



**CORONADO**®

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**INSTALLATION GUIDE**

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Rev.1  
Apr. 20th, 2007

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# PREPARING FOR THE INSTALLATION OF STONE VENEER

**Coronado Stone veneer can be applied to ANY STRUCTURALLY SOUND AND PROPERLY PREPARED SURFACE. No foundation or structural changes are necessary, as Coronado Stone veneer becomes an integral part of the surface to which it is attached.**

## Estimating the quantities of Coronado Stone needed:

1. Measure the length times the height in feet to arrive at the square footage of the area to be covered.
2. Subtract square footage of any large window or door openings in stone application areas.
3. Measure the linear feet of outside corners to determine the amount of corners needed. One linear foot of corner covers approximately 3/4 of a square foot of flat area.
4. Subtract 75% of the corners needed from the total flats needed. Contractors generally add 10% extra stone to allow for breakage, cutting and trimming.

## Tools you may require depending on installation:

Hammer, Wheelbarrow, Hoe, Mason's Trowel, Safety Glasses, Level, Chalk Line, Wood Stick, Grout Bag, Whisk Broom, Steel Wool, Soft Wire Brush, Dust Mask.

## Optional tools which could facilitate installation:

Coronado Horse Hoof Nippers, Grinder with Diamond Cutting Blade, Staple Gun.

## Potential Material's Needed:

### MORTAR

- Premixed type-S mortar or mix your own mortar ([click for mortar mixture formulas](#)).
- Iron oxide mortar color if desired.
- Tile setters Thinset polymer mortar.

### WEATHER RESISTANT BARRIER

- Barrier shall be equal to U.B.C. Standard No. 14-1 for Kraft waterproof building paper. A weather resistant barrier must be used on all exterior and interior mortar applications except for those over masonry, concrete, stucco or drywall.

### METAL LATH

- 2.5 or 3.4 pound. self furring expanded galvanized diamond mesh metal lath or black metal lath (rust inhibitive). See the manufacturers spec sheet for your specific installation condition.
- Over open wood or steel studs, 18 gauge galvanized woven wire mesh with water proof membrane is required.
- Over metal or plywood (see metal lath above)
- Other code-compliant mesh or lath.

### FASTENERS

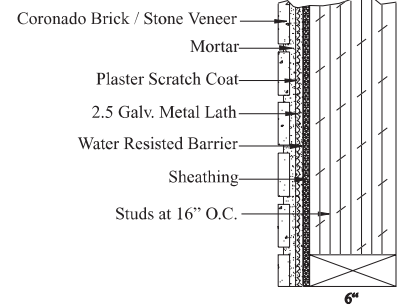
- Galvanized roofing nails, rust resistant staples, concrete nails.
- United States Gypsum Company's 1 1/4" type S12 Pancake Head Super Tite screws used for installation to metal surfaces.

## Index of Various Installation Types

### Wood Frame

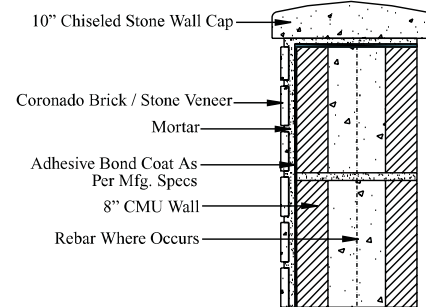
Plywood  
Sheetrock  
Foam board

See \_\_\_ section



### CMU Walls

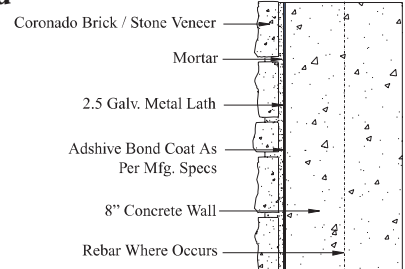
(Concrete Masonry Unit)  
Tilt Up Wall  
Concrete  
Masonry  
Clean Stucco  
See \_\_\_ section



### Painted or Treated

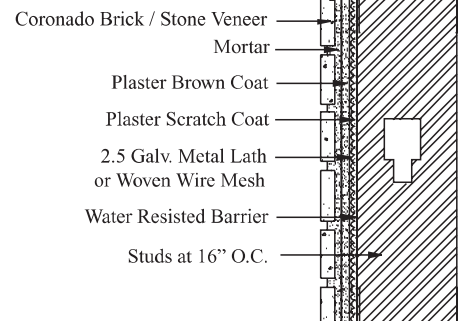
Stucco  
Concrete  
Masonry

See \_\_\_ section



### Steel Frame

See \_\_\_ section



### MASONRY SEALER

- A silane-based breathable type, non-film forming, non-yellowing sealer can be used when needed in areas of cascading water, leaky gutters, balconies without gutters, splashing water, high snow buildup and soot/smoke staining.

**Check with local building authorities for building code requirements. They vary from area to area.**

**Coronado Stone Products are covered by a 50 year limited warranty, when installed according to manufacturers specifications.**

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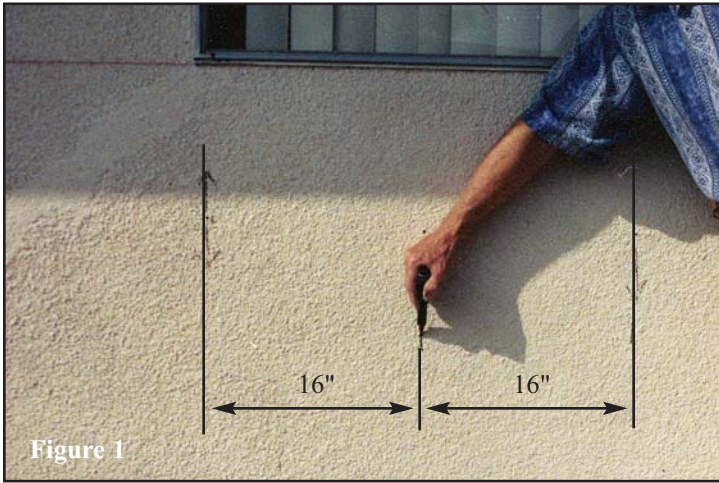
## PREPARATION OVER STUCCO. DETERMINE IF METAL LATH IS REQUIRED

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**What is stucco?** Normally stucco consists of 3 layers. The first layer called a scratch coat is a layer of cement usually 1/4" to 3/8" thick with a rough surface. The second layer called a brown coat is a smooth leveling layer normally 3/8" to 3/4" thick. The third layer called a color coat is very thin no more than 1/8" thick consisting of cement and color. When the stucco's color coat gets painted over with paint or some another bond breaker one of the following methods should be followed:

**Metal Lath** is the **preferred method** when installing stone over painted stucco. Metal lath is not required over a brown coat or unpainted color coat. However, be sure that the color coat is unpainted. Look around the edges of door jams and water faucets, etc., for signs of paint.

**Sand Blasting and/or Water Blasting** is also an option over a painted masonry surface. It is important to restore the walls to its original state. You must also power wash clean any sand residue left from sand blasting.



**Marking the stud location for nailing metal lath (figure 1):**

The first step is to find the studs and mark the wall where you will nail the 2.5 or 3.4 pound expanded metal lath in place. Mark the studs 16" on center.

**Nailing on the lath (figure 2):**

Cover the entire surface with expanded metal lath, overlapping the joints approximately 2". Nails should be at 6" intervals into studs. Use 1 1/2" to 2" hardened steel nails over painted stucco.

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### Helpful Hints

- **Older stucco homes** - Stucco is sometimes very hard and the hardened steel nails have difficulty penetrating the stucco. It is helpful to hit the wall with a hammer, where you plan to drive the nail, to soften the stucco before nailing.
- **Hard concrete** - Footings or poured in place concrete, use 1/2" to 3/4" hardened steel nails. When driving short nails, hold them in place with heavy paper.
- **Nail driving** - When driving hardened steel nails into concrete one or two hard blows to the nail is all that is necessary, that one extra blow after the nail is set will sometimes break it loose.
- **Hot Weather** - At temperatures above 80°F, wet wall to promote better bonding of the stone to the surface.



# GENERAL SURFACE PREPARATION FOR WOOD SHEATHING, DRY WALL OR METAL



The first step (Figure 1) is to cover the area with waterproof paper, find the studs and mark the wall where you will nail or screw the expanded metal lath in place. Cover entire surface with 2.5 or 3.4 pound expanded metal lath, overlapping the joints approximately 2". Use 1 1/2" to 2" fastener. Roofing nails on wood sheathing or plaster board and screws on metal walls. Fastener should not only go into studs every 6" but every 6" horizontally. Use extra nails or screws in other areas as necessary to keep the lath tight.

**KEEP LATH TIGHT** by starting in the center of each sheet nailing or screwing into studs and applying nails or screws between the studs every 6" to keep the lath flat and tight while working your way outward.

## Scratch coat over metal lath for wood, dry wall or metal surfaces

When required, a sand and cement mortar mix (scratch coat) will be applied over the metal lath. The scratch coat should be around 3/8" thick. Make sure that the lath is completely covered and the SURFACE IS FLAT. Scratch the plastered surface while it is still wet using wire lath, hand rake or mason's scratcher. This will ensure that the surface is not too slick or smooth and will allow proper adhesion between the stone and wall. Most codes require scratch coat to dry 48 hours before applying stone.



## Marking the Wall (not required for irregular shaped stones)

After the scratch coat dries (usually 48 hours) and before the stone is applied, chalk lines are snapped across the wall for the purpose of proper horizontal alignment of stone. The chalk lines are necessary in keeping the courses of stone straight and level during installation which provides for a beautiful and professional result.



Determine a point of measurement. This can be the eaves or the lowest window sill. The lines marked on the wall should be level or parallel to the window sill(s) and 8" apart. Example: Choose the window sill, snap a chalk line across the wall using the sill as a point of reference to ensure that the first chalk line is level. Measure down from the sill line on each end of the house making marks every eight inches. Example 8, 16, 24, etc. In the event that you wish to avoid excessive cutting of stone you can enlarge the 8" mark by 1/16th or a maximum of 1/8". Example 8 1/16" 16 1/8" 24 3/16" in other words you have made up 3/16" in 24" Your coverage is now 24-3/16".

- Check for special requirements in freeze-thaw environments.
- A silane based breathable type sealer is needed in areas of cascading water from leaky gutters, balconies without gutters, areas of high snow buildup or soot/smoke.
- Wall caps and post caps should be of sufficient size to cover the majority of the stone. This will keep the water from running behind the stone and freezing. Water expands as it freezes which could loosen stones.

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## INSTALLATION OF DRYSTACKED STONE

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### Laying Out The Stone:

Start by laying out approximately 25 square feet of stone, separated by size, near the work area. This gives you a selection to choose from and makes it easier to find the desired stone when needed. Try to achieve a balanced pattern of shapes, sizes, colors, thicknesses, and textures by selecting and mixing the various stones. Select and mix stones from different boxes throughout the installation. You may notice that some of the stones are darker near the bottom of the box. This is normal because the stone is packaged damp to achieve better curing. It will lighten in color as it dries.

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### Applying Stacked Stone To A Prepared Wall:



Applying First course of stone

**When installing the first course**, start at a bottom corner installing one or two corner stones. Corner pieces have a long and a short return. The returns should be alternated in opposite directions on the wall's corner staying within the 8" chalk lines. On each additional course installed always start with a corner stone. [Click for layout pattern for stacked stones.](#)

When installing the first course of flat stone put the top edge of the stone slightly above the chalk line starting next to a corner stone. Work the stone back and forth, side to side, pushing the mortar from the back of the stone to its outside edges leaving 3/8" to 1/2" mortar behind the stone. Your side to side motions will become shorter and shorter while moving the stone downward slightly below the line until the stone takes a set. The proper [mortar formulation](#) will give you better adhesion and more time to adjust

the stone into position before it completely sets to the wall.

Continue the first course completely across the bottom of your wall alternating with different height stones thus avoiding long horizontal joints. Clean off excess mortar above the stones before it sets. Let the stone set for 1/2 hour to 1 1/2 hours to avoid breaking the bond when applying the next course above. When a stone does break loose, remove it along with the mortar and reinstall.

Install the balance of stacked stone by placing the bottom edge of the mortared stone against the wall, a half inch above and away from the stones below, and rolling the stone toward the wall as you work it back and forth keeping the mortar from coming out the bottom and creating a grout joint. Also if excess mortar builds up on the edges you will need to remove it to have tight fitting joints.



Applying mortar to stone

[Please refer to Window Sill Installation Tips.](#)



Using a measuring stick

**TIP:** Be careful to avoid having vertical joints stacking on top of each other. Separate them a minimum of two inches when possible. Also put thin stones next to thick stones and select colors that show variety. Avoid having horizontal joints by using different height stones across a course.

**Using a 6" stick to check alignment:** A trick for keeping the next upper courses of stone level is to use a stick pre-marked every 2 inches on both sides. It is really helpful to put the stick on a stone and see if you are still within the chalk lines. The stick can be useful for scraping off excess mortar, and can also be kept in a back pocket which is quicker and easier than a tape measure.

Every 30 minutes, before mortar sets, you can clean off excess mortar from the face of stone with a whisk broom or steel wool. In the event that you have stubborn white mortar that has set to long you can use a soft wire brush or clean dampened grout sponge.

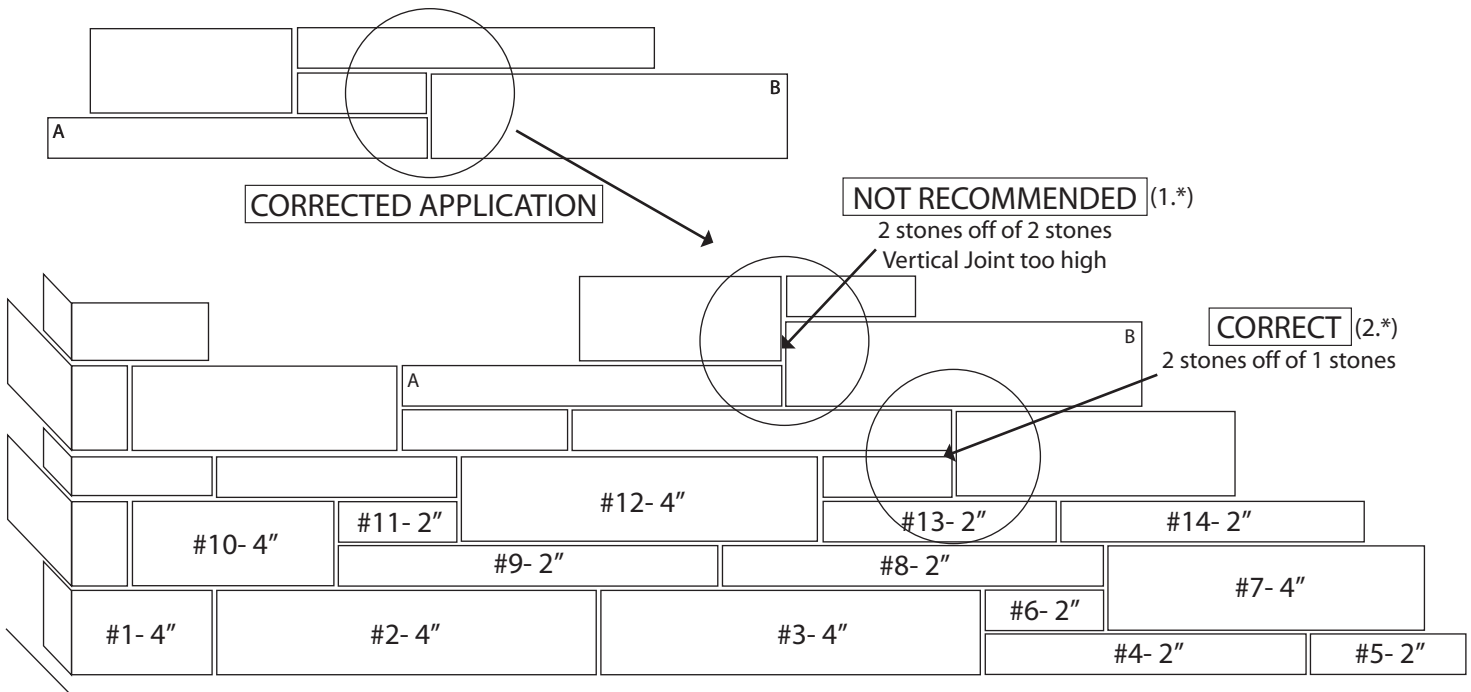
# GETTING STARTED WITH QUICK STACK®

There is an infinite number of possible patterns you can create when installing Quick Stack Stone. There is not a set or recommended pattern to use and it's up to the installer to artistically create a pleasing pattern and a beautiful job. The following guide below is only one example that gives the installer an idea of an Ashlar pattern with Quick Stack Stone. Please note that not all stones are references nor shown.

1. First install one 4" corner. Observe stone bottom left corner (#1-4").
2. Next, horizontally lay two or three 4" stones (#2-4", #3-4"), then two or three 2" stones (#4-2", #5-2").
3. Now you will need to lay any short 2" stone (#6- 2") followed up with two or three 4" stones (starting at #7-4").
4. Continue with the same type pattern avoiding long horizontal and vertical joints.

**Note:** Using a 2" stone (#6- 2") will break up the long horizontal lines. It is important not to have vertical joints too close to each other, especially in real obvious places. Leave at least a 2" offset. Also keep all vertical joints no longer than 4" to 6".

Quick Stack consist of 2" and 4" stones.



This drawing shows one of many preferred setups for Quick Stack stone. By using this Ashlar Pattern it breaks up horizontal lines and keeps vertical lines short.

1.\* On occasion this type of situation will occur. We do not expect anyone to achieve perfection, but please try to keep flaws in areas of low visibility.

2.\* This drawing shows an optimum setup for this type of stone. By using this Ashlar Pattern it breaks up horizontal lines and keeps vertical lines short.



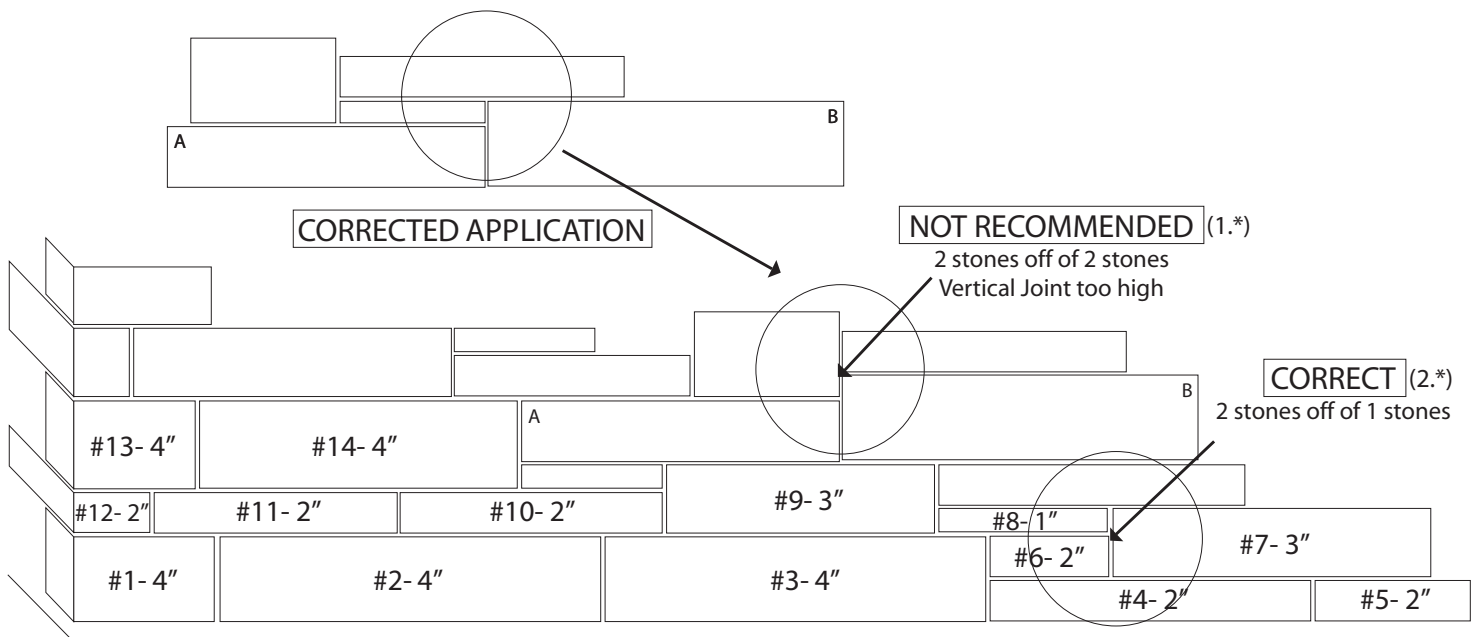
# GETTING STARTED WITH IDAHO DRYSTACK, EASTERN LEDGE AND HONEY LEDGE

There is an infinite number of possible patterns you can create when installing these types of Stone. There is not a set or recommended pattern to use and it's up to the installer to artistically create a pleasing pattern and a beautiful job. The following guide below is only one example that gives the installer an idea of an ashlar pattern with Idaho Drystack, Eastern Ledge and Honey Ledge Stone. Please note that not all stones are references nor shown.

1. First install one 4" corner. Observe stone bottom left corner (#1-4").
2. Next, horizontally lay two or three 4" stones (#2-4", #3-4"), then two or three 2" stones (#4-2", #5-2").
3. Now you will need to lay any short 2" stone (#6- 2") followed up with two or three 3" stones (starting at #7-3").
4. Now lay 1" stone (#8-1") next to stone #7-3" and across to and above stone #3-4" overlapping #3-4" by 2" or more.
5. Continue with the same type pattern avoiding long horizontal and vertical joints.

**Note:** Using a 2" stone (#6- 2") will break up the long horizontal lines. It is important not to have vertical joints too close to each other, especially in real obvious places. Leave at least a 2" offset. Also keep all vertical joints no longer than 4" to 6".

Idaho Drystack, Eastern Ledge and Honey Ledge consist of 1", 2", 3" and 4" stones.



This drawing shows one of many preferred setups for Idaho Drystack stone. By using this Ashlar Pattern it breaks up horizontal lines and keeps vertical lines short.

1.\* On occasion this type of situation will occur. We do not expect anyone to achieve perfection, but please try to keep flaws in areas of low visibility.

2.\* This drawing shows an optimum setup for this type of stone. By using this Ashlar Pattern it breaks up horizontal lines and keeps vertical lines short.



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## MORTAR MIXTURE FORMULAS

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### Preparing the Mortar:

Mortar should be mixed to a firm but workable (not too wet, not too dry) consistency similar to what is used with brick or a little wetter. Test consistency by bouncing and shaking the trowel to remove excess mortar then turn the trowel vertically (edge up). The mortar should stick to the trowel.

#### Mortar Mix for Installing Stacked Stone (Do not use for grouting):

\*Freeze/Thaw mixture - Option 3

Option 1: 2 parts Portland cement 1 parts Thinset mortar 5 parts masonry sand Water to proper consistency	-or-	Option 2: 2 parts premi x mortar type-S (100 lbs) 1 part Thinset (50 lbs) Water to proper consistency	-or-	Option 3*: 2 parts Portland cement 1 part lime 7 parts masonry sand CureCrete 936
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-Thinset is a product used in setting tile and can be purchased from your dealer or a tile store. Thinset offers better bonding and allow more time to adjust the stone. Too much thinset or bonder can cause slippage of stone after placement.

#### Mortar Mix for Installing Grouted Stone:

2 parts Portland cement 1 part lime 7 parts masonry sand Water to proper consistency	-or-	Premixed mortar (type S) Add water to proper consistency
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\* When only water drips out of grout bag or you have a hard time squeezing the mortar out you may need to add additional cement to the mixture to help it flow. Also, make sure the grout bag is not plugged with lumps.

### Special Notes:

**Orco Blended** is a premixed mortar with the proper additives that has been successfully used for dry stacked stones. California and other states have other premixed mortars with bonding agents made especially for stacked stone. However, these other premixed mortars should be tested for bonding strength.

**For the best finished appearance**, the Jointless/Dry-Stacked mortar color should blend with the stone's base color to help conceal the joint lines. Ask your dealer for iron oxide mortar colors.

**Freeze/Thaw:** In extreme freeze/thaw environments it is necessary to keep the water from getting behind the stone. Water behind the installed stone can freeze, expand and damage the stone. When installing stacked stones in a freeze/thaw environment the mortar should cover the entire back of the stone with some mortar squeezing out and around the edges of the stone. It is helpful to have a finer grade of sand in the mortar mixture to aid in keeping the stones closer together. Mortar mix option #3 (above) is the recommended mortar mixture for this type of installation. You may need to expand your chalk lines when using a heavier grade sand.

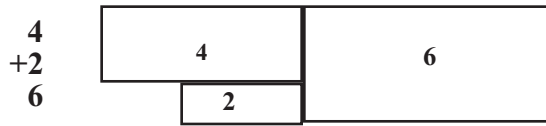
The mortar mixture formulas listed in Coronado Stone's Installation Guide are only some of the commonly used materials and proportions. Mortar formulas can vary by geographic regions, by contractors within a region or by personal variation on a standard. Coronado Stone recommends that when in doubt of the bonding strength or workability of a particular mortar mixture, test by installing a few stones and do a tear off after 3 days to see how strong the bond is. Some bonding agents will re-emulsify if they get wet within 30 days of drying. The ability of mortar to provide a good bond is the responsibility of the mason.

If temperatures exceed 90 degrees, be sure to wet the wall and back of stones before installation. This helps prevent the wall from extracting needed moisture from the mortar, which may affect the curing process.

# DRYSTACKED VS. GROUTED

## Coronado Belgian Castle in a Drystack Ashlar Pattern:

Coronado's Belgian Castle is made to be Drystack without grout joints. These stones are manufactured with even numbered heights including 1", 2", 4", 6" etc.



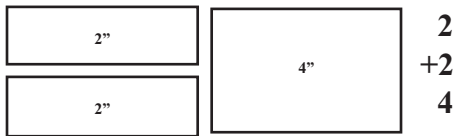
Drystack (no Grout Joint)

Coronado manufactures stones to be installed either as drystack or grouted. If drystack stones are installed with grout the mason will have to adjust the width of the grout in order to maintain alignment. The mason's goal is to minimize long vertical or horizontal grout joints. A general rule of thumb is that vertical grout joints should not be higher than two small stones or one large stone. Horizontal grout joints should not exceed 5 feet.

Coronado's stones that are manufactured to be "dry stacked" can be grouted. The consequence of grouting stones that were meant to be Drystack are larger grout joints because the joints have not been allowed for in the stone sizing (Belgian Castle and others).

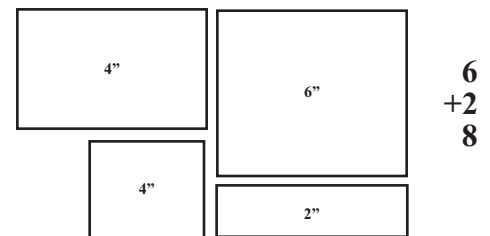
The mason's goal is to minimize long vertical or horizontal grout joints. A general rule of thumb is that vertical grout joints should not be higher than two small stones or one large stone. Horizontal grout joints should not exceed 5 feet.

2 stones off of 1 stone



3/8 Grout Joint

2 stones off of 2 stones



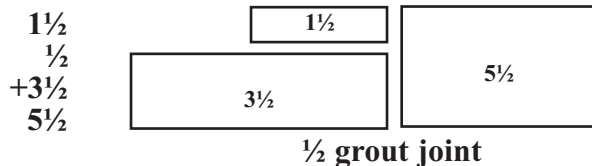
The above picture shows the problem of aligning the top and bottom joints when grouting stones that were manufactured to be Drystack. The figure on the left is an example of how to correct this problem by using the 2 X 2" on 4" pattern ratio.

Products such as Country Castle, that are recommended to be grouted, are manufactured in modular sizes to compensate a 1/2" grout joint.

## Example of Coronado Country Castle in an Grouted Ashlar Pattern:

Actual heights (sizes) of Country Castle are:  
1 1/2", 3 1/2", 5 1/2" 7 1/2"

Coronado recommends applying the stones using a 2 stones off of one stone ratio rule for the "Ashlar pattern." shown below.



Country Castle with 1/2" Grout Joint

## GROUTING TECHNIQUES



1. Fill grout bag using a trowel.



2. Holding the top of the bag, twist approximately one complete revolution or more to take up slack.



3. Fill the grout joints. Make a fist and push into the bag to force mortar into the joints.



4. Using the back of a wire brush, stick or something similar, press the mortar into the joints as the mortar is beginning to set and before it gets too hard. When this process is done too soon the mortar can smear on the face of the stone or give the grout a slick look.



5. Use a wire brush to clear away chunks of excess mortar in the joint and on the surface of the stone. Do not allow mortar to dry on surface.



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## HELPFUL HINTS FOR INSTALLING STONE VENEER

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### Trim to Fit:

Coronado Stone veneer is easily shaped or cut as desired. This enables you to fit stones easily into place insuring a natural looking wall with *Tight Mortar Joints*. Cutting or shaping can be done by using any of the following tools: Makita 4 1/2" hand held disc grinder with diamond blade, or Coronado hoof nippers.



### Applying Mortar to Stone:

The thickness of mortar in the center of the 4" stone is from 3/8" to 3/4" in height tapering down to 0" on the troweled edge on one side. Smaller stones require slightly less mortar than the larger stones.

**NOTE:** When applying mortar to a (smaller) 2" high stone, you will use almost as much mortar as you would on a 4" high stone. 4" stones require just slightly more mortar than a 2" stone (not twice as much as you would expect).

**Remember:** *Too much mortar can cause slipping!*

**NOTE:** When installing Random shaped stones (as in River Rock or Split Fieldstone) apply approximately 3/8" to 1/2" of mortar from the top down to the entire back of stone. Another option is to apply enough mortar to the middle of the stone so that when pressed in to position you will have approximately 3/8" of mortar on back side after set. Slipping and sliding of stones occurs when too much mortar is used or too much Thinset used in the mix.

### Applying the Stone to the Wall:

Depending on the type of stone, you will begin at either the top or bottom of the wall. Grouted stones start at the top and stacked stones start at the bottom.

Push the stone firmly into place and "wiggle" the stone slightly to set the bond. **YOU SHOULD PUSH FIRMLY ENOUGH SO THAT THE MORTAR IS SQUEEZED OUT AROUND THE EDGES OF THE STONE.** If sliding or slipping occurs, the mortar may be too thin, you may be using too little mortar, or you may be using too much mortar. Also, if you are using thinset, you could be using too much.

### When Installing Irregular Shaped Stones:

Start installing the larger stones first. Then a small irregular stone should be installed after the opening has been surrounded by larger stones and a large stone will no longer fit. Try not to use more than one stone to fill a small area.

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## BOND COAT INFORMATION

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### **Tilt Up Wall Bondability:**

Check for the possibility of bond a breaker to determine the bondability of the wall. Will the stone stick to it? Spray water on the wall and check for areas of non-absorption or beading. Areas of non-absorption need to be sand blasted or water blasted and powerwashed clean. Test wall by installing a few stones with a modified mortar and do a tear off after 3 days to see how strong the bond is.

### **Masonry Wall:**

A block wall with a flat lightly textured surface does not require a scratch coat. Split block and heavy textured brick require a scratch coat.

### **Clean Unpainted Stucco Wall:**

Does not require a scratch coat.

### **Brown Coat:**

Used when installing irregular shaped stones or grouted stacked stones.

Option #1: Over Clean Stucco Wall with Irregular Shaped Stones, no treatment required use a standard mortar bond coat and no Lath.

Option #2: No lath required  
Use modified mortar scratch coat.

### **Adhesive Bond Coat:**

A coat of specially modified mortar applied as a thin scratch coat to increase the bondability of surfaces that have questionable bondability. When applying a bond coat, it needs to be worked into the wall as a very thin coat, troweled in different directions into the surface. The abrasive qualities of an adhesive bond coat scratches the underlying surface to cause a better bond. Stone can be installed immediately or hours later because it dries slower.

### **Walls Requiring an Adhesive Bond Coat:**

Tilt up walls and poured in place concrete walls.

### **Is Modified Mortar Required Over Brown Coat or Scratch Coat?**

**Irregular Shaped Stone** normally installed from the top down and does not require a modified mortar. However, modified mortar will provide a better bond.

**Stacked Stone** is always install from the bottom up and requires a modified mortar.

### **Questionable Bonding Surface:**

Stones installed over a questionable masonry, tilt up and block walls require a modified mortar and some times they need a bond coat.

### **Stone Over A Unpainted Stucco Color Coat:**

The surface requires a modified mortar.

### **Modified Mortar:**

Refers to a mortar with additives that increase its bondability.

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## GLOSSARY

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**SPALLING:** The chipping or flaking of concrete, bricks, or other masonry where improper drainage or venting and freeze/thaw cycling exists. Flaking of the outer face of masonry, often caused by expanding moisture in freezing conditions.

**BOND COAT:** Is used over areas where a questionable bonding surface could exist. The bond coat can be straight thinset applied as a thin 1/4" scratch coat worked into wall in two directions both vertically and horizontally. Add a complementary iron oxide color to the bond coat so any unavoidable gaps between joints are less apparent.

**JUMPER STONES/SPOTTERS:** Larger stones normally of different pattern or shape strategically placed at various locations in the installation. The effect of properly placed Jumpers or spotters can enhance the beauty of the job and is pleasing to the taste of many.

**METAL LATH:** Also called expanded metal. Stone veneer installations normally use 3.4 galvanized diamond mesh. Metal lath is required over painted stucco, masonry and wood sheathing. Always check local codes for acceptability.

**PRECAST STONE:** Precast stone is a highly refined architectural precast concrete building stone manufactured to simulate natural stone.

**RANDOM ASHLAR PATTERN:** Ashlar set with stones of varying length and height so that neither vertical nor horizontal joints are continuous.

**DRY STACKED or STACKED STONE:** Specially sized stones that are installed with tightly fitted vertical and horizontal joints of zero to 1/4".

**CASCADING WATER:** Water running off a deck, balconies or leaky gutters over the stone can cause water marking. Stone can be protected in areas of cascading water by applying special sealers.

**SEALER:** Normally used in areas of cascading water, high snow buildup or smoky locations. A silane-based, breathable, non-film forming and non-yellowing sealer is preferred.

**FREEZE/THAW:** Form of physical weathering, common in mountains and glacial environments, caused by the expansion of water as it freezes. Water expands in volume by 9 percent; as it turns to ice. This expansion exerts great pressure on the stone. After many cycles of freeze/thaw, stone fragments may come off. When water gets behind installed stone and freezes it can loosen stones.

### TROWELS USED FOR INSTALLING STONE:



Brick Trowel



Plastering Trowel



Margin Trowel

**THINSET:** Any cement-based or organic adhesive applied in a thin layer (less than 1/2 inch) primarily for setting tile. However, in setting stone veneer, the bond of the stone to the wall is significantly enhanced by the addition of Thinset to the premixed type-S mortar. Also, the addition of Thinset to the mortar mix allows the mason ample time to move or adjust the stone into place.

**CONCRETE NAILS:** Hardened steel nails that will not bend and are hammered in with 1 or 2 blows.

**MAKITA:** Used by stone veneer installers, is a handheld grinder with a 4" diamond blade. This tool easily shapes or cuts stone and provides for an easier, neater and quicker install.

**MODIFIED MORTAR:** Mortar normally used for installing stone veneer that has been modified by the addition of a polymer to enhance the bonding strength. [Click for mortar mixture page](#)

**WEATHER RESISTANT BARRIER:** Required on all exterior and interior applications except for those over unpainted stucco, masonry, concrete and drywall. Barrier shall be equal to U.B.C. Standard No. 14-1 for Kraft waterproof building paper.



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## HELPFUL TIPS FOR INSTALLING CORONADO CHISELED SILLS

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1. Do not install sills until all the stone is installed and set. The top row of stone should consist of 1 1/2" and 2" thick stones. These thicker stones will help support the sill until the mortar sets.
2. Measure down 3" from where the top of sill will be and make a mark.
3. From the 3" mark, measure down and make additional marks at 8", 16" 24", 32", etc., until you reach the bottom of wall.
4. Snap level chalk lines across wall, at each mark, to keep stones and courses straight and level.
5. Stone should be stacked tight and grout joints should not exceed 1/8".
6. Keep stone clean. Do not leave mortar on stone more than 15 minutes without cleaning. Use soft wire brush, steel wool or whisk broom for cleaning off excess mortar.
7. Install first row of stone starting with 3" and 4" stones working from the bottom up. Start with a corner stone and work across. The ground is rarely level so work from the lowest line and across.
8. For the sill to bond properly the correct mixture of mortar, Thinset and water must be used.
9. Before installing the first stone, test to see if you have the correct mixture by installing a 2" by 18" stone, by itself (unsupported) on the wall. With the stone buttered, place it against wall and start moving it from side to side with firm pressure to squeeze out excess mortar. These movements will decrease as the stone starts to seat. After the stone sets let go and if it sticks and does not slide your mixture and techniques are correct. Remove the stone and residue mortar.

Important Note: Always check local building codes. Some codes require the use of metal angles (wall hangers) when installing stone sills.

