ECHELON MASONRY

INSTALLATION GUIDE

FOR WATERFORD STONE™

Waterford Stone masonry veneers evoke the natural, time-honored look of hand-cut stone with antiqued edges, dimensional face, authentic color blends, and water repellent integrated throughout each unit. The modular format provides you an easy 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 sales representative to discuss installation tips and techniques specific to your project.

The System

Waterford 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 inch and 7 inch palletize product has seven different lengths while the 11 1/2 inch product has six varied lengths.

Face Sizes

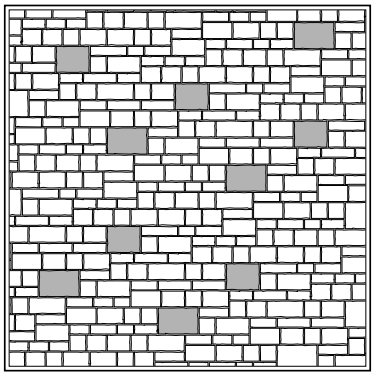
		LENGTH									
		7 in* (178 mm)	8 1/2 in* (216 mm)	10 in* (254 mm)	11 1/2 in* (292 mm)	13 in* (330 mm)	14 1/2 in* (368 mm)	16 in* (406 mm)	17 1/2 in* (444 mm)	19 in* (483 mm)	20 1/2 in* (521 mm)
HEIGHT	4 in* (102 mm)	X	X	X	X	X	X	X			
	7 in* (178 mm)	X	X	X	X	X	X	X	X		
	11 1/2 in* (292 mm)					X	X	X	X	X	X

Unit depth of 3 1/2 inches* (90 mm)

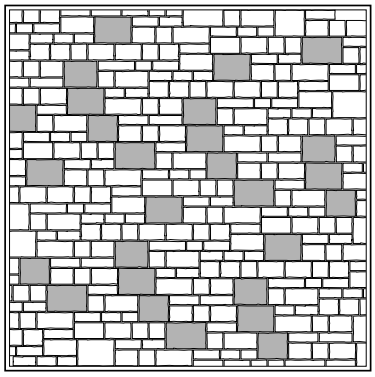
Stones of 4“ and 7" height are shipped on the same pallet, and the 11.5" height are shipped on another corresponding pallet. Stone face dimensions are nominal and include a mortar joint width of a 1/2". All stones are approximately 3.5" in depth.

Selecting a Pattern

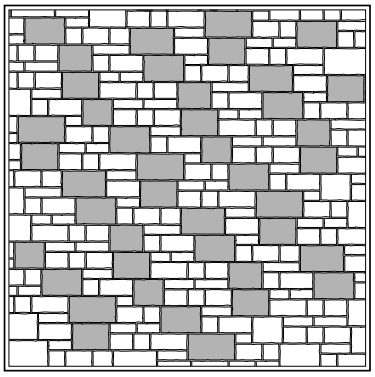
Waterford Stone is a truly modular system and is easily adapted to suit the taste of the most discerning owners. By varying the ratio 11.5" height stones, you can alter the pattern to best suit your individual style.



10% Large Stones



25% Large Stones



50% Large Stones

Ratio of Stone Sizes

When ordering and installing Waterford Stone, you can use two cubes of materials for your wall coverage. One cube contains the 11.5" height stone in 6 different lengths. The second cube contains the 4" and 7" 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 11.5" stone and three pallets of 4"/7" stone.

PERCENT LARGE STONE	# OF 11.5" CUBES	# OF 4"/7" 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 laying pattern, try laying out a 6' x 6' area on the ground before starting on the wall.

The Difference

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

Estimating Materials

Waterford Stone is sold by the square foot. To estimate the quantity of Waterford Stone required for your project you need to take the total area to be cladded minus any openings (windows, doors, etc.). Waterford Stone is sold on a square foot basis including a mortar joint of a 1/2". It is recommended to add 3% for simple waste and 5% - 7% for areas where more cuts will be required.

Waterford 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

Weight allowances for truck shipment vary depending on location and route. In general, Waterford 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

Waterford 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:

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

FOUNDATION REQUIREMENTS

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

TIES

For different types of corrosion resistant ties and spacing recommendations consult TEK 12-01B from the National Concrete Masonry Association.

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

JOINTS

Typical Waterford Stone installations will use one of two common joints; recessed or flush. Use a variable joint width between 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

Waterford Stone should require minimal cuts during installation. If cuts are required, use a standard masonry saw or mason's chisel.

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

FLASHING AND 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 in your area.

CONTROL JOINTS

Use control joints in select locations, such as over garage doors, large windows and on walls that exceed 25 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 manufacturer's instructions for dilution ratios and cleaning. Start at the top of the wall, applying solution to a wet area using a soft bristle brush. Make sure to 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, Waterford Stone is virtually maintenance free. Sealing Waterford 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 Waterford Stone. If you have any questions regarding your specific project please reach out to your sales representative.

FIND YOUR REP

Part 1: General

1.01 - Section Includes

A. Concrete stone masonry units.

B. Special shapes.

C. Mortar for unit masonry.

D. Reinforcement, anchorages, and accessories.

1.02 - 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 mock up panel 48 inches by 48 inches (to illustrate stone masonry units, coursing, anchorage, mortar joints and color, pattern of finished wall and control joints.

1.03 - 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.

1.04 - Project Condition

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 ensure a complete, watertight flashing system to shed water to building exterior.

Part 2: Products

2.01 - Manufacturer

Oldcastle APG
400 Perimeter Center Terrace Suite 1000
Atlanta, GA 30346
EchelonMasonry.com

2.02 - Products

Artisan Masonry Stone Veneers™ meet or exceed all ASTM 1634 Specifications. Individual product test results will vary depending on regional manufacturing.

A. Concrete Stone Masonry Veneer Units: Waterford Stone Masonry units as manufactured and distributed by Oldcastle® Architectural Group.

B. Solid units with physical dimensions and characteristics, complying with ASTM C55 and the physical properties of ASTM C568, Class II.

C. Wall assembly capable of complying with ASTM E513, 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 manufacturer's standard selections.

E. Size: 4" 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.

2.03 - 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

3.01 - 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.

3.02 - Installation

A. General: Install in accordance with ACI 530/ASCE 5/TMS 402 and manufacturer's instructions. 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.

B. 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.

C. Anchors: Provide anchors to suit design requirements indicated or required.

D. 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.

3.03 - 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.

3.04 - 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 CMHA.

C. Replace defective mortar as required to match adjacent work.

3.05 -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 product.

END OF SECTION
SECTION 04810 - CONCRETE STONE MASONRY ASSEMBLIES