



## **Suncrest Stone, Inc.**

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# **Manufacturer's Installation Instructions**

Suncrest Stone recommends checking with local authorities for building code requirements in your area as these codes can vary. Carefully read all installation instructions before proceeding with your project. Suncrest Stone's warranty only applies when installation is in accordance with all applicable codes and the manufacturer's instructions. There may be instances when you may need to consult a code official, architect or an engineer with certain design requirements. Refer to our ICC-ES Evaluation Report Number ESR-3088 for additional information.

### **Estimating Required Footage**

Measure the area to be covered and multiply the length times the height of the wall. Measure, calculate and deduct all openings (windows, doors, other openings). If outside corners are required, measure the linear feet of corners needed. One linear foot of corners equals approximately 2/3 of a square foot of flat area. Deduct amount of flat area covered by corners to arrive at your net square footage of flats.

### **Tools Required**

- Safety glasses, dust mask and any other personal protection equipment.
- Hammer or staple gun and snips
- Level
- Wheelbarrow
- Mixing hoe
- Hock, trowel, masons trowel and margin trowel
- Saw or grinder with diamond blade
- Wide mouth nippers
- Grout bag
- Jointing tool
- Whisk broom

**WALL SYSTEM****Wall Type:**

Wood or steel studs no more than 16" OC

**Rigid Sheathing:**

- Wallboard
- OSB
- Plywood
- Concrete Board
- Insulation Board no more than 1/2" thick installed over rigid sheathing

**WATER RESISTIVE BARRIER**

Two separate layers grade D paper complying with IBC sections 1404.2 and 2510.6 or IRC sections R703.2 and R703.6.3

- OR -

Two separate layers #15 type 1 felt complying with ASTM D 226

- OR -

One layer house wrap complying with ICC-ES AC38 and one layer grade D paper IBC-IRC compliant or one layer #15 type 1 felt ASTM D 226 compliant.

**NOTE:** One layer of paper backed lath meeting grade D requirements may qualify for one layer of WRB

**LATH**

Minimum 2.5 lb/yd<sup>2</sup> Corrosion resistant self furred diamond mesh complying with ASTM C 847

**FASTENING**

Corrosion resistant complying with ASTM C 1063 and IRC R703.6.1 minimum penetration of one inch in wood framing or minimum of 3/8" in steel framing maximum 6" OC vertically and 16" OC horizontally

**SCRATCH COAT**

Type N or Type S complying with ASTM C 926 minimum thickness of 3/8" and score horizontally

**OPEN STUDS****Wall Type:**

Open stud wood or steel studs no more than 16" OC

**WATER RESISTIVE BARRIER**

Two separate layers grade D paper complying with IBC sections 1404.2 and 2510.6 or IRC sections R703.2 and R703.6.3

- OR -

Two separate layers #15 type 1 felt complying with ASTM D 226

- OR -

One layer house wrap complying with ICC-ES AC38 and one layer grade D paper IBC-IRC compliant or one layer #15 type 1 felt ASTM D 226 compliant.

**NOTE:** One layer of paper backed lath meeting grade D requirements may qualify for one layer of WRB

**LATH**

Minimum 3.4 lb/ yd<sup>2</sup> corrosion resistant self furred 3/8" rib complying with ASTM C 847

**FASTENING**

Corrosion resistant complying with ASTM C 1063 and IRC R703.6.1 minimum penetration of one inch in wood framing or minimum of 3/8" in steel framing maximum 6" OC vertically and 16" OC horizontally

**SCRATCH COAT**

Type N or Type S complying with ASTM C 926 minimum thickness of 3/8" and score horizontally

**WALL SYSTEM**

Wall Type:  
Clean CMU

**WATER RESISTIVE BARRIER**

Waterproof fill side of retaining walls

**LATH**

No lath required if surface is clean  
Install lath if adhesion of veneer is questionable-use minimum 2.5 lb/yd<sup>2</sup> corrosion resistant self furred diamond mesh complying with ASTM C 847

**FASTENING**

If lath is applied use corrosion resistant complying with ASTM C 1063 and IRC R703.6.1 spaced a maximum of 6" OC vertically and 16" OC horizontally

**SCRATCH COAT**

Type N or Type S complying with ASTM C 926 minimum thickness of 3/8" and score horizontally

**WALL SYSTEM**

Wall Type:  
Poured concrete clay brick, stucco or other masonry surface, painted, sealed or unclean CMU

**WATER RESISTIVE BARRIER**

Waterproof fill side of retaining walls

**LATH**

Minimum 2.5 lb/yd<sup>2</sup> corrosion resistant self furred diamond mesh complying with ASTM C 847

**FASTENING**

Corrosion resistant complying with ASTM C 1063 and IRC R703.6.1 spaced a maximum of 6" OC vertically and 16" OC horizontally

**SCRATCH COAT**

Type N or Type S complying with ASTM C 926 minimum thickness of 3/8" and score horizontally

**WALL SYSTEM**

Wall Type:  
Metal Siding

**WATER RESISTIVE BARRIER**

Two separate layers grade D paper complying with IBC sections 1404.2 and 2510.6 or IRC sections R703.2 and R703.6.3  
OR  
Two separate layers #15 type 1 felt complying with ASTM D 226  
OR  
One layer house wrap complying with ICC-ES AC38 and one layer grade D paper IBC-IRC compliant or one layer #15 type 1 felt ASTM D 226 compliant.  
NOTE: One layer of paper backed lath meeting grade D requirements may qualify for one layer of WRB

**LATH**

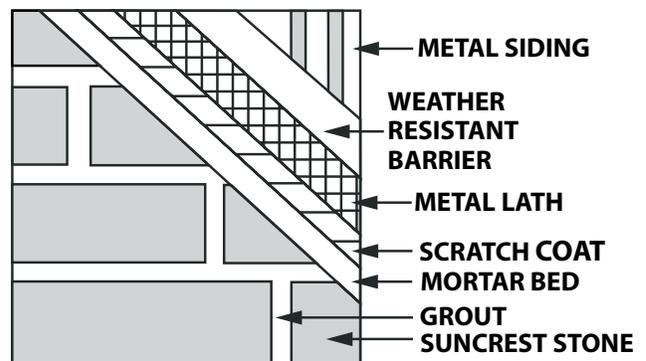
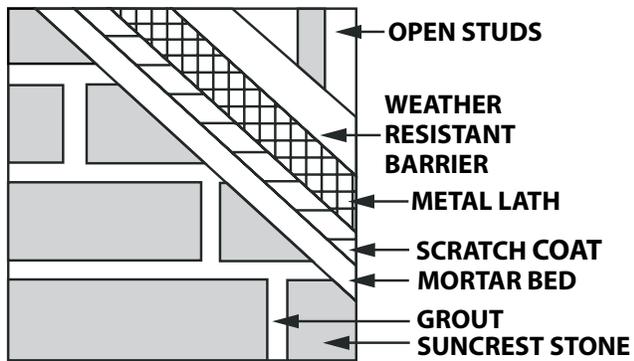
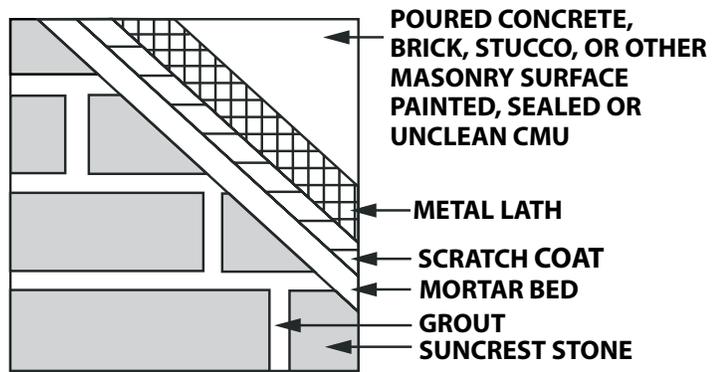
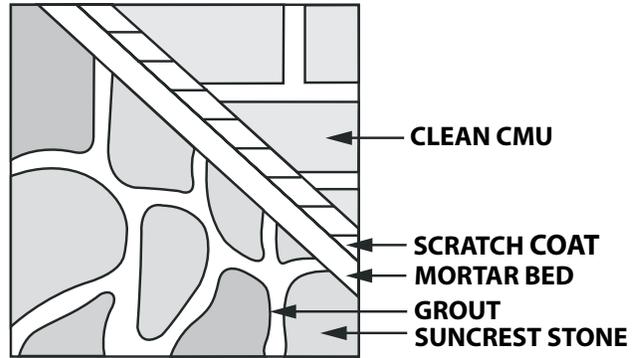
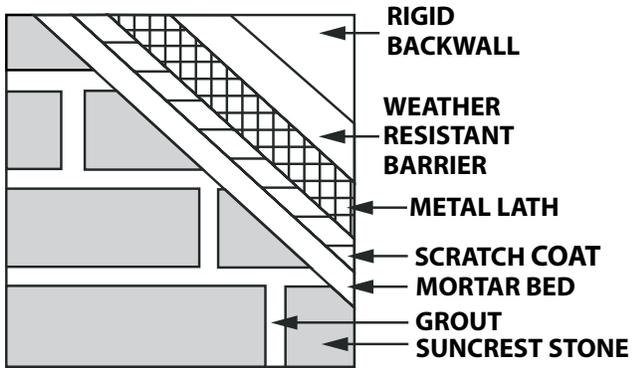
Minimum 3.4 lb/ yd<sup>2</sup> corrosion resistant self furred 3/8" rib complying with ASTM C 847

**FASTENING**

Corrosion resistant complying with ASTM C 1063 and IRC R703.6.1 self drilling, self tapping pancake-head screw with 7/16" head with length suitable to penetrate beyond inside surface a minimum of 3/8"

**SCRATCH COAT**

Type N or Type S complying with ASTM C 926 minimum thickness of 3/8" and score horizontally - allow to dry for 48 hours



## **Flashing**

Rigid and corrosion resistant flashing shall be in accordance with all applicable building codes and shall be installed at all penetrations and terminations of the stone veneer as required by IBC Section 1405.3 or IRC Section R703.8., as applicable. All flashings shall be installed prior to the installation of any weather resistive barrier. Careful attention should be given to proper flashing as it is an important step in maintaining the integrity of the exterior wall system.

## **Weep Screeds**

Weep screeds shall be installed at the bottom of the stone veneer and shall comply with and installed in accordance with IBC Section 2512.1.2 or IRC Section R703.6.2.1, as applicable. Weep screeds must have holes with a minimum diameter of 3/16" spaced at a maximum of 33" on center with a minimum vertical attachment flange of 3/8". It must be corrosion resistant and a minimum 26 gauge.

## **Weather Resistive Barrier**

When a weather resistive barrier is required it must comply with IBC Sections 1402.2 and 2510.6 or IRC Sections R703.2 and R703.6.3, as applicable. Codes require two layers of moisture barrier complying with ICC-ES AC38 and a combination of barriers is acceptable. Please refer to the preceding wall system table for options. The barrier should be applied horizontally with the top layer overlapping the lower layer no less than 2". On vertical joints the barrier should be lapped a minimum of 6". Once again, proper flashing and weather resistive barrier installation maintains the weather resistance of the exterior walls.

## **Lath**

Lath shall be 2.5 lb/yd<sup>2</sup> or 3.4 lb/yd<sup>2</sup> as required and comply with ASTM C 847. Lath should be installed horizontally with the cups of the mesh pointing upward overlapping a minimum of 1/2" on the sides and a minimum of 1" on ends. Terminate ends of lath on a framing member and stagger all joints. On inside and outside corners, wrap the corner to the next framing member (minimum 16"). Avoid joint alignment and the use of small pieces as this creates weak joints and could lead to cracking. Please refer to the wall system table for fastening schedules.

## **Mortar**

- (A) Cement Premixed Type N or S mortar meeting ASTM C 270 requirements
  - Type N or S            1 part
  - Sand                    2 1/2 parts
  - Potable water
- (B) Premixed polymer modified mortar meeting ANSI 118.4 and compatible with adhered lightweight concrete masonry veneer. Must be mixed strictly in accordance with manufacturer's instructions.
- (C) If adding a bonding agent to Type N or S mortars to increase bond strength the additive must meet requirements of ASTM C 270, ASTM C 1059, ASTM C 1059, ASTM C 1384 or CSA A 179.

**Note:** Type S mortar has a higher percentage of Portland cement than Type N. Type N tends to have better workability, however, having a lower amount of Portland reduces the strength and freeze-thaw resistance in comparison to Type S. This should be considered when selecting the type of mortar.

## **Mortar Scratch Coat Application**

After lath installation, apply a mortar scratch coat complying with ASTM C 926. Apply a minimum thickness of 3/8" thick of mortar completely embedding the lath. On clean CMU installations lath is not needed prior to scratch coat. As the scratch coat cures it should be scored horizontally creating a scratched surface to enhance bonding of the setting bed mortar. Moist curing the scratch coat will reduce cracking and ensure proper hydration. **The surface of the scratch coat should be moistened prior to installing the stone to enhance bonding.**

## **Tight Fitting Application**

At a minimum, the use of Type S mortar is recommended for this type of installation. However, for enhanced bond

strength, pre-blended polymer modified mortars should be considered. Polymer modified mortar mixes provide additional bond strength to help prevent de-bonding of the stone due to damage to mortar from freeze-thaw or accidental movement or bumping of adhered stone during the installation process. These mortars provide the ability to shift or move the applied stone for a short period of time after applying. These mortars must be compatible with manufactured stone, meeting the requirements of ANSI 118.4 and used in accordance with the manufacturer's instructions. In tight fitted applications the stone should be applied from the corners toward the middle and from the bottom toward the top of the wall. **The backs of the stones and the scratch coat should be moistened prior to application with the surfaces appearing damp but free of standing water.** If polymer modified mortars are used, some of the working properties and techniques may vary from conventional Type N or S. Consult the mortar manufacturer for instructions.

## **Installation**

Depending on the job and type of stone, installation may begin at the top or bottom of the wall. Starting at the top will aid in keeping the stone clean. To insure proper blending of the stones, use product from several boxes during installation. If applicable, corners should be installed first alternating short and long legs. **The backs of the stone and the scratch coat should be moistened prior to application with the surfaces appearing damp but free of standing water.** Apply a ½" thick layer of mortar to the back of the stone ensuring complete coverage of the back of the stone and press the stone firmly against the substrate using a wiggling action to insure a good bond. The mortar should squeeze out around the edges of the stone. Remove any excess mortar with a trowel and fill any voids on the stone's exposed edges. A chalk line should be used to ensure the installation is level. Stagger the joint lines both horizontally and vertically for a finished appearance. If needed, stones may be cut or shaped with a diamond or carbide blade, mason's trowel, hatchet or nippers. If mortar should get on the face of the stone, wait until it dries and clean with a stiff brush. **Never use wire brushes, harsh cleansers or acid to clean the stone.** Do not use a sponge to wipe or remove the mortar as it may stain the surface of the stone. If a grout line is employed in the laying of the stone, a grout bag is used to fill the joints. Joint widths should not exceed ½" in width. Maintaining consistent joint widths gives a more natural and desirable look when finished. Fill the grout bag with the mortar mixture, creamy paste desired, and squeeze the small end into the joint area to be filled. Try to avoid getting the grout on the face of the stone. If this occurs, allow to dry and brush off with a small broom. Allow the mortar to start becoming firm and using a wooden striking tool, scrape away all excess grout in the joint and also to force the mortar into any voids. After raking the joints, use a hand broom to clean loose mortar from the joints and the stone face.

**Never use a wire brush, harsh cleansers or acid to clean stone veneer. Do not use a pressure washer to clean stone veneer.**

## **Installation at Ground Level**

Suncrest Stone should be installed a minimum of 4" above soil grade or a minimum of 2" above a paved surface. The 2" minimum may be reduced to ½" if the paved surface is a walking surface supported by the same foundation supporting the wall. Install proper flashings, weep screeds and waterproofing barriers prior to stone installation. Provide proper drainage to remove any standing water at base of wall.

## **Cutting/Trimming Stone and Accessories**

Stone and accessory items can easily be trimmed using a mason's hammer, trowel, nippers, tile saw or a hand grinder with a diamond tip masonry blade. Safety glasses and a dust mask should be worn and cutting should be done outside as dust will occur. Place finished edges of stone at exposed areas. With proper placement, cut edges on the stone will not be noticeable.

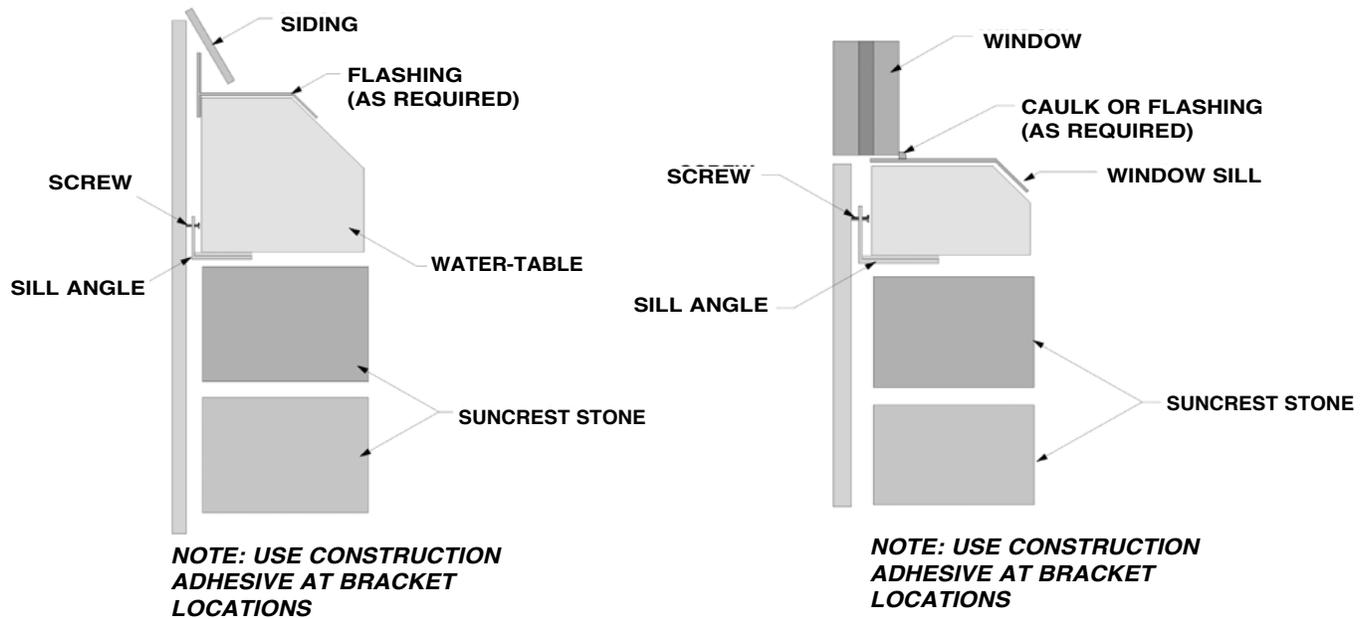
## **Chimney Caps**

Chimney chases should be capped with a one piece cap that extends a minimum of 1" beyond installed stone and should be flashed accordingly to prevent water damage.

## **Hearthstone Installation**

Hearthstones are not recommended nor warranted for exterior applications or surface areas subject to foot traffic such

as walkways, patios and step treads. Installation on floor level or raised hearths is considered normal installation. Hearthstones should be placed in a minimum  $\frac{3}{4}$ " bed of mortar, leveled, and a  $\frac{1}{2}$ " grout joint maintained between stones. Grout should be even with the top of the hearthstones. On a raised hearth the hearthstones should not be cantilevered out beyond the thickness of the installed stone below as this could cause cracking. Grout between the underside of the hearthstone and the stone below to give it a finished appearance. Sealing of the hearthstones may be necessary to aid in removing smoke and soot. Please refer to the section discussing sealers for more information.



### Water-table/Sill Installation

Water-tables/sills should be installed according to the above diagrams to prevent moisture from entering the structure. These are transition pieces for wainscot areas and may also be used for window sills. Install using a galvanized right angle support bracket fastened with corrosion resistant screws or nails penetrating studs at 1" at a minimum of 16" O.C. Use construction adhesive to bond stone at the bracket location only. Caulk and flash using good building practices and in accordance with applicable building codes.

### Capping Exterior Walls/Columns

Suncrest Stone wall caps or column caps are recommended to provide adequate protection to exterior walls or columns. Caps should extend a minimum of 1" beyond the installed stone. Retaining walls should be waterproofed on the fill side of the wall and proper drainage provided.

### Masonry Sealers

The use of sealers is not necessary with Suncrest stone. However, sealers may be used in certain applications to prevent staining due to smoke, dirt or water. If used, make sure it is a saline-based breathable type sealer. The use of sealers will usually darken the color of the stone, give it a glossy appearance and possibly interfere with the proper movement of moisture out of the stone.

### Scuffing

Scuffing will occur on some stones just as it will with natural stone and is caused from pieces rubbing together in normal handling. Some scuff marks may be removed with proper cleaning as described under the cleaning section.

### Extreme Weather Conditions

Hot weather conditions will dictate the use of additional water on the scratch coat and the backs of the stones to prevent excessive absorption of moisture from the mortar. This can be done with a small spray bottle or by using a

brush to apply the water. In cold weather, careful attention should be given to prevent the mortar from freezing. Do not use any anti-freeze products to lower the freezing point of mortar. Installation area should be sheltered and heated to keep the ambient temperature at 40 degrees or higher.

### **Installation at Pool or Water Fountain Locations**

Suncrest Stone should not be installed below the water level in swimming pools or fountains. Careful attention should be given to other areas subject to frequent chlorine water use and should be avoided as this may discolor the stone.

### **Foundations**

When stone is installed at foundation areas, the placement of straw or hay on the ground will aid in keeping the installed stone clean as dirt can be washed onto the stone surface from normal rainfall or water run-off.

### **Salt and De-Icing Chemicals**

Do not use salt or de-icing chemicals on any area adjacent to Suncrest Stone as this will damage the product as it will any masonry product.

### **Efflorescence**

Efflorescence is a water soluble mineral / salt that leaves a surface deposit on many masonry surfaces caused by evaporation of water that penetrated the wall system. Usually seen during cold and damp conditions, it is white in color and will usually disappear with warmer and dryer weather conditions. Should you want to remove efflorescence, allow the stone to dry and remove with clean water and a bristle brush. For more difficult problems, scrub with a solution of 1 part household vinegar to 5 parts clean water and rinse thoroughly.

### **Cleaning**

Should it be necessary to clean Suncrest Stone, use a solution of granulated soap or detergent and water and scrub with a soft bristle brush. Do not use a wire brush, or acid or acid containing products! Do not attempt to clean with a high pressure washer or sandblaster! Undesirable results will be obtained if you use these methods and will not be warranted!

### **Overhead/Horizontal Applications**

Overhead or horizontal applications are outside the scope of our evaluation report and are not recommended. Please check with local building officials, an architect or engineer with any special design needs.

### **Building Codes**

Please be aware of local building codes before installation of Suncrest Stone as these codes vary from one area to another. Refer to Suncrest Stone's ICC-ES Evaluation Report Number ESR 3088 for additional information.

### **Packaging**

Suncrest Stone veneer flats and corners are packaged in corrugated containers with a designated square footage per container. Each crate (48" x 40") contains eight individual boxes. Square footage per box is determined by the profile. Outside corners are packaged by the linear foot. Individual boxes allow for easier handling on the jobsite. Crates stored outside should be protected by a waterproof cover to prevent deterioration of the corrugated containers. Accessories are normally packaged in wooden containers of various sizes. Shipments of product in less than skid lots may carry an additional charge for packaging.

### **Limited Warranty**

Suncrest Stone, Inc. offers a 50 year limited warranty on all its products when installed according to manufacturer's instructions and on structures conforming to local building codes. Please call customer service or visit [www.suncreststone.com](http://www.suncreststone.com) for more warranty information.