

Technical
Specs

STRATFORD STONE™

TABLE OF CONTENTS



Welcome	1
Technical Data	2
Summary Tables	3-4
Workmanship	5
Surface Preparation	6-8
Fig. 1 Wall Assembly	9
Fig. 2 Typical Wall Section	10
Fig. 3 Foundation Wall Base	11
Fig. 4 Foundation Wall Base-Overlapping Foundation	12
Fig. 5 Foundation Wall Base-Continuing Down Foundation	13
Fig. 6 Cladding Transition	14
Fig. 7 & 8 Outside Corner & Inside Corner	15-16
Fig. 9 & 10 Horizontal Transition & Vertical Transition	17-18
Fig. 11 & 12 Eave	19-20
Fig. 13 & 14 Rake	21-22
Fig. 15 & 16 Side Wall-Composition Shingles	23-24
Fig. 17, 18 & 19 Window Sill, Jamb, Head	24-26
Fig. 20 Kickout Flashing (Wall-Eave-Roof Intersections)	27
Fig. 21 Cricket (Roof Penetration)	28
Fig. 22 Chimney Chase	29
Fig. 23 & 24 Column Base	30
Fig. 23 & 24 Column Base	30
Accents and Accessories	34

At OBERFIELDS, our objective is to provide our customers with innovative concrete building materials that are specifically designed to meet their needs and expectations. We offer an array of products for your convenience and scheduling needs.

You deserve a quality product from a manufacturer that is committed to helping you achieve your goals. Our dependable and experienced staff is prepared to assist you with any type of project. This guide has been put together to help you with your building needs in mind.

Please refer to it with any questions regarding proper procedures and application techniques related to our Stratford Stone™ products and accessories. Please remember, this installation guide does not replace or supersede any local building codes.

OUR COMPANY

OBERFIELDS is the leading manufacturer of concrete masonry products in Ohio. We pride ourselves on the innovation of new products and meeting our customers needs.

In response to this, we have created Stratford Stone™. A manufactured stone crafted from molds that replicate the nuances of natural stone.

OUR PRODUCTS

Popular Simulated Stone Styles

Limestone - Rustic Ledgerstone - Stacked Stone

Accent & Accessory Products

Corners - Keystones - Electrical Outlet Covers - Water Tables - Water Faucet Outlet Covers - Address Blocks

OUR GUARANTEE

OBERFIELDS offers a Limited Lifetime Warranty on our Stratford Stone products when installed according to manufacturer's instructions on structures conforming to local building codes.

Warranty coverage is limited to replacement or repair of defective materials only and does not cover labor to remove or replace materials. Warranty coverage is limited to the original purchaser. OBERFIELDS will not be liable for any damage or defects due to faulty or improper installation, willful abuse, misuse, or damage resulting from fire, lightning, or other Acts of God or any other cause beyond the manufacturer's control.



Stratford Stone is designed and produced to meet or exceed building code requirements and testing standards. Please see our supporting data below.

Stone Veneer ASTM-C1670:

Compressive Strength ASTM C1670 & ASTM C39

Bond Strength ASTM C482

Absorption & Density ASTM C140

Linear Drying Shrinkage ASTM C426

Freeze-Thaw Durability ASTM C666A

INGREDIENTS

Portland Cement, Iron Oxide Pigments, Lightweight Aggregate

COLOR RETENTION

All colors are from permanent mineral oxides. No significant-color change is visible over the life of the product.

COMBUSTION

Underwriter's Laboratory listing states 1) Zero flame spread, 2) Zero fuel contributed and 3) Zero smoke developed.



SUMMARY TABLE



Wall Systems	Water Resistive Barrier	Lath	Fastening	Scratch Coat
<p>Wall Type: Wood or steel stud, no more than 16" O.C.</p> <p>Ridge Sheathing: Gypsum wall board Plywood OSB Concrete Board Fiber Board</p> <p>Note: Non-rigid insulation board over rigid sheathing is limited to max 1/2" thick.</p>	<p>Minimum 2 separate layers #15 felt (ASTM D 226 No. 15, Type 1) Or Minimum 2 separate layers Grade D paper (ICC-ES Acceptance Criteria AC 38) Or 1 layer house wrap (ICC- ES Acceptance Criteria AC 38), and 1 layer Grade D paper (ICC-ES Acceptance Criteria AC 38), or #15 felt (ASTM D 226 No. 15, Type 1)</p> <p>Note: One layer of paper-backed lath meeting the requirements of Grade D paper may qualify for one layer of WRB.</p>	<p>2.5 lbs or 3.4 lbs. self-furred corrosion- resistant lath Or 18 gauge woven wire mesh (ASTM C 1032) Or Alternate lath acceptable with a product evaluation acceptance report showing compliance to ICC-ES AC 275.</p>	<p>Corrosion resistant fasteners (ASTM C 1063) min. 1" into wood framing member or 3/8" through metal framing member.</p>	<p>Mortar, nominal 1/2" thick, Type N or Type S meeting ASTM C270. "Scratch" surface when "thumbprint hard"</p>

Wall Systems	Water Resistive Barrier	Lath	Fastening	Scratch Coat
<p>"Open Stud" Construction</p> <p>Wood or steel, no more than 16" O.C. No sheathing or insulation board only (open studs):</p> <p>Note: Non-rigid insulation board over rigid sheathing is limited to max 1/2" thick.</p>	<p>Minimum 2 separate layers #15 felt (ASTM D 226 No. 15, Type 1) Or Minimum 2 separate layers Grade D paper (ICC-ES Acceptance Criteria AC 38) Or 1 layer house wrap (ICC- ES Acceptance Criteria AC 38), and 1 layer Grade D paper (ICC-ES Acceptance Criteria AC 38), or #15 felt (ASTM D 226 No. 15, Type 1)</p> <p>Note: One layer of paper-backed lath meeting the requirements of Grade D paper may qualify for one layer of WRB.</p>	<p>3.4 lb. Self-furring 3/8" ribbed corrosion- resistant lath (ASTM C 847) Or 18 gauge woven wire mesh (ASTM C 1032) Or Alternate lath acceptable with a product evaluation acceptance report showing compliance to ICC-ES AC 275.</p>	<p>Corrosion resistant fasteners (ASTM C 1063) min. 1" into wood framing member or 3/8" through metal framing member.</p>	<p>Mortar, nominal 1/2" thick, Type N or Type S meeting ASTM C270. "Scratch" surface when "thumbprint hard"</p>

SUMMARY TABLE



Wall Systems	Water Resistive Barrier	Lath	Fastening	Scratch Coat
<p>Clean Concrete, Masonry/CMU, or Stucco</p> <p>Note: walls/surface must be clean and free from release agents, paints, stains, sealers, or other bond-break materials, that may reduce strength of mortar adhesion.</p>	<p>Note: A WRB may be needed to prevent moisture from penetrating the wall.</p>	<p>Install lath if question or concern regarding ability of veneer to adhere to wall.</p> <p>2.5 lb. Or 3.4 lb. self-furring 3/8" ribbed corrosion-resistant lath (ASTM C 847)</p> <p>Or</p> <p>18 gauge woven wire mesh (ASTM C 1032)</p> <p>alternate lath acceptable with a product evaluation acceptance report showing compliance to ICC-ES AC 275.</p>	<p>If lath is applied, use corrosion resistant fasteners (ASTM 1063).</p>	<p>If a scratch coat is required use a nominal 1/2" thick, Type N or Type S mortar, meeting ASTM 270.</p> <p>"Scratch" surface when "thumbprint hard"</p>

Wall Systems	Water Resistive Barrier	Lath	Fastening	Scratch Coat
<p>Existing concrete, masonry/CMU, stucco or brick (structurally sound) (i.e. painted or not clean)</p>	<p>Note: A WRB may be needed to prevent moisture from penetrating the wall.</p>	<p>2.5 lb. or 3.4 lb. self-furring 3/8" ribbed corrosion-resistant lath (ASTM C 847)</p> <p>Or</p> <p>18 gauge woven wire mesh (ASTM C 1032)</p> <p>alternate lath acceptable with a product evaluation acceptance report showing compliance to ICC-ES AC 275.</p>	<p>If lath is applied, use corrosion resistant fasteners (ASTM 1063).</p>	<p>If a scratch coat is required use a nominal 1/2" thick, Type N or Type S mortar, meeting ASTM 270.</p> <p>"Scratch" surface when "thumbprint hard"</p>

Wall Systems	Water Resistive Barrier	Lath	Fastening	Scratch Coat
<p>Metal Buildings or other surfaces/wall construction not listed above.</p>	<p>See manufacturer for recommendations.</p>			



Workmanship

This Installation Guide assumes that construction personnel have knowledge of the materials described and their proper methods of installation.

Prior to commencing activity related to the scope of this Guide, review all adjacent products and other subcontractor's work that precedes the installation of Stratford Stone to ensure that proper workmanship is reflected and that there are no recognizable errors or deficiencies.

Building Code Requirements

Building code requirements vary from area to area. Check with local authorities for building code requirements for your area and application. Carefully read all sections of this Guide and follow the manufacturer's installation instructions before proceeding with your Stratford Stone application. In the event the manufacturer's installation instruction conflict with the intent of statements made in this document, contact the manufacturer for additional guidance.

Project Site Requirements

Always follow proper job site safety requirements when installing Stratford Stone. Follow all OSHA requirements when installing Stratford Stone products.

Material Requirements

Flashing

All flashing and flashing accessories must be corrosion resistant materials and integrated with the water resistive barrier (WRB) materials. Flashing must be installed at all through-wall penetrations and at terminations of Stratford Stone installations.

Rainscreen Drainage Plan Systems

Rainscreen building techniques have been used in construction for many years. These techniques are typically used to improve the escape of incidental water and decrease drying time. Rainscreen products such as drainage mats or formed polymer sheeting or construction techniques (such as strapping or furring) that create a capillary break/air space between the cladding and the primary water resistive barrier can be effectively incorporated into Stratford Stone applications. Refer to the rainscreen/drainage system manufacturer's recommendations for applications with adhered concrete masonry veneer wall systems.

Weep Screed

Weep screeds must be of corrosion resistant metal-minimum 0.019 inches or a minimum No. 26 gage, or a plastic weep screed minimum 0.050", and with a minimum vertical attachment flange of 3 1/2" wide.

Lath

Stratford Stone recommends using the following lath materials:

- 2.5 lb/yd² metal lath meeting ASTM C847
- 3/8" rib, 3.4 lb/yd² self-furred metal lath meeting ASTM C847
- 18 gauge (or heavier) woven wire mesh meeting ASTM C1032
- Other approved lath may be acceptable for use with Stratford Stone provided the lath meets an appropriate ASTM standard or the lath product is consistent with the Stratford Stone manufacturer's installation instructions and has an evaluation acceptance report from an ANSI Accredited Evaluation Service showing compliance with ICC-ES Acceptance Criteria 275 (AC275).

All lath and lath accessories must be made of corrosion resistant material. All lath material must be self-furred or use self-furring fasteners.

Fasteners

Corrosion resistant fasteners are used to secure flashing and lath. A variety of fasteners are available such as staples, screws, and nails. For specific fastener selective criteria, refer to ASTM C1063 Sec. 7.10.2.

- Wood Framing-Corrosion resistant staples, corrosion resistant roofing nails, or corrosion resistant screws and washers, all to be of sufficient length to penetrate a minimum of one inch into framing members.
- Metal framing or panels-corrosion resistant, self-tapping screws with sufficient length to penetrate 3/8 inch through metal studs or panels, with heads or washers large enough to not pull through lath.
- Masonry walls or panels-corrosion resistant concrete screws or powder actuated fasteners (or cap fastener), with heads or washers large enough to not pull through lath.



Mortar

Any of the following mixes may be used:

Mix 1:

- 1 part Portland Cement (ASTM C150)
- 1 part Lime (ASTM C207)
- 4.5 parts Sand (ASTM C144)
- Portable Water

Mix 2:

- 1 part Type S Masonry Cement (ASTM C91)
- 2.25 parts Sand (ASTM C144)
- Portable Water

Mix 3:

- 1 part Type N Masonry Cement (ASTM C91)
- 2.25 parts Sand (ASTM C144)
- Portable Water

Premix Mortar

Premixed mortars must meet the requirements of ASTM C270 for Type N or Type S. Check with the mortar manufacturer to determine if the premixed mortar is suitable for installation of adhered concrete masonry veneer and it meets building code requirements of 50 psi shear bond when tested in accordance with ASTM C482.

Check with OBERFIELDS on additional requirements and recommendations if using color pigments, integral bonding agents or other admixtures in your mortar mix.

Mortars mixed with high amounts of sand will tend to be less workable. Mortar mixed with higher amounts of cement will provide a greater bond strength but may be prone to increased dry-shrinkage cracking. Type N mortars are generally easier to grout than Type S. For the scratch coat, installation of Stratford Stone, and grouting Type N or Type S mortar meeting the above requirements are acceptable.

Surface Preparation

Walls and Wall Systems

Verify structural and surface integrity of existing wall prior to installation. Stratford Stone units must only be applied to structurally sound walls or structures.

Adhered Concrete Masonry Veneer may be successfully applied to other walls or wall systems that include standard wood and metal framing, rigid sheathing, or cementitious stucco scratch or brown coat that has not been slicked or burned.

Other wall systems or structures may be acceptable with

Qualifications:

- **Masonry walls, poured-in-place concrete walls, and concrete tilt up panels** must be free of dirt, waterproofing, paints, form oil, or any other substance that could inhibit the mortar bond. Acid washing, sand/bead blasting, pressure washing, or a combination of these methods may be necessary to achieve the required bondable surface. If a bondable surface cannot be achieved, attach lath and scratch coat before installing Stratford Stone.
- **Existing masonry surfaces** must be evaluated for mortar and face integrity and must be free of dirt, waterproofing, paint, or any other substance that could inhibit the mortar bond. Surfaces may be cleaned by pressure washing, acid washing, sand/bead blasting, or a combination of these methods to achieve a bondable surface. If the surface cannot be cleaned, attach lath before applying the mortar scratch coat.
- **Open studs, non-rigid sheathing and metal siding** must be prepared with 3.4 lb paper backed lath with a minimum 1/2" thick scratch coat and allowed to cure for a minimum of 48 hours prior to Stratford Stone installation.

Wall systems outside the scope of this document which may require a specifically-designed installation system for Stratford Stone:

- Structural Insulating Panels (SIPs)
- Insulating Concrete Forms (ICFs)

Wall systems with these substrates are considered unacceptable for the application of Stratford Stone:

- Existing siding in unsound condition
- Deteriorating or unsound masonry surfaces

Water Resistive Barrier

Where a WRB is required, OBERFIELDS recommends installing two separate layers in shingle fashion, starting from the bottom of the wall. The upper layer of the WRB should lap on top of the lower layer by a minimum of six inches. Inside and outside corners must be overlapped a minimum of 16" past the corner in both directions. The WRB should be installed in accordance with the manufacturer's recommendations and be integrated with all flashing accessories, adjacent WRBs, doors, windows, penetrations, and cladding transitions.

Lath

Metal lath should be applied horizontally with the cups up "rough side up", smooth side down" per manufacturer's instructions, and should overlap a minimum of one inch on the horizontal and vertical seams. The ends of adjoining lath pieces should be wrapped around inside and outside corners to the next stud. Lath should be fastened every six inches vertically on each stud or similar spacing on concrete wall surfaces. Do not end lath at corner framing. It is preferred that lath fasteners do not penetrate through the exterior sheathing between the studs.



Flashings/Weep Screeds/ Casing Bead/Movement Joints

The weep screed should be corrosion resistant metal minimum 0.019-inch or No. 26 galvanized sheet gage, or a plastic weep screed minimum 0.050", and with a minimum vertical attachment flange of 3 1/2" wide.

All flashing and metal detail pieces should be manufactured of corrosion resistant material.

Verify that all flashing, including roofing kickout flashing, has been properly installed. Although roof flashings are not part of the wall cladding system, they are necessary for proper moisture management. Flashing material should extend above horizontal terminations, roofing material, and drainage planes or drainage products.

All flashing material should be integrated with water resistive barriers to prevent moisture penetration into structure. The WRB should overlap the weep screed flange.

*Movement joints-do not install Stratford Stone over these joints.

Clearances

- On exterior stud walls, weep screeds and other base flashings should be held a minimum of 4" above grade or a minimum of 2" above paved surfaces such as driveways, patios, etc. This minimum can be reduced to 1/2" if the paved surface is a walking surface supported by the same foundation supporting the wall.
- On exterior stud walls where the Stratford Stone continues down a concrete or CMU foundation wall, and where a weep screed is incorporated into the wall-to-foundation transition, at the bottom maintain minimum 2" clearance from grade, or 1/2" clearance from a paved surface.
- On exterior stud walls where the Stratford Stone continues down a CMU foundation wall, with WRB and lath installed down to the weep screed at bottom, maintain minimum 4" clearance from grade, or 2" clearance from a paved surface.
- Where Stratford Stone is applied over an exterior concrete or CMU wall, maintain 2" clearance from grade or 1/2" from a paved surface.
- Over an exterior concrete or CMU wall that is not enclosing conditioned space (i.e. Landscape walls, pillars, columns, etc).

Installation of Adhered Concrete Masonry Veneer

Prior to commencing installation of Stratford Stone, ensure that the WRB and flashing are properly installed and integrated with each other. Refer to the flashing details, referenced in this Guide, for detailing around windows, doors, through-wall penetrations, and Stratford Stone terminations.

Before installing Stratford Stone, lay out a minimum of 25 square feet at the jobsite so there is a variety of sizes, shapes, and colors from which to choose. Mixing Stratford Stone sizes, shapes, textures and color will allow for variety and contrast in the design to achieve the desirable finished project.

Mortar Scratch Coat

After the lath is installed, apply a nominal 1/2" thick layer of mortar over the lath, ensuring the lath is completely covered with mortar to allow for scoring of the surface. The mortar should be applied with sufficient pressure and thickness to fully embed the lath in mortar. Once the mortar is thumbprint hard, scratch (score) the surface horizontally to create the mortar scratch coat. Moist curing the mortar scratch coat will help reduce cracking and ensure proper hydration during curing. Before applying Stratford Stone, the mortar scratch coat should be dampened so that the surface appears wet but free of standing water.

Grouted Adhered Concrete Masonry Veneer Application

Tip: Installing Stratford Stone from the top down will minimize cleanup requirements.

Prior to the application of mortar to the scratch coat or the back of the Stratford Stone, the scratch coat and back of the Stratford Stone should be moistened so that the surfaces appear damp but are free of standing water. The back of each Stratford Stone should be entirely buttered with mortar to a nominal thickness of 1/2". Cover the entire back of the Stratford Stone, not just the perimeter. Buttered Stratford Stone should be firmly worked onto the scratch coat and slide slightly back and forth or with a slight rotating motion to set the Stratford Stone. With the proper mortar mix, moisture content, and scratch coat preparation, the installer will feel the mortar start to grab within a few seconds of the setting movement process. At this point, no further movement of the Stratford Stone should be made as bonding will be broken. If the Stratford Stone is inadvertently moved after initial set has begun, it should be removed, mortar scraped off the back of the Stratford Stone and scratch coat, and then reinstalled following the application process. Grouting the joints should be completed only after there is a grout bag, filling joints to the desired depth, ensuring that mortar is forced into all voids. Grout should be "thumbprint hard" before raking the joints. This curing time before the grout is ready will vary significantly with temperature and humidity. Use a wooden raking stick or pointed tool to rake the joints to the desired depth. Extra precaution should be taken while raking so the surface of the Stratford Stone is not damaged. Clean off remaining grout debris on the Stratford Stone surface with a dry, soft-bristled brush.

To prevent mortar smearing, DO NOT use a wet brush to treat uncured mortar joints.



Tight Fitted Adhered Concrete Masonry Veneer Application

The back of the Stratford Stone and the scratch coat should be moistened with the surfaces appearing damp but free of standing water.

Tight fitted Stratford Stone should be applied from the corners toward the middle of a wall, and from the bottom toward the top of the wall.

Cold Weather Application

Stratford Stone applications should be protected from temperatures below 40 degrees F (4 degrees C). The use of anti-freeze admixtures to lower the freezing point of the mortar is not recommended. Accelerating admixtures shall comply with C1384; accelerating admixtures containing calcium chloride are not recommended. Stratford Stone pieces containing visible frozen moisture shall not be installed. The installation area should be sheltered and heated to keep the temperature above 40 degrees F (4 degrees C).

Hot Weather Application

If the environmental conditions during installation exceed 90 degrees F (32 degrees C) additional water may be needed on the scratch coated surface and the backs of the Stratford Stone being applied. Providing shade and/or frequent misting of the wall may be required. Consult with OBERFIELDS to determine if mortar mix hot weather mix options are available. Local building code hot weather methods should be followed.

Cleaning the Adhered Concrete Masonry Veneer

Refer to OBERFIELDS recommendations on cleaning and maintenance. Do not use hard chemicals, such as acid, for cleaning, or use abrasive tools such as wire brushes or power washers.

Sealing Adhered Concrete Masonry Veneer

Refer to OBERFIELDS for recommendations regarding the use of sealants or topically applied water or graffiti-resistant coatings.

Cautions

The following precautions should be taken to ensure a successful and durable Stratford Stone installation.

- Do not subject Stratford Stone to direct or frequent water contact. For example, avoid allowing sprinklers to directly spray onto the surface. Also, downspouts or drainage pipes should be placed so that water is not frequently moistening the Stratford Stone units.
- Do not subject Stratford Stone to contact with de-icing materials, salt, or other harsh chemicals. Prolonged exposure to these conditions may discolor the Stratford Stone or result in surface damage.





Switch Box

5" x 6.5"



Electrical Box, 1 gang

5" x 6.5"



Electrical Box, 2 gang

6.75" x 7"



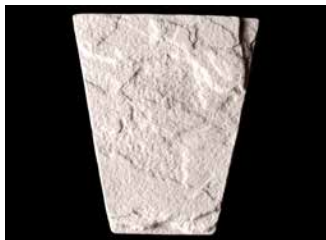
Electrical Box, 3 gang

6.5" x 8.5"



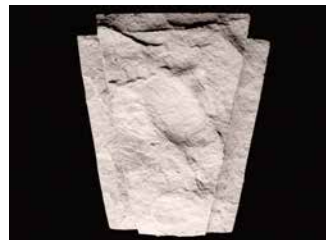
Keystone 1

9" x 10" (5" at bottom)



Keystone 2 Tiered

15" x 16" (9" at bottom)



Water Table

18" x 3" x 2.5"



Water Table

24" x 3" x 2.5"



Address Block

8" x 15.5"



Water Faucet Outlet

6" x 8"





OBERFIELDS
SALES - CORPORATE OFFICE

Masonry, Landscape & Precast
528 London Road
P.O. Box 362
Delaware, Ohio 43015-0362
614-252-0955
740-369-7644
800-845-7644
Fax 740-363-7644

SALES AND MANUFACTURING

Landscape & Precast
1165 Alum Creek Drive
Columbus, Ohio 43209
614-252-0955
Fax 614-252-5858

Masonry & Landscape
10075 Sheehan Road
Centerville, OH 45458
937-885-3711
Fax 937-885-4355

oberfields.com

