indicated. Provide for expansion and control joints as indicated on the Drawings. Do not adjust masonry units after placing. Where resetting of masonry is required, remove, clean units and reset in new mortar. Leave joints under shelf angles and elsewhere as indicated or required open to receive sealant.
- D. Anchors: Provide anchors to suit design requirements indicated or required.
- E. Build-in items furnished by other trades and leave accurate openings necessary for subsequent installation of other Work to maintain required strength and appearance of masonry construction.
- F. Prevent grout, mortar, and soil from staining face of masonry. Remove grout and mortar from these surfaces immediately.
- G. Protect base of masonry walls from rain splashed mud and mortar splatters.
- H. Install weep holes in veneer masonry at maximum 24 inches on center horizontally above through-wall flashing, above shelf angles, lintels, bottom of walls, and elsewhere as indicated on Drawings.
- I. Do not permit mortar to drop or accumulate into cavity air space or to plug weeps.
- J. Install cavity vents a maximum 24 inches on center horizontally at top of each cavity space, below shelf angles and elsewhere as indicated on the Drawings.
- K. Install through-wall flashing over exterior windows, relieving angles, doors, tops of walls, at the inside base of cavity walls, and under sills. Extend ends of sill flashing beyond jamb line and turn up into wall to create an end dam to divert moisture toward the wall face. Extend flashing over veneer, turn up minimum 8 inches and bed into mortar joint of masonry, or sealed to sheathing.

3.3 TOLERANCES

- A. In accordance with ACI 530.1 ASCE6/TMS602
- B. Maximum Variation of Joint Thickness: Plus minus 1/8 inch.
- C. Maximum Offset From Adjacent Unit: 1/8 inch.

3.4 CLEANING

- A. Keep walls clean daily during installation using brushes or rags. Do not allow excess mortar lumps or smears to harden on the finished surfaces.
- B. After mortar is thoroughly set and cured, clean masonry as per methods recommended by NCMA.
- C. Replace defective mortar as required to match adjacent work.

3.5 PROTECTION

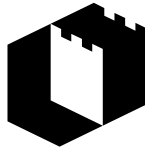
- A. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products.
- B. Protect installed products until completion of project.
- C. Protect concrete stone from contact with mortar, soil, and other materials capable of staining or discoloring the finished product.

END OF SECTION

DUFFERIN® Stone
Masonry Veneer

INSTALLATION
GUIDELINES

Oldcastle Architectural Products
Group is the nation s largest provide
of architectural masonry and
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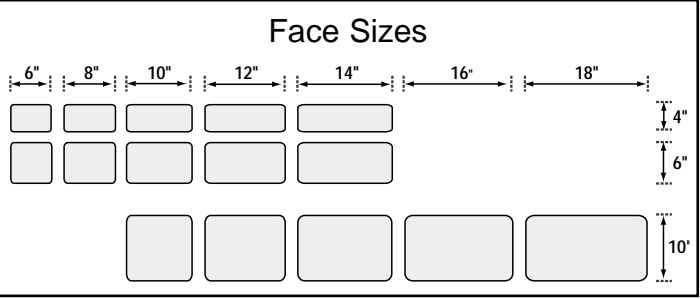
Installation Guide for DUFFERIN® Stone

DUFFERIN Stone:

Congratulations on your choice of DUFFERIN Stone masonry veneer. DUFFERIN Stone provides your new construction project with the distinctive look of natural stone. This modular veneer provides you ease of installation, minimal on-site alterations and simple ordering and handling. This guide has been produced to make you more familiar with the product and installation techniques to ensure your project is a huge success. We encourage you to contact your local DUFFERIN Stone technical sales representative to discuss installation tips and techniques specific to your project.

The DUFFERIN Stone System

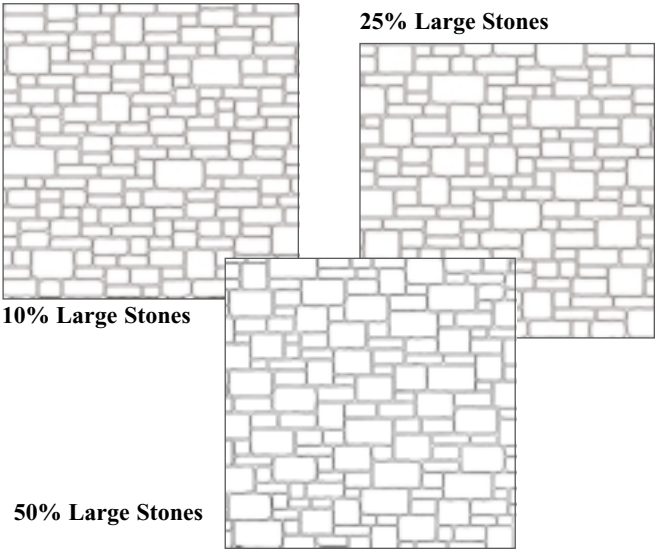
DUFFERIN Stone is a modular masonry veneer with a wide variety of stone sizes which allows you to customize the appearance of each installation. Product heights of 4 inches, 6 inches and 10 inches are each available in five different lengths in two inch increments as follows:



Stones of 4" and 6" height are shipped on the same pallet with a square foot ratio of 40% and 60% respectively. Stone face dimensions are nominal and include a variable joint width from 3/8" to 3/4". All stones are approximately 3.5" in depth.

Selecting a Pattern:

DUFFERIN Stone is a truly modular system and is easily adapted to suite the taste of the most discerning owners. By varying the ratio of 10" height stones you can alter the pattern to best suit your individual style.



Ratio of Stone Sizes

When ordering and installing DUFFERIN Stone, you will use two cubes of materials for your wall coverage. One cube contains the 10" height stone in 5 different lengths. The second cube contains the 4" & 6" height stones, each in various lengths as given in the above stone size chart.

Example:

To achieve a 25% large stone pattern, you will need one pallet of 10 stone and three pallets of 4"/6" stone.

Percent Large Stones	# of 10" Cubes	# of 4"/6" Cubes
0%	0	1
10%	1	9
20%	1	4
25%	1	3
50%	1	1
75%	3	1

Tip: To help familiarize yourself with the pattern try laying out a 6' by 6' area on the ground before starting on the wall.

The DUFFERIN Stone System Difference

DUFFERIN Stone

The variety of stone sizes combined with DUFFERIN Stone's unique palleting system allow for a simplified and fast installation of customized random patterns. DUFFERIN Stone is a full 4" masonry veneer. Palletized quantities eliminate the need for sorting the stone on site. DUFFERIN Stone is installed using the same principles as standard brick with fewer mortar joints and little on-site alterations.

Natural Stone

Irregular sized stones require an expert craftsman and additional installation time to prepare the stone. Stones are randomly packaged and will require sorting and significant cutting on site.

Clay or Concrete Brick

Uniform sizes allow for fast installation of a few limited patterns. Additional corners, bullnose & other special configurations are ordered separately.

Estimating Materials:

DUFFERIN Stone is sold by the *square* foot. To estimate the quantity of DUFFERIN Stone required for your project you need to take the total area to be cladded minus any openings (windows, doors. etc.). DUFFERIN Stone is sold on an installed square foot basis including a variable joint between 3/8" to 3/4". It is recommended to add 3% for simple waste and 5% - 7% for areas where more cuts will be required.

DUFFERIN Surround Stone is sold by the *linear* foot. Simply measure the total linear dimension around all openings where Surround Stone is to be used to obtain the total footage needed.

DUFFERIN Stone does not require special corner units, corners are constructed as with standard brick products.

Tip: always round up to the next full cube, it is better to have part of a cube left over than to be short on materials.

Shipments of DUFFERIN Stone

Weight allowances for truck shipment vary depending on location and route. In general, DUFFERIN Stone pallets weigh in the range of 3,000 to 3,200 pounds depending on product mix. A typical truckload will contain approximately 12 to 14 pallets of material.

Delivery

DUFFERIN Stone is shipped on pallets with a protective pallet cover. Lift pallets with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect pallet edges and corners.

Storage and Handling

Store pallets in a manner designed to prevent damage and staining of the units. For outside storage, single-stack pallets on level ground with waterproof covering to protect from inclement weather. Do not use calcium-chloride or de-icing salts to remove ice from masonry surfaces.

Installation Procedures

Recommended tools and equipment:

Tools and equipment required for installation are identical to other brick masonry projects:

¥ Mason s trowel	¥ 4' Level
¥ Mason s saw or chisel	¥ Mason s hammer
¥ String line	¥ Corner poles,
¥ Soft bristle brush	¥ Mortar board
¥ Wheelbarrow	¥ Hoe
¥ Safety glasses	¥ Metal joining tool
¥ Hard hat	¥ Circular masonry saw

Foundation Requirements:

DUFFERIN Stone is a full masonry veneer with a 3.5" depth, requiring a footing or a ledge for installation*. A 1" to 1.5" air space is recommended between the framed wall and stone. Consult your local building code for specific requirements. As with different brick sizes, the depth of the exterior trim and footing or ledge will need to allow adequate depth for the stone plus air space (typically 4.5" to 5").

*** Tip:** Always check with local building codes for the footing/ledge and air space requirements approved for your area.

Mortar:

Type S or type N mortar complying with ASTM C270 is generally recommended for use with DUFFERIN Stone products. Consult your local DUFFERIN Stone distributor for recommendations on the correct mortar type for your specific application.

Ties:

For residential applications, use non-corrosive masonry ties placed on 16" centers. Install the ties as you lay the stone to insure proper placement of the ties. Ties and their installation should conform to ASTM A153 and all local code requirements.

***Tip:** Always check with local building codes for the required masonry ties approved for use in your area.

Joints:

Typical DUFFERIN Stone installations will use one of two common joints; recessed or flush. Use a variable joint width between of 3/8" to 3/4". When using either type of joint, seal the joint by tooling to ensure that moisture will not be able to penetrate the joint. It is recommended continuous horizontal joints do not exceed three to four feet.

Cutting:

DUFFERIN Stone should require minimal cuts during installation. If cuts are required use a standard masonry saw or masons chisel.

Tip: Make cuts on the inside of a corner to keep a seamless installation, try using your hammer to retexure the cut end.

Flashing & Weeps:

Flashing and weep requirements are set by the local building codes department in your area, as these requirements vary widely throughout the country. It is recommended that you check with and follow the requirements approved by the building codes department for your area.

Control joints:

Use control joints in select locations, such as over garage doors, large windows and on walls that exceed twenty-five feet in length. Control joints can typically be placed in areas to reduce visibility, such as inside corners, behind down spouts and shutters.

Weep Holes and Vents

Install weep holes and vents at proper intervals (32" O.C. and 2" long, above bed joints, typical) at courses above grade, above flashing and at any water stops over windows, doors and beams.

Mock-Ups:

Construct a 3' x 3' sample wall prior to beginning the installation. The sample is used to verify the pattern, color, mortar, and joint style selected for the project. To better visualize the pattern, a 6' x 6' area may be dry laid on the ground.

Cleaning:

Do not use high pressure washers, acid cleaners or bleach. Use masonry cleaner without acid. Follow manufactures instructions for dilution ratios and cleaning. Start at the top of the wall, applying solution to a wet area using a soft bristle brush. Rinse thoroughly removing all solution and residue.

Tip: For projects where a mock-up wall has been constructed, test cleaning agents on the mock-up first to ensure compatibility.

Maintenance:

When installed correctly, DUFFERIN Stone is virtually maintenance free. Sealing DUFFERIN Stone is not necessary and will not significantly improve the performance of product.

We're At Your Service!

The above information is presented as a general guideline for installing DUFFERIN Stone. If you have questions regarding your project, please contact us at 1-877-235-4273 or visit us at www.dufferinstone.com