

# One Coat Stucco Reference Guide



Presented By:

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## FOREWORD

One Coat Stucco has been described as “the best kept secret in the Construction Industry”.

For over 20 years One Coat Stucco has been successfully used throughout the United States and offers the widest variety of systems needed for today’s designs and buildings. Now the secret is out, One Coat Stucco provides One Great Solution for exterior walls and all types of construction.

As the industry’s development and coordination organization, the National One Coat Stucco Association (NOCSA) saw the need to create a Reference Guide on One Coat Stucco. This Reference Guide has useful and needed general information on One Coat Stucco for the Construction Industry and in particular for those involved in the design and application of stucco assemblies. It is a generic guide to help in developing construction documents and application of One Coat Stucco.

This guide contains general information and is not intended for any specific project. NOCSA makes no expressed or implied warranty or guarantee of the techniques, construction methods or materials identified in this guide.

A One Coat Stucco system is a composite wall system consisting of a fiber-reinforced Portland cement basecoat and finish coat. A One Coat Stucco assembly is a proprietary system that must be specified and installed per the manufacturer’s approved specifications and details.

There are many reasons for the use of One Coat Stucco, including:

- Reduced labor costs
- Design flexibility
- Durability
- Versatility
- Low maintenance
- Speed of application
- Variety of finish styles and color
- Overall cost savings

## INTRODUCTION

This reference guide is published as an information resource of the National One Coat Stucco Association (NOCSA). The objective of this undertaking is to provide those within the building industry a guide with respect to One Coat Stucco.

The format of this manual provides graphic and technical information that will serve to benefit the architect, general contractor, professional engineer and construction specifier who needs to establish a better understanding of the composition and application of One Coat Stucco and its related components.

The information contained herein is the most currently recognized trade data available. As publishers, we wish to gratefully acknowledge reproductive rights of those documents which appear here either in part, or in whole.

There are many individuals and manufacturers that have contributed materials and information for this Reference Guide and their assistance is greatly appreciated. We would particularly like to acknowledge the NORTHWEST WALL AND CEILING BUREAU for their help and for permitting the use of material from the **Portland Cement Plaster Stucco Resource Guide**, published by NWCB.

### National One Coat Stucco Association

The National One Coat Stucco Association (NOCSA) is a non-profit trade association dedicated to promoting the use and advantages of One Coat Stucco through education to the design and construction industries.

Another NOCSA publication, in addition to this Reference Guide, is a Generic Specification. NOCSA sponsors an On-Line Course approved by the American Institute of Architects Continuing Education for Architects, “**One Coat Stucco: The Most Efficient Stucco System Available**” that provides one (1) AIA-CES Learning Unit and HSW Credit. This course is administered by Ron Blank and Associates, a registered provider for the American Institute of Architects Continuing Education Service.

**[www.ronblank.com/cgi-bin/info.pl?action=course&id=34](http://www.ronblank.com/cgi-bin/info.pl?action=course&id=34)**.

The Association has a web site at **[www.nocsa.org](http://www.nocsa.org)** that provides additional information on One Coat Stucco, photos of projects, a list of current association members and other items of interest.

## DISCLAIMER

All material contained in this reference guide is for general information only. The National One Coat Stucco Association expressly disclaims responsibility or liability for the information, drawings and other material contained in this reference guide, and for any errors or mistakes, all of which are unintentional. Further, there are no warranties, express or implied, issued or made by the National One Coat Stucco Association, Texas Lathing and Plastering Contractors Association, Texas Bureau for Lathing and Plastering, Northwest Wall and Ceilings Bureau, including their respective members, officers, directors and staffs; or by any contributor to this reference guide, in connection with any information, drawings, specifications and/or comments contained in this Guide, or regarding the use of any specific materials or methods.

All information, including drawings and specifications, should not be used in place of, or substituted for, any applicable manufacturer's specifications or professional building design services.

The specifications, design and construction of all structures described in this reference guide must comply with local building codes and standards, applicable compliance reports and the individual manufacturer's requirements, which may vary from the general information shown. Only the manufacturer and/or design professional can furnish specific details, specifications, drawings and construction practices to be followed for specific actual construction and use of any product, and for the compliance with applicable local building codes and construction practices.

The successful installation and performance of materials used are dependent upon the proper design and construction of the adjacent materials and systems of the structure. Therefore, only a licensed, qualified design professional can create and issue specifications, drawings, and details for actual or prospective construction or renovation using the products and methods described. The drawings and information are not intended as an exclusive method for achieving desired performance. Alternative configurations not shown or discussed may achieve equal or better performance.

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# ***THE HISTORY OF STUCCO***

## THE HISTORY OF STUCCO



The earliest examples of plaster covered walls, resembling what we consider to be stucco, date back to ancient times. The ancient Egyptians used a mix of gypsum and lime mortars on the pyramids more than 5,000 years ago. The Greeks used plasters to smooth coarse stone walls. They developed the technique of burning lime, adding water to it and then burying it. The result was a putty-like plaster that, with the addition of more water, formed a very tough, durable wall coating. The Romans used a form of stucco and many fine examples of the hard plaster that they made are still in existence today. The Romans brought stucco construction methods with them as they expanded their sphere of influence throughout Europe. “Wattle and daub,” “pise de terre” and “briquette entre poteaux” are all terms used in European countries to describe the various types of stucco used in cities and farm villages alike.

Stucco became popular in the United States in the early 1800’s. Proprietary blends of stucco began to appear after 1779 when Bry Higgins obtained a patent for a stucco to use in exterior plastering. The invention of Portland cement in 1824 led to the development of stucco formulations including this new, stronger, more durable component. In the later part of the 1800’s, the popularity of stucco increased dramatically as Portland cement became more available.

Stucco’s popularity in the United States continued into the 20th century as demand for new buildings increased. Stucco was used instead of more costly materials such as brick and cut stone. Stucco was also used to retrofit buildings that needed a facelift. Other benefits of stucco applications include water resistance, fire-resistive properties and performance in a wide range of climates. Because the finish coat can be altered, the design can be varied using different textures and pigments. Its versatility is unparalleled because it can be applied to any flat or curved surface, either inside or outside of any structure and calls for low maintenance of the application.





# ***ONE COAT STUCCO SYSTEM***

## ONE COAT STUCCO SYSTEM

The One Coat Stucco System is a highly cost-effective and resilient alternative to the Three Coat Stucco System. Introduced in the mid-1980's, the One Coat Stucco System Base Coat consists of a blend of Portland Cement, sand, fibers and proprietary chemicals which results in a very effective system.

The individual products are pre-blended at the manufacturer's facility, which simplifies the mixing procedure since it is done on the jobsite. This offers superior consistency of the material and greater control over the mixing proportions of the product. The only additional materials that need to be added to the base are sand and water. Some manufacturers offer a premix or sanded version that only requires the addition of water. The sand must conform to ASTM C144 or ASTM C897-96. Each manufacturer has specific instructions for mixing and applying the base coat that must be followed to insure proper quality control.

The base coat is applied in a single application (combining the scratch and brown coat) to a minimum thickness of 3/8-inch (9.5 mm), unless otherwise noted. The maximum thickness, including the finish coat, is nominal 1/2-inch (12.7 mm). Thickness around penetrations, such as doors and windows is a nominal 3/8-inch (9.5 mm), backed by framing and blocking. The base coat is applied over lath and over flashing and weather resistive systems. For all types of finishes, consult each individual manufacturer for recommendations.

Adhering to the proper "moist" curing time as specified by the manufacturer is critical.

This system can be hand troweled or machine sprayed to almost any common weather-protected wall substrate, including foam plastic sheathing, insulation board, exterior grade gypsum sheathing, glass mat faced sheathing, fiberboard sheathing, asphalt impregnated sheathing, plywood or OSB exterior sheathing. It can also be used over masonry and brick without lath reinforcements. This simple, single process application could offer up to a 50% reduction in the materials, labor and scaffolding costs involved in each project which results in a quicker completion time of the stucco exterior.

Each manufacturer should have code approval through the International Code Council - Evaluation Service ([www.icc-es.org](http://www.icc-es.org)).

One Coat Stucco base coats are fire-resistive with zero flame spread and zero smoke developed. One Coat Stucco base coats are well suited for residential, multi-family, institutional and commercial buildings where cost and speed of construction are very important.

## Typical Properties of One Coat Stucco Basecoat

- A. General Physical Properties
  - Tensile Strength - approximately 325 psi (28 days)
  - Flexural Strength - approximately 1070 psi (28 days)
  - Impact Resistance - approximately 2500 psi
  
- B. Weight per Square Foot (Metal Lath and Cement Plaster Only):
  - 3/8" thick - approximately 4.41 psf
  - 1/2" thick - approximately 5.89 psf
  
- C. Fire Resistance - Noncombustible
  - Flame Spread - less than 25
  - Class I Exterior Cladding - 0
  - Smoke – 0
  
- D. The deflection design criteria for the substrate that a stucco assembly is attached to is required to be a minimum of L/360.

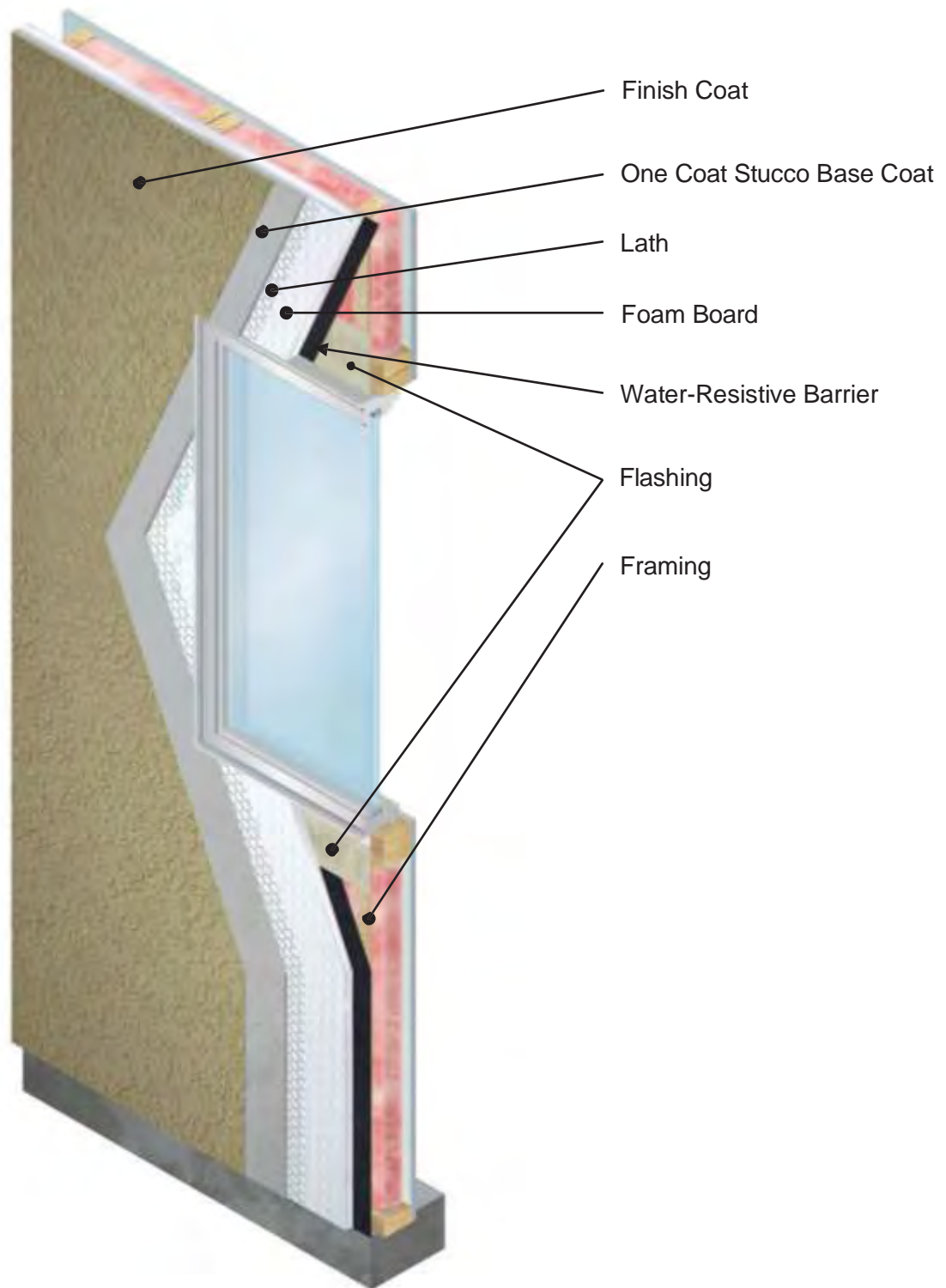
Note: Physical properties may vary due to regional materials and jobsite conditions.

## One Coat Stucco Benefits

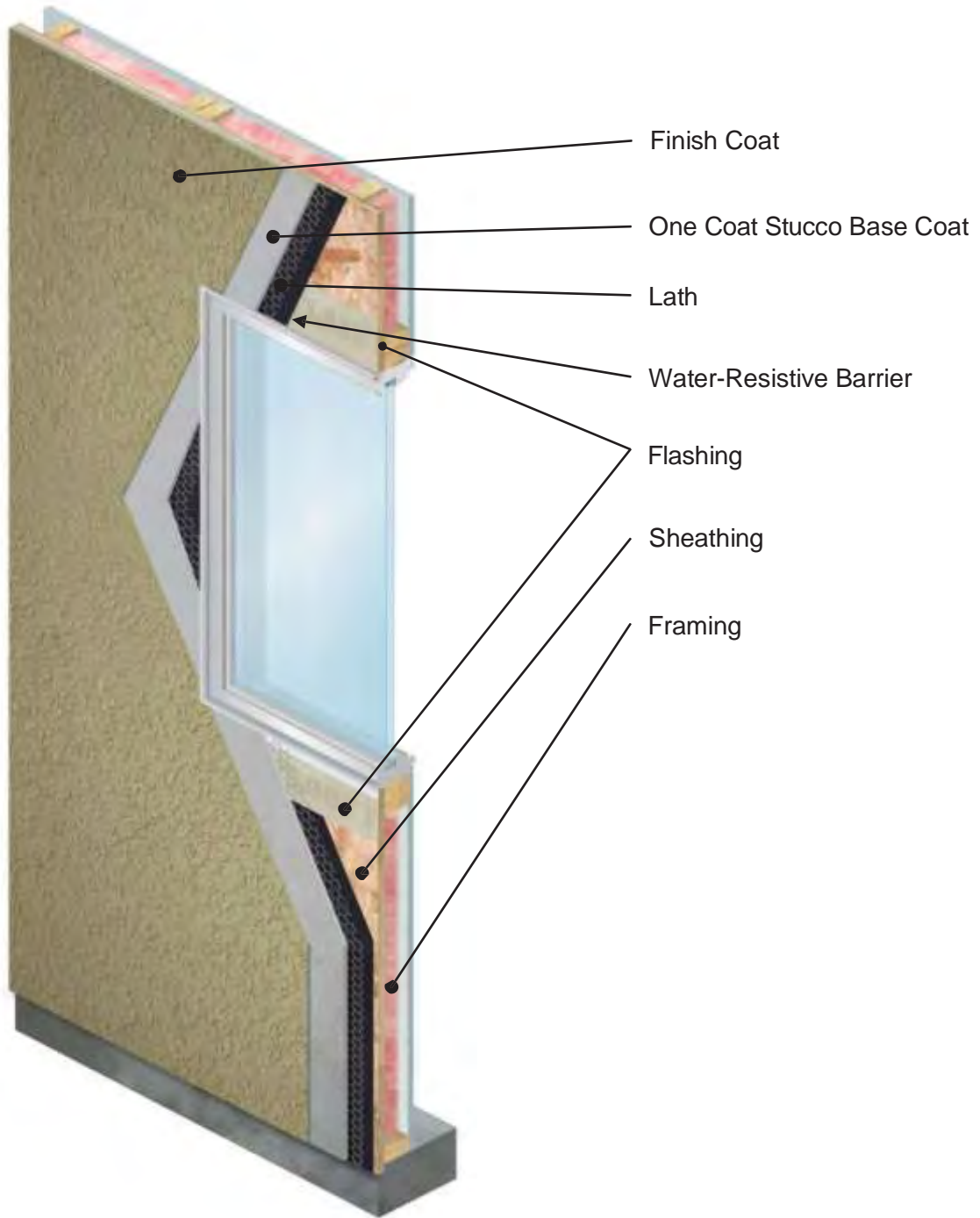
- A. Fiber reinforced which resists cracking and provides high flexural strength, durability and versatility.
  
- B. Versatility of design and aesthetic appeal.
  
- C. Performance in a variety of climates; endurance of wet/dry and freeze/thaw cycles.
  
- D. Fire-resistive properties.
  
- E. High abuse and impact resistance.
  
- F. Provides a weather resistant barrier system and is a great impact resistance.
  
- G. The integration of foam insulation substrates, provides significant thermal and sound benefits.
  
- H. Saves money because the quicker applications take approximately half the time of other types of applications resulting in quicker job completions, reduced labor costs, and low maintenance.

- I. It is appealing due to the fact that it can be used with a variety of different finish styles and colors.
  
- J. Note: One Coat Stucco is dependent on the underlying substrate tolerances due to the limitations on rodding the basecoat and the inability to straighten uneven substrates by the nature of its 3/8" - 1/2" thickness.

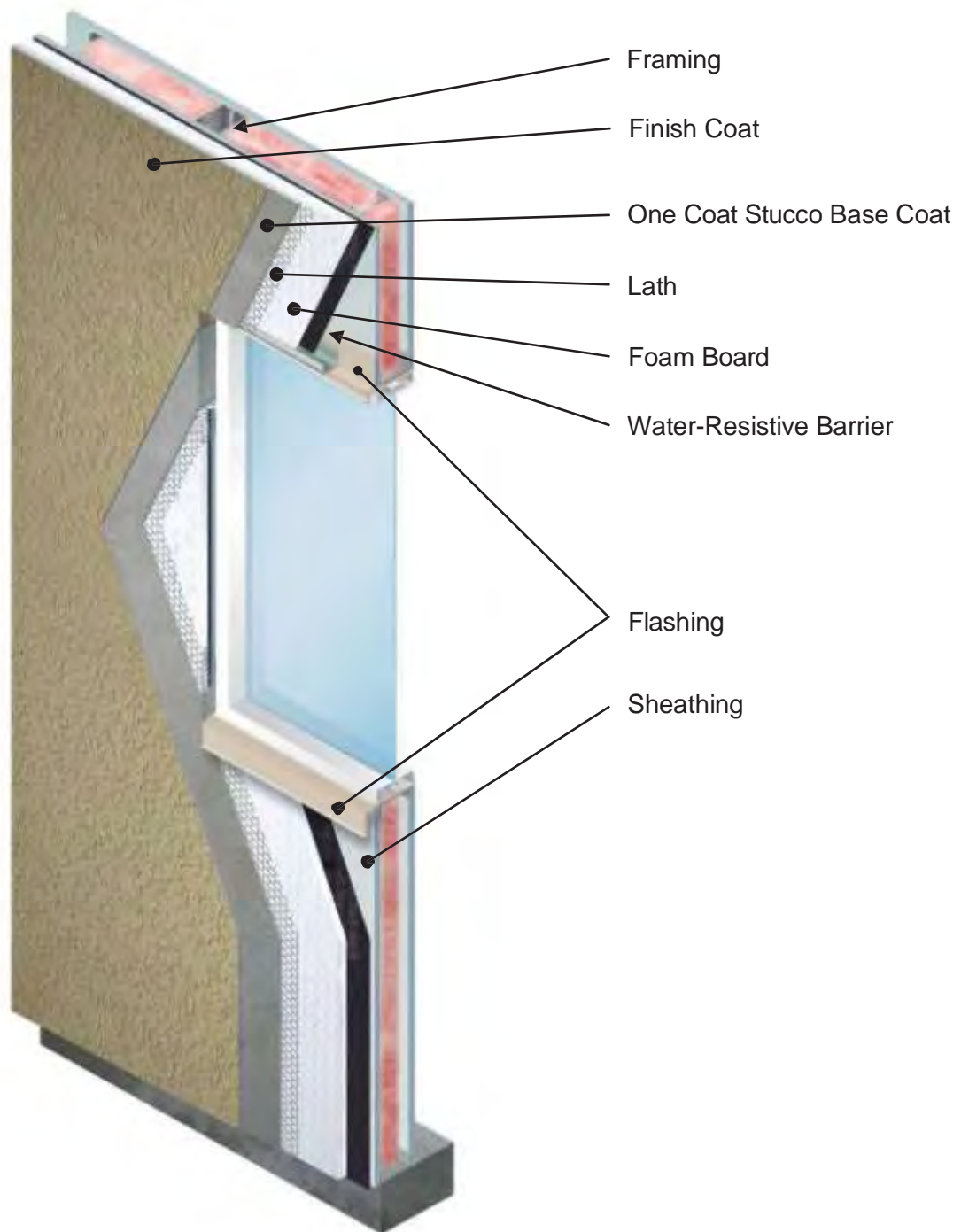
Note: One Coat Stucco is dependent on the underlying substrate tolerances due to the limitations on rodding the basecoat and the inability to straighten uneven substrates by the nature of its 3/8" - 1/2" thickness.



Typical One Coat Stucco Application with Foam Board Insulation Over Open Framing



Typical One Coat Stucco Application Wood Based Over Sheathing



Typical One Coat Stucco Application With Foam Board Over Metal Framing





# ***PRE-INSPECTION OF JOBSITE***

## PRE-INSPECTION OF THE JOBSITE

Prior to proceeding with the One Coat Stucco System, the plaster contractor should review the following items:

- A. Make sure the framing member is properly spaced. This will help in attaching the lath to the framing.
- B. If plywood or Oriented Strand Board (OSB) sheathing is installed, inspect the joint between the wood structural sheathing to make sure the joint is gapped a minimum of 1/8-inch. This is recommended by the American Plywood Association installation instructions to allow for expansion and contraction of the material. If the joint is not installed, then the movement of the wood structural panel can cause stress on the plaster and possibly crack the finished surface. Local building codes may have requirements pertaining to fastener type and spacing.
- C. ICC-ES AC-11, Acceptance Criteria for Cementitious Exterior Wall Coatings, requires a minimum of two layers of weather resistive barrier over wood-based sheathing or approved equivalent. Direct application of the exterior coating to masonry and concrete surfaces is permitted when done in accordance with ASTM C926 under the IBC, IRC section R703.6 or applicable portions of UBC Section 2508. The weather resistive barrier must comply with UBC Standard 14-1. The weather resistive barrier shall comply with IBC Section 1404.2 and 2510.6, IRC Section R703.2 or UBC Section 1402.1 and 2506.4 as applicable. An alternative to a minimum of two layers of weather resistive barrier, one layer of weather resistive barrier with a 60-minute water resistive rating, plus one layer of tongue and groove EPS or XEPS foam is acceptable.
- D. If the wood structural panel is installed over part of the wall surface, then make sure the ICC-ES Evaluation Report for the product to be used has provisions for installing over the wood structural panel. The reason is that questions can be raised as to whether or not the fastener is penetrating the wood stud a minimum of 3/4 inch or as the evaluation report requires.
- E. Drywall is installed – nailed off. It is recommended the drywall be installed before the one coat stucco is applied. If drywall is installed after the stucco is applied – it should be screwed on with screws instead of nails to control vibration.
- F. Roofing materials are installed or stored on the roof.



# ***INSTALLATION PROCEDURES***

## MATERIALS

For each approved manufacturer's One Coat Stucco System, the following materials are needed:

- A. Weather Resistive Barrier. The code requires a weather resistive barrier to be installed. Two layers of weather resistive barrier are required over a wood-based sheathing except under foam sheathing. Some manufacturers offer a fluid applied weather resistive barrier with a slip sheets.
- B. Reinforcement. The minimum reinforcement is 1 x 20 gauge woven wire. Make sure the wire is recognized by an ICC-ES report. Use of reinforcing without approval can be subject to removal when the inspector requests to see the approval. Alternative lath is permitted to be used with the exterior wall coating system when the alternative lath has been qualified. Lath shall comply with the applicable specifications listed in Table 2507.2 of the IBC such as metal lath (ASTM C847), welded wire lath (ASTM C933), woven wire plaster base (ASTM C1032). Current requirement for plaster base reinforcement is governed by AC-191 (Metal Plaster Bases - Lath)
- C. Fastener. Fastener may be any type specified in the evaluation report. Make sure the size and length is noted.
- D. Window Flashing. Some manufacturers of One Coat Stucco have window flashing details approved or detailed in their evaluation report. Make sure the details are followed, see ASTM 2012E for further information. Windows can be one of the main potential sources of water intrusion and proper flashing around the window opening will reduce the potential of water intrusion damage.
- E. Stucco Concentrate comes in a bag which you add sand and water.
- F. Pre-blended Stucco. Another option is using One Coat Stucco with the dry plaster sand added at the manufacturer's facility water at the job site.
- G. Washed Plaster Sand. Washed plaster sand is required to meet ASTM C144 or ASTM C897.
- H. Water. Clean and potable water without foreign matter.
- I. Accessories. Casing and corner beads, weep screeds, control and expansion joints, etc. as recognized in the ICC-ES report.

## **BASE COAT REINFORCEMENT**

In framed construction the One Coat Stucco base coat is applied to stucco netting or lath reinforcement. The allowable type of reinforcement is identified in each manufacturer's ICC-ES evaluation report. Reinforcement materials can be made of metal, plastic and glass fiber.

When the reinforcement is installed over solid surfaces, it must be furred a minimum of 1/8 inch. When the reinforcement is installed over unbacked EPS foam insulation, there is no requirement for furring.

The reinforcement must be attached by an approved fastener and in the pattern specified in the manufacturer's ICC-ES evaluation report. Proper fastening penetration is an important aspect of the One Coat Stucco system performance.

A wide variety of reinforcement and fastening materials are utilized by manufacturers' One Coat Stucco systems. Consult the ICC-ES evaluation report to identify approved materials. These may include wire fabric, metal, plastic or glass fiber lath, staples, nails and screws. Note that minimum specific weights, gauges and sizes are specified for materials.

## ONE COAT STUCCO MIXING AND APPLICATION

- A. One Coat Stucco Basecoat: Mix to manufacturers recommendation. Do not over mix or retemper.
- B. Basecoat shall be a nominal minimum of 3/8” thickness”. This cementious coating is applied by hand troweling or machine spraying. The lath must be imbedded in the nominal minimum coating thickness and cannot be exposed. Level the stucco surface with the proper plastering tools. The basecoat should cover all surfaces uniformly. Proper curing may be required to insure a total cement hydration.
- C. The basecoat is not to be left unfinished.
- D. Follow manufacturer’s evaluation reports and specifications with regard to product handling, environmental concerns and other application instructions not listed here.
- E. Some cracking and efflorescence are inherent in portland cement stucco. These are not product defects.

## AVAILABLE FINISHES

Stucco is so versatile that the color and texture of the finish can be easily altered. A variety of pigments can be added to achieve the desired finished look.

White and colored cementitious top coats are components that meet rigid color standards. A complex texture adds shadows and light to the wall and can interfere with some of the variation. Several standards must be followed in order for these coats to be effective: The brown coat must be well-cured. Each batch must be mixed with the same amount of water, mixed for the same amount of time, used within the same timeframe and applied in a consistent manner. The temperature, sunlight and humidity must remain constant for the entire length of the job and it must be all cured in the same manner.

Acrylic top coats are a mixture of acrylic polymer, non-staining sand with specific gradation, ultraviolet blocks, defoamers and other components. Typically this coating is used straight out of the bucket. Note that this type of finish is not elastomeric. To ensure the best finish possible, make sure that the entire job is performed according to the manufacturer's instruction and that it is cured appropriately. Most acrylic manufacturers claim that their acrylic finish will bridge static hairline cracks.

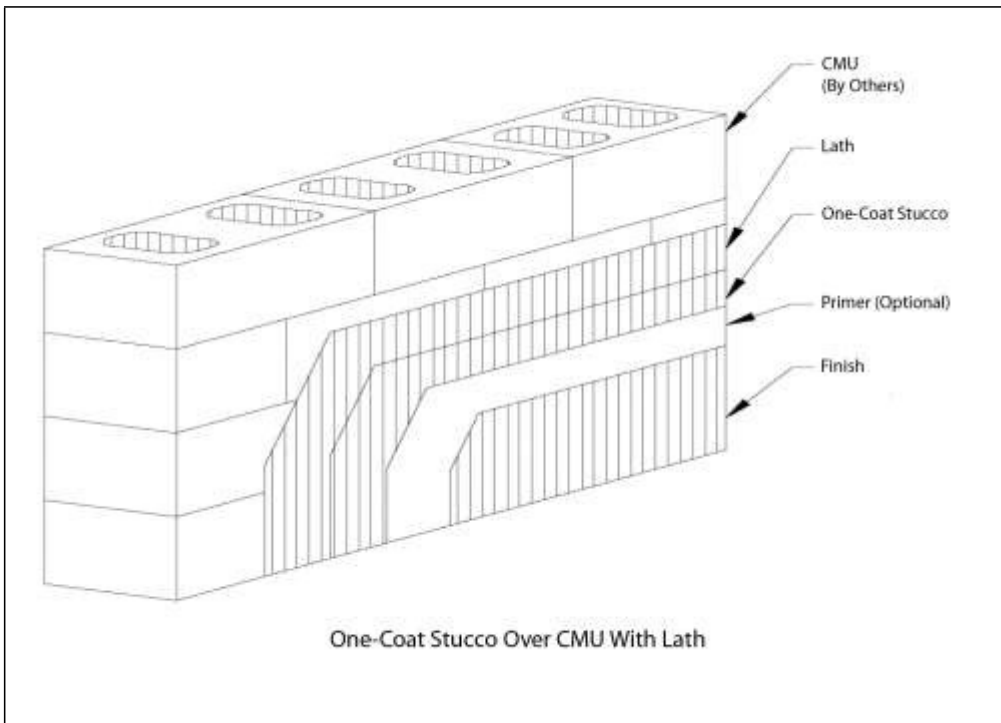
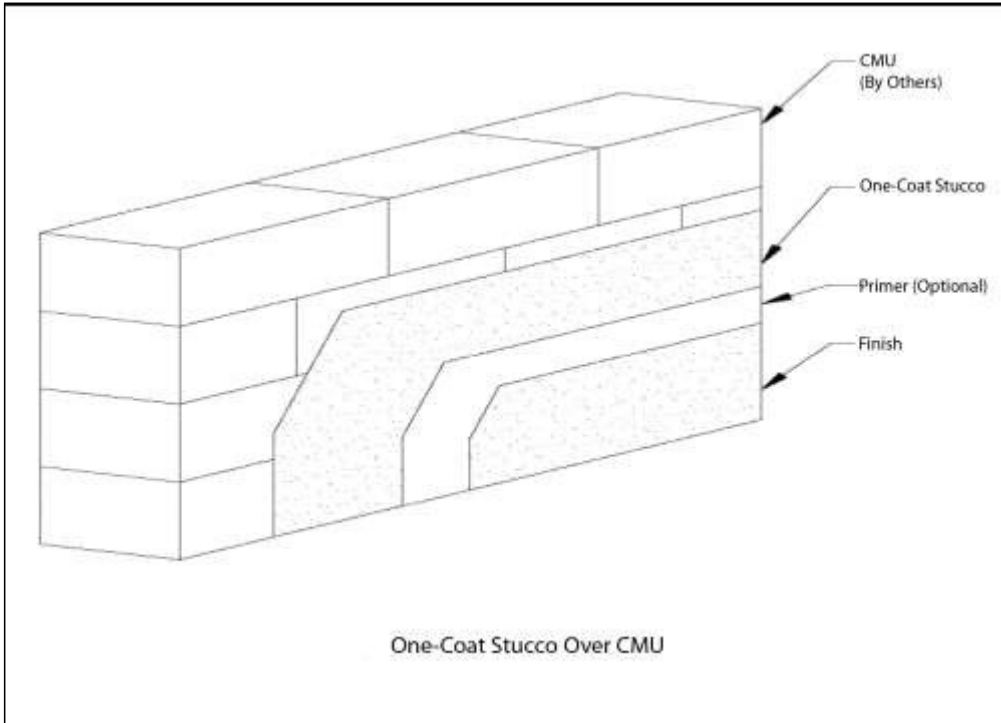
Elastomeric paint can be used although its main use is to cover cracks because the paint contains elasticity features. A primer is typically recommended to be used to bond to the stucco or the directions on the paint should be followed. Many paints need to have two coats applied to achieve the expected results and this could result in a muting of the texture of the initial coat of stucco. Since different paints have different benefits and qualities, be careful in the selection. Primers and paints from different manufacturers should never be mixed.

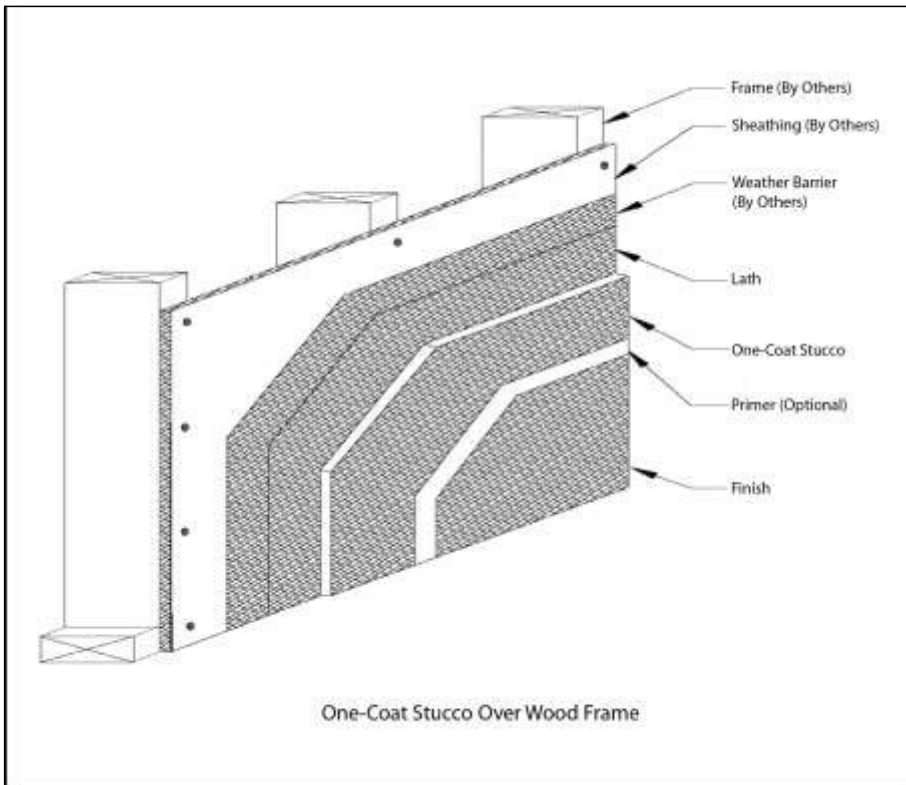
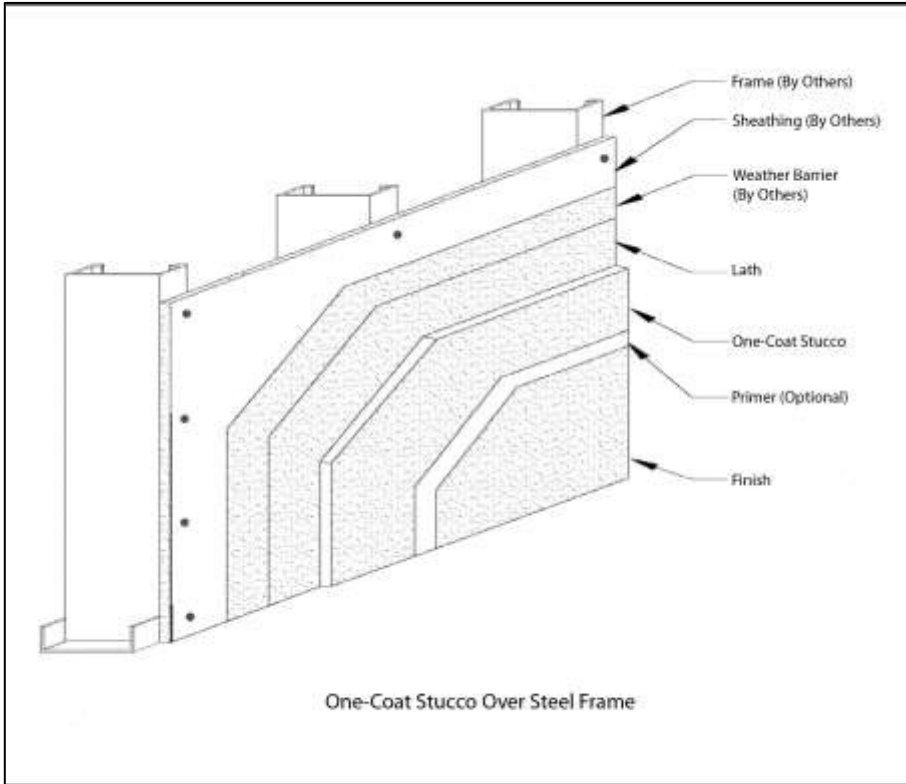
Paint can be applied once the stucco has been applied. It is recommended that the best quality paint be used and that the manufacturer's directions be followed accordingly.



# INSTALLATION

One Coat Stucco can be installed over a wood frame, a steel frame, over Concrete Masonry Units without lath and over Concrete Masonry Units with lath. Lath per ICC-ES Report.





Lath per ICC-ES Report.

## WEATHER RESISTIVE BARRIER

### Sheet Type

A weather resistive barrier is required by code. The weather resistive barrier must be recognized by an ICC-ES Evaluation report to comply with the

### WEATHER RESISTIVE BARRIER

#### Paper Type:

Weather resistive barrier is required by code. The weather resistive barrier must be recognized by an ICC-ES Evaluation report to comply with the requirements of the code. Weather resistive barrier is classified as either a breather or vapor barrier. Check with local jurisdiction for what type of barrier is required. Over solid substrate, two layers of Grade D weather resistive barrier are required. Weather resistive barrier is installed horizontally with minimum horizontal lap of 2 inches and vertical lap of 6 inches. The installation of the weather resistive barrier is by the shingle method. It is designed to shed water. See manufacturer's ICC-ES ESR Report for weather resistive barrier location.

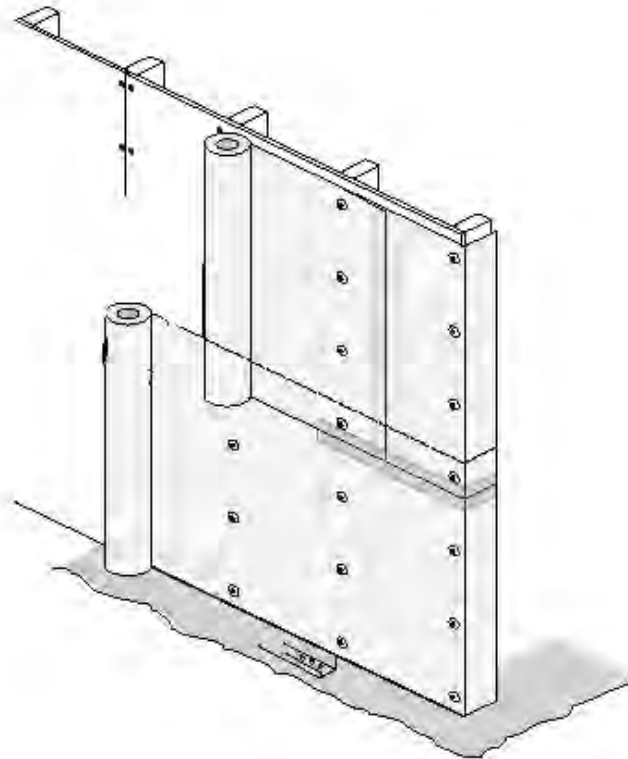
#### Fluid Applied:

Fluid applied weather resistive barriers are also available and offer waterproofing characteristics. These can be spray, roller or trowel applied. See manufacturer's specifications and ICC-ES Evaluation Reports for installation instructions.

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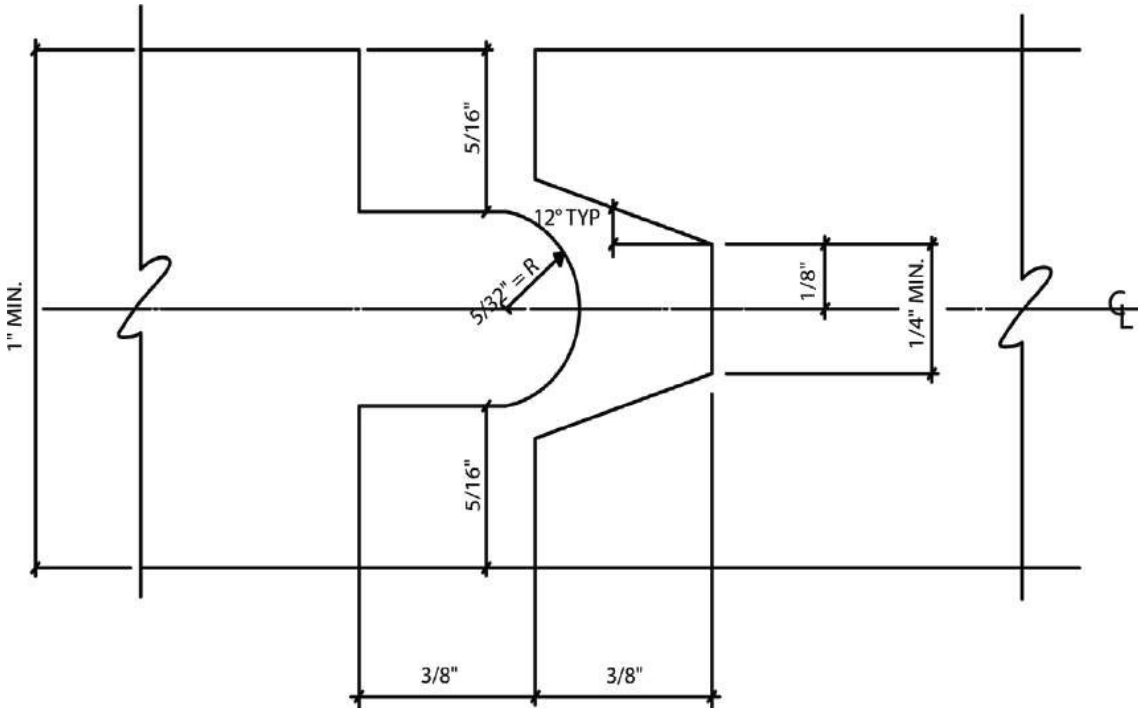
## EXPANDED POLYSTYRENE FOAM (EPS) INSTALLATION

The EPS foam recognized for the One Coat Stucco application is a board product with a tongue on one edge and a groove on the opposite edge. The detail of tongue and groove is detailed in Acceptance Criteria AC-11 for Cementitious Exterior Wall Coating.

The detail suggests the board thickness to be 1 inch. Other sizes and thickness may be available. Over solid substrates, thinner foam plastic may be used when installed over two layers of weather resistive barrier. For example, if a 15/32" thick wood structural sheathing is required by design, a 1/2" thick EPS foam may be used so that when transitioned to areas without any sheathing, the wall will be approximately the same thickness.

The board can be supplied 2' wide by 8' long or 4' wide by 8' long.

When installing the EPS foam, the tongue is always installed in the upward position. This is to make sure any water that may be traveling down the EPS foam surface does not penetrate into the joint.

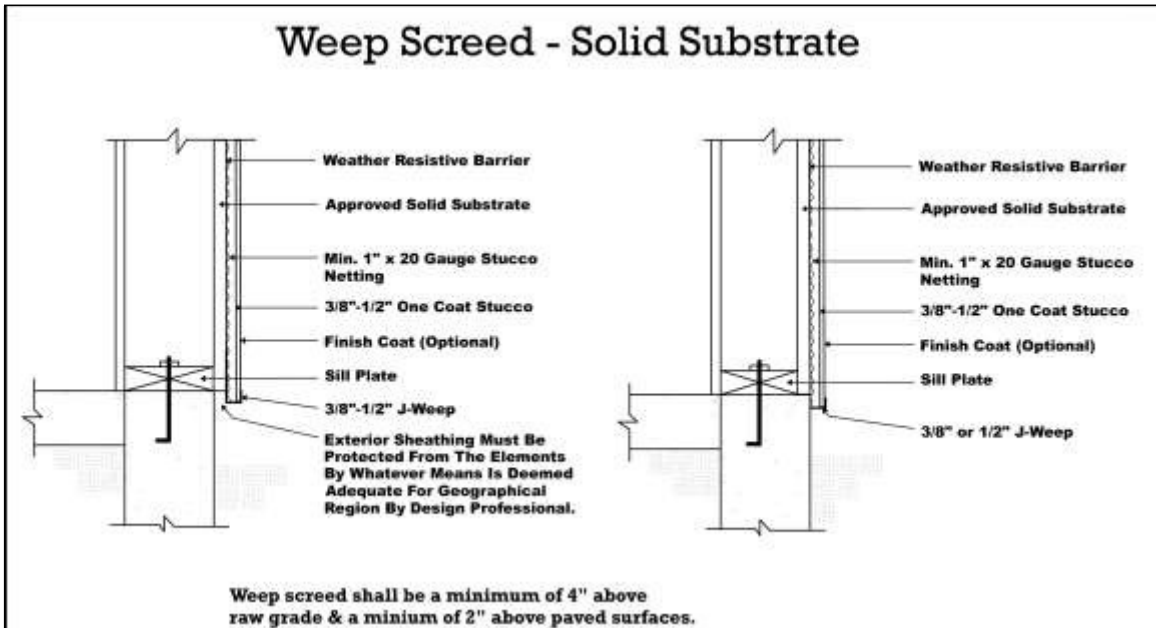
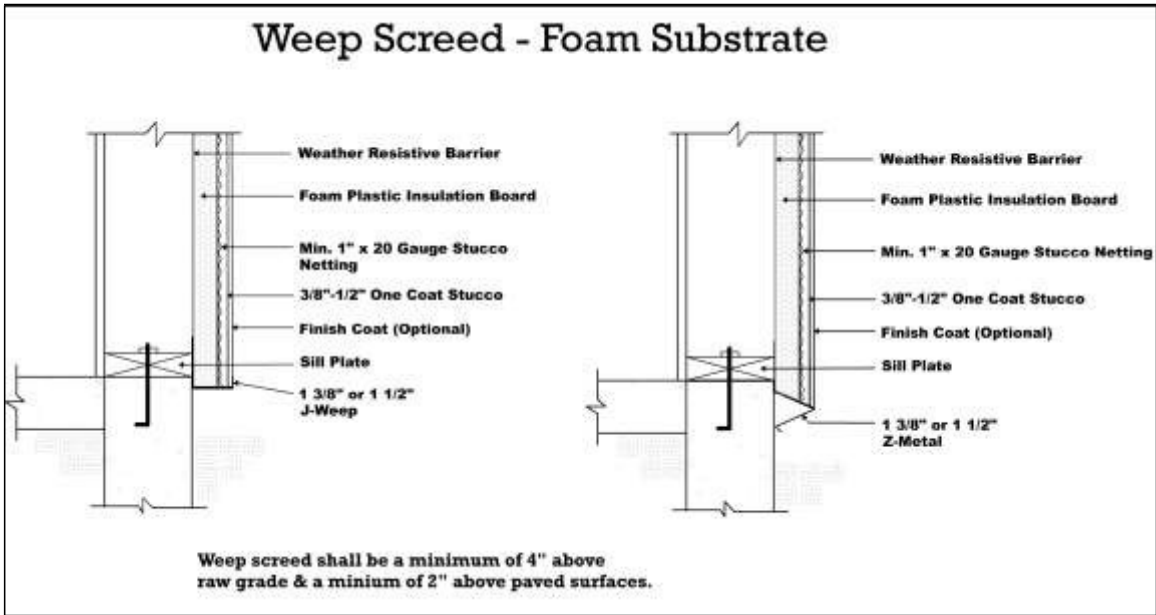


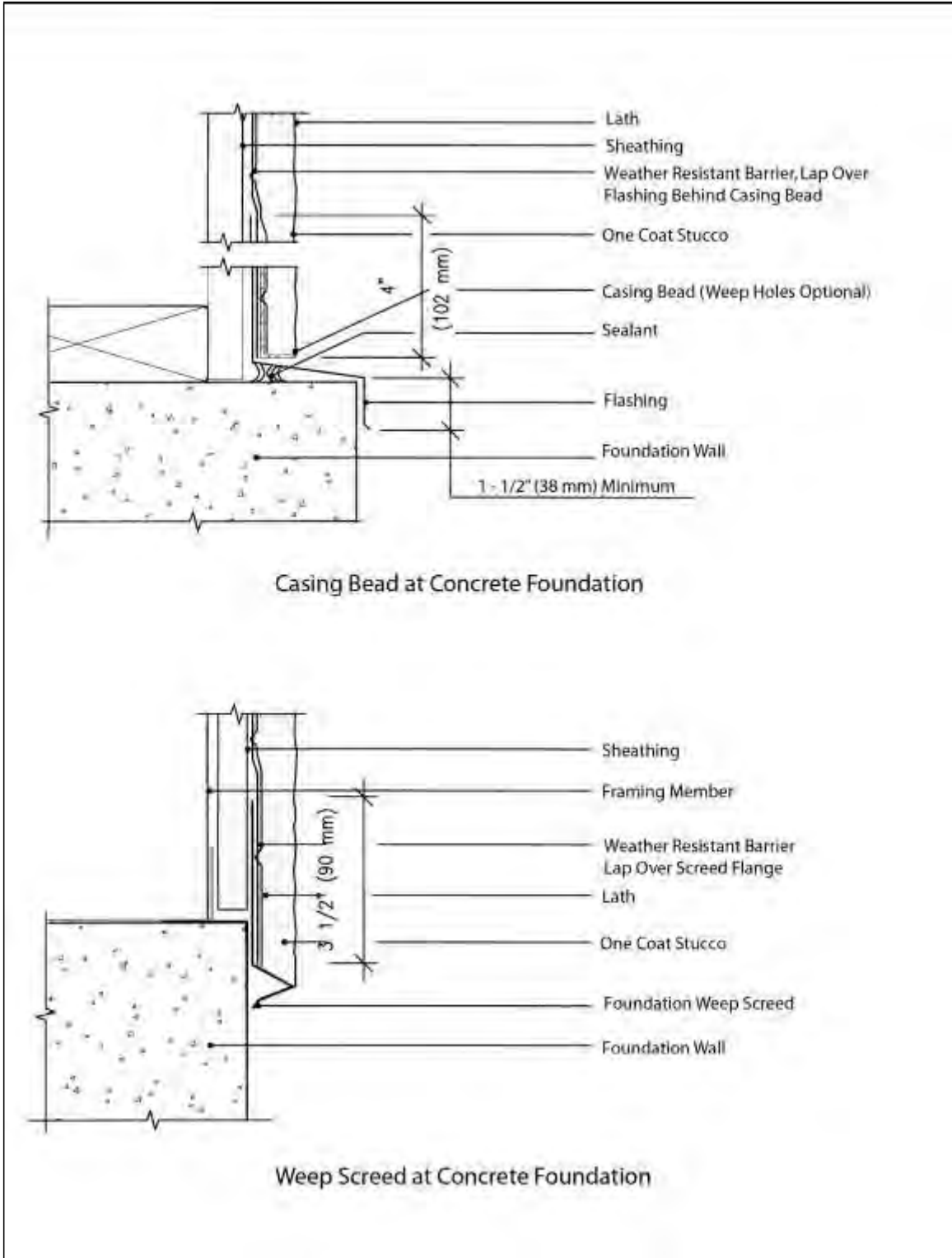
TONGUE AND GROOVE

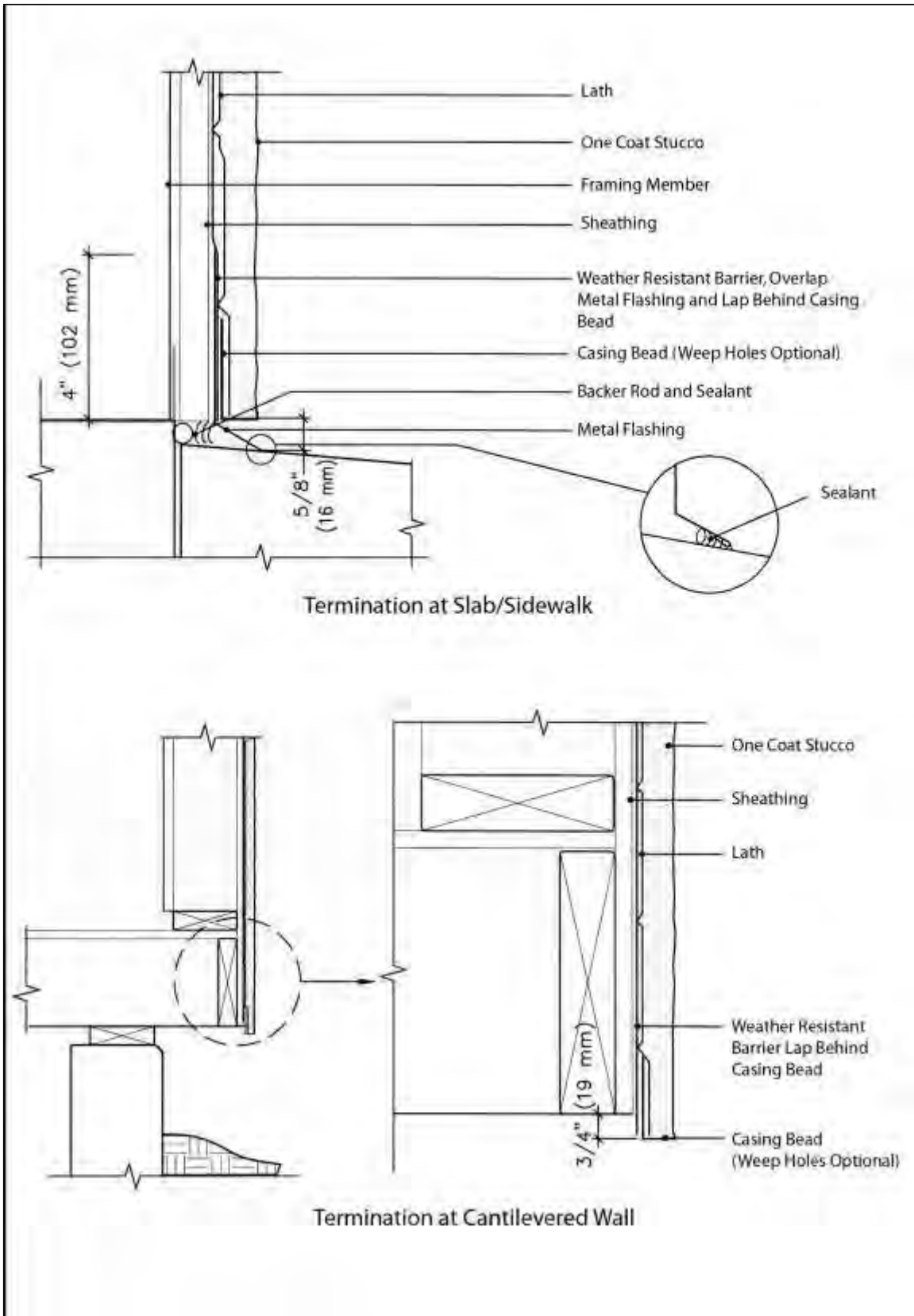
# WEEP SCREED

Weep screeds are installed at the bottom of the wall a minimum of 1 inch below the bottom plate line. The weep screed material must comply with the applicable code. Check local jurisdictions for exceptions at ramps, etc.

The purpose of the weep screed is to allow any water which may intrude behind the plaster coat to drain out of the system. Typical details of the weep screed installation are shown below.

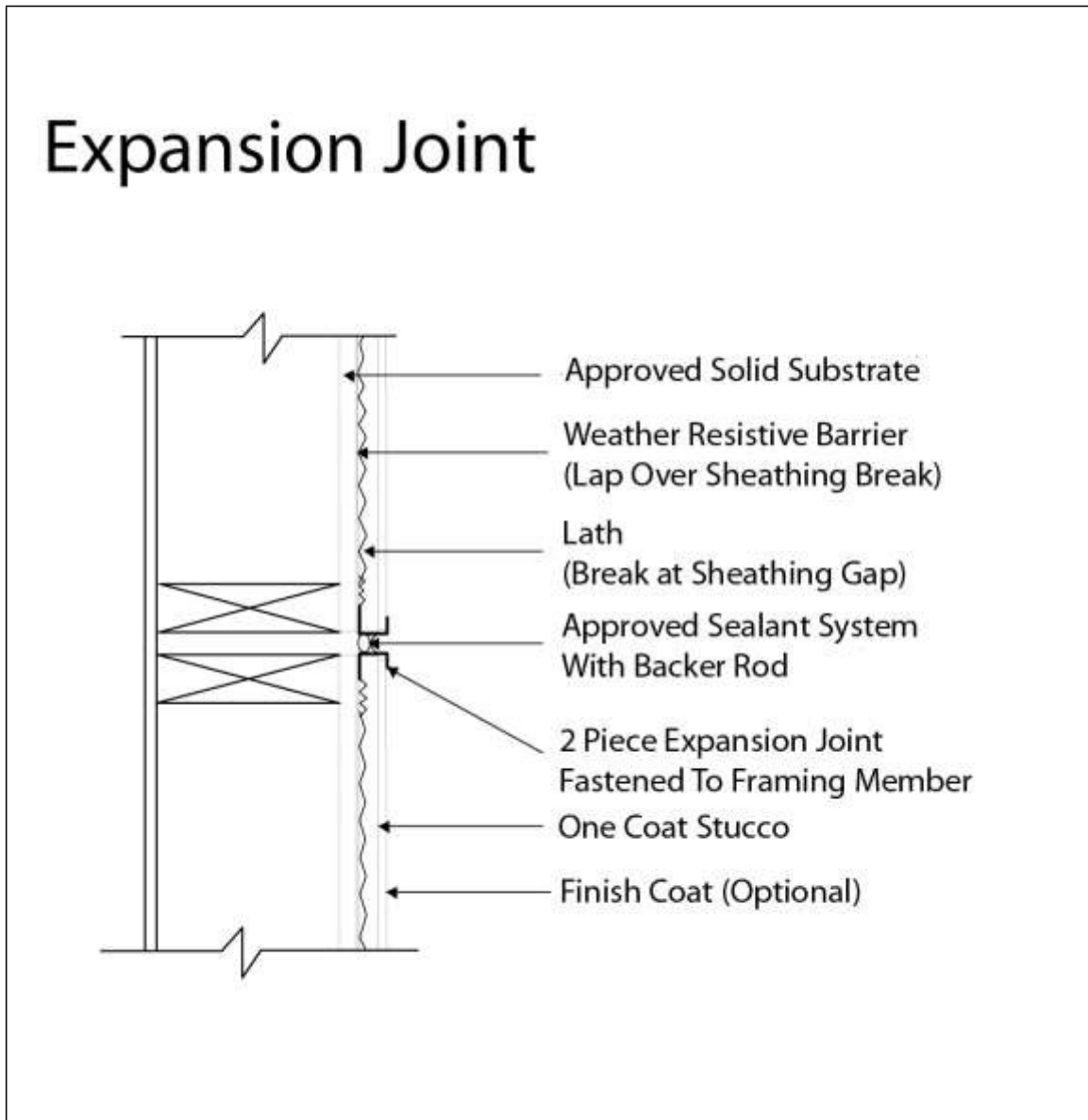






## EXPANSION JOINTS

Building structure movement due to temperature change, wind, seismic activity, live loads and other sources is accommodated by building expansion joints as detailed by the design professional. The One Coat Stucco system must “honor” the building expansion joints with a suitably designed expansion joint in the same location as the building expansion joints. Lath reinforcement must end at either side of the expansion joint, while the weather resistive barrier must be continuous and able to accommodate the anticipated building structure movement.

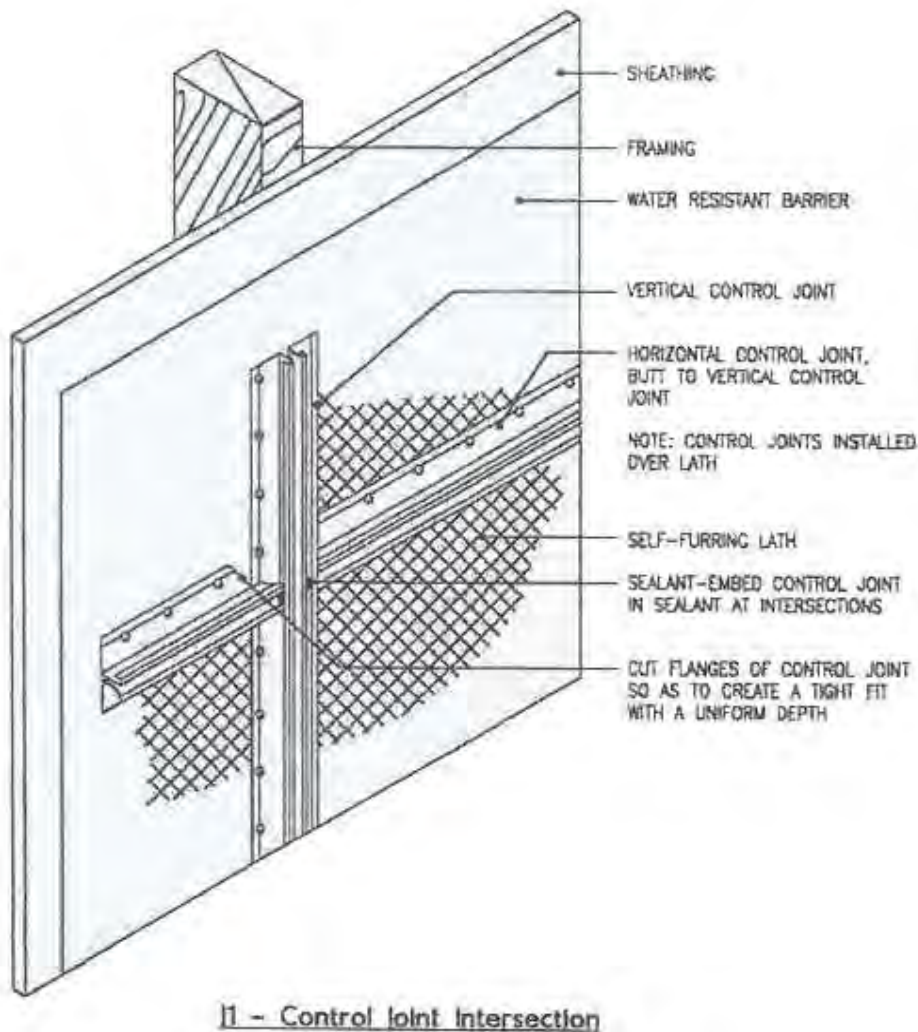




## CONTROL JOINTS

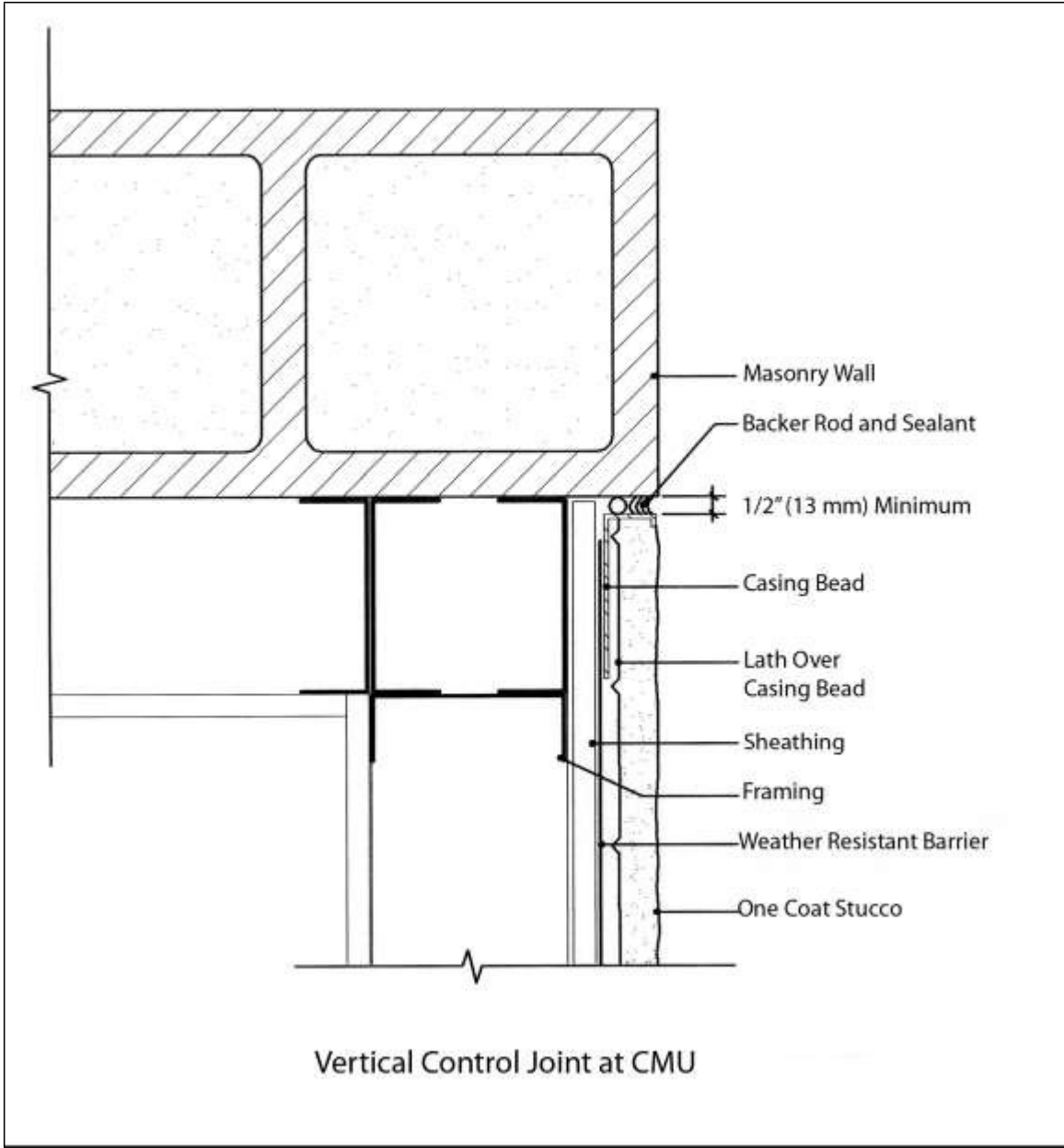
Normally the building type, the design of the exterior walls and the stucco system will dictate the location and the number of control joints required. Control joints have limited degrees of movement and do not guarantee that cracks will not occur but will reduce the number of cracks and may delineate where the cracks occur.

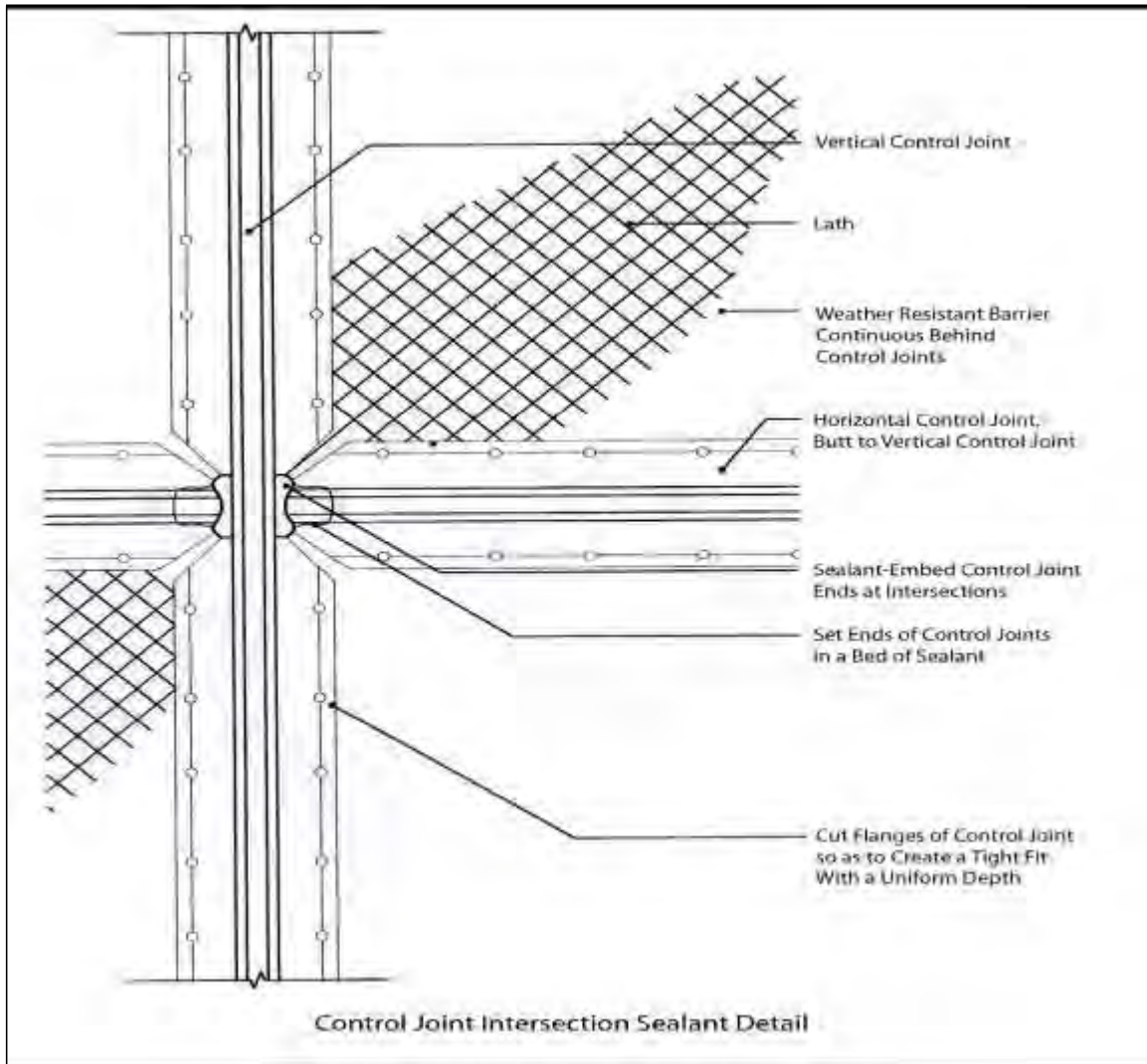
Control joints also serve as a screed for controlling plaster thickness. In this case it will provide a more quality surface. Joints shall be installed as specified by the architect, designer or builder.



Note: Control Joints installed over Lath.

Note: The type of joint shown on this detail would have limited movement.



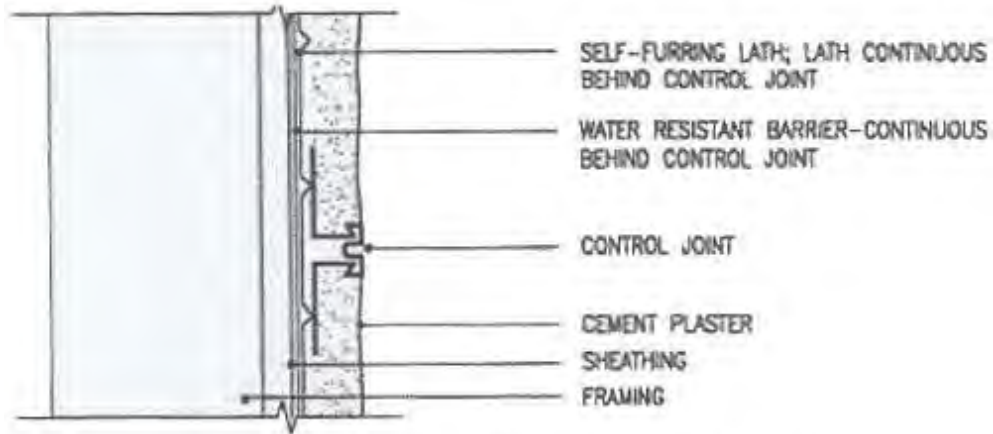


Note: Control Joint installed over Lath.

Note: The type of Joint shown on this detail would have limited movement.

## AESTHETIC JOINTS

Aesthetic joints or reveals are breaks or grooves in the One Coat Stucco base coat for appearance purposes only as specified by the design professional. Aesthetic joints may be detailed as control joints or expansion joints. In either case, the continuity of the weather resistive barrier must be maintained.



13 - Horizontal or Vertical Control Joint

## FIELD MIX CONTROL

After the wall is prepared, the next step is to prepare the plaster for application to the prepared wall. Since the design mix for each manufacturer may be different, follow the manufacturer's recommendations or the ICC-ES Evaluation Report for the approved mix ratio as well as the amount of water required.



Since the mix is based on the weight of sand per bag of stucco concentrate, the plasterer must make sure the proper amount of sand is being mixed with each bag. A box can be made to calibrate the sand weight. A 5 gallon bucket or a box can also be used to calibrate the amount of sand.

To meet the requirement of the evaluation report, the sand must meet ASTM C144 and/or ASTM C897.

Mix the cement and sand with the amount of water specified in the evaluation report. Continue until the mixture is thoroughly mixed. Normally, the mix time is about 5 minutes to a maximum of 10 minutes. Do not over mix or retemper. Check for stickiness by using a tool and scooping some of the mix and turning upside down. If the mud drops off, then the mix has too much water. Too much water weakens the plaster.

Apply the mix to the wall by hand troweling or machine spraying. The lath must be embedded in the minimum coating thickness and cannot be exposed.





Make sure the base coat covers the surface uniformly.

Since the minimum thickness is 3/8-inch, a method should be devised to measure the thickness to assure the thickness is achieved. The minimum thickness is measured from the front of the weather barrier to the finish base coat.

Moist curing may be required to insure total hydration of the cement. Water sprayed on the walls for moist curing should be from a fog spray, not a direct stream from a nozzle fitted hose. Consult the manufacturer for curing recommendations.

The base coat should not be left unfinished. Consult the manufacturer for finish recommendation.





# ***FLASH WINDOWS***

## FLASH WINDOWS

Flash windows and doors per details approved in evaluation report. Code requires flashing materials to be in accordance with the code or approved for flashing under a recognized ICC ES evaluation report. We recommend following either one of the AAMA Method “A” or “A-1”. The following details outline both of the AAMA Methods.

### **Window Flashing Based on AAMA Method “A”**

#### **Condition**

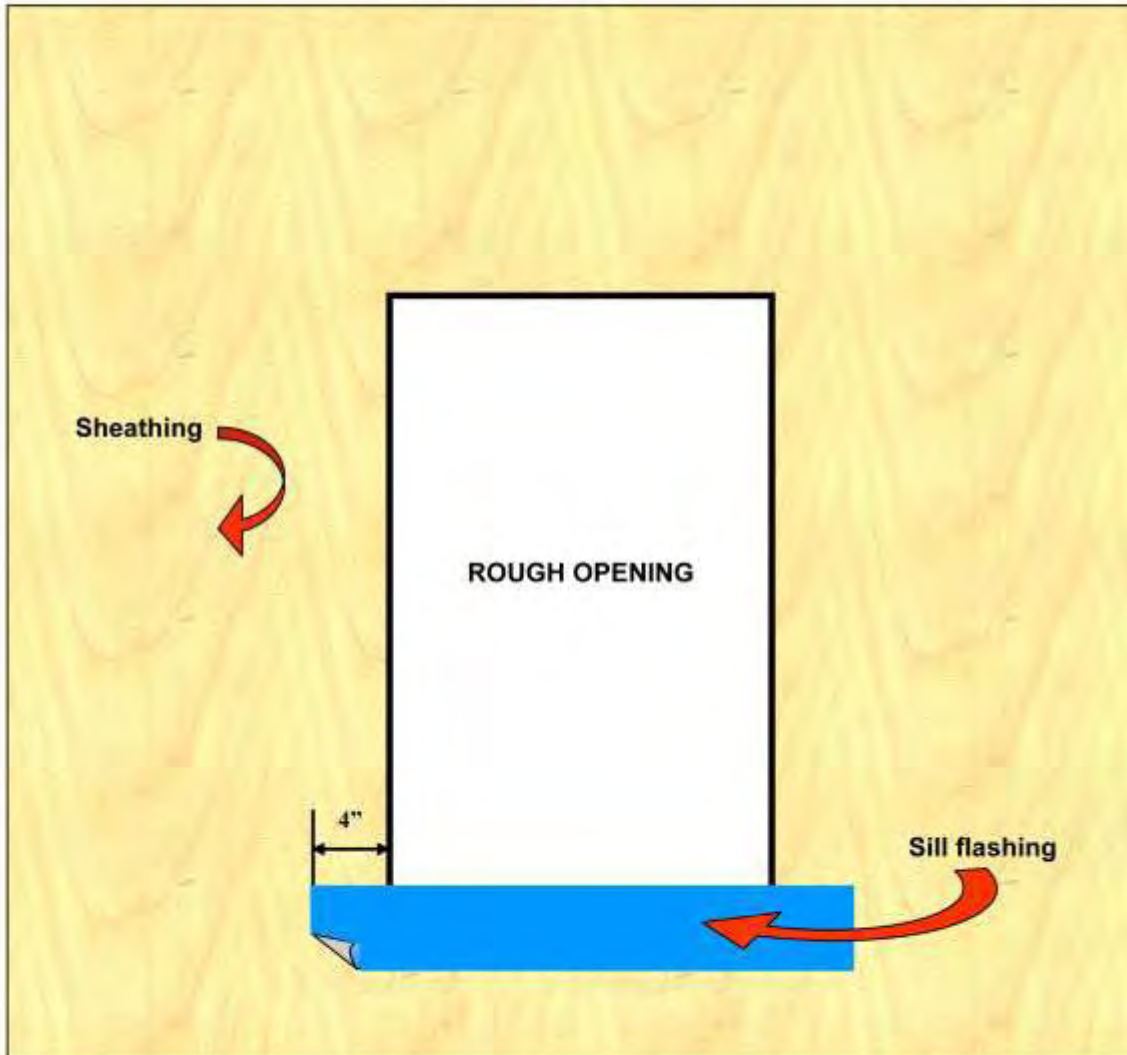
The window is installed before the building paper, house wrap, fluid applied is added.

#### **Steps**

7 steps outlined in subsequent pages.

## WINDOW FLASHING METHOD "A"

### Step 1

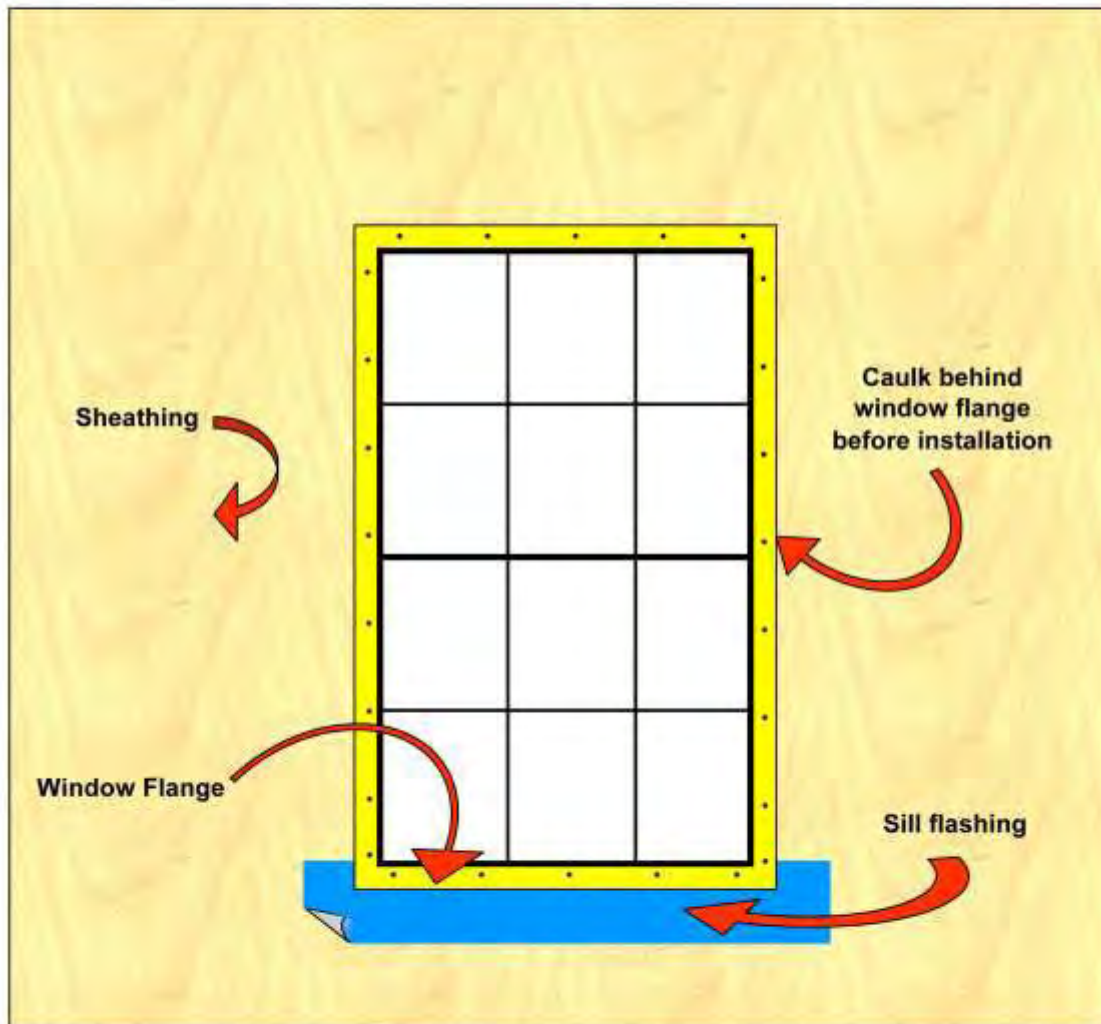


#### Step #1

- a. Install sill flashing extending 4" beyond the rough opening on each side.
- b. Do not attach the bottom of the sill flashing. This will allow the building paper to be installed beneath the sill flashing in step #5.

## WINDOW FLASHING METHOD "A"

### Step 2

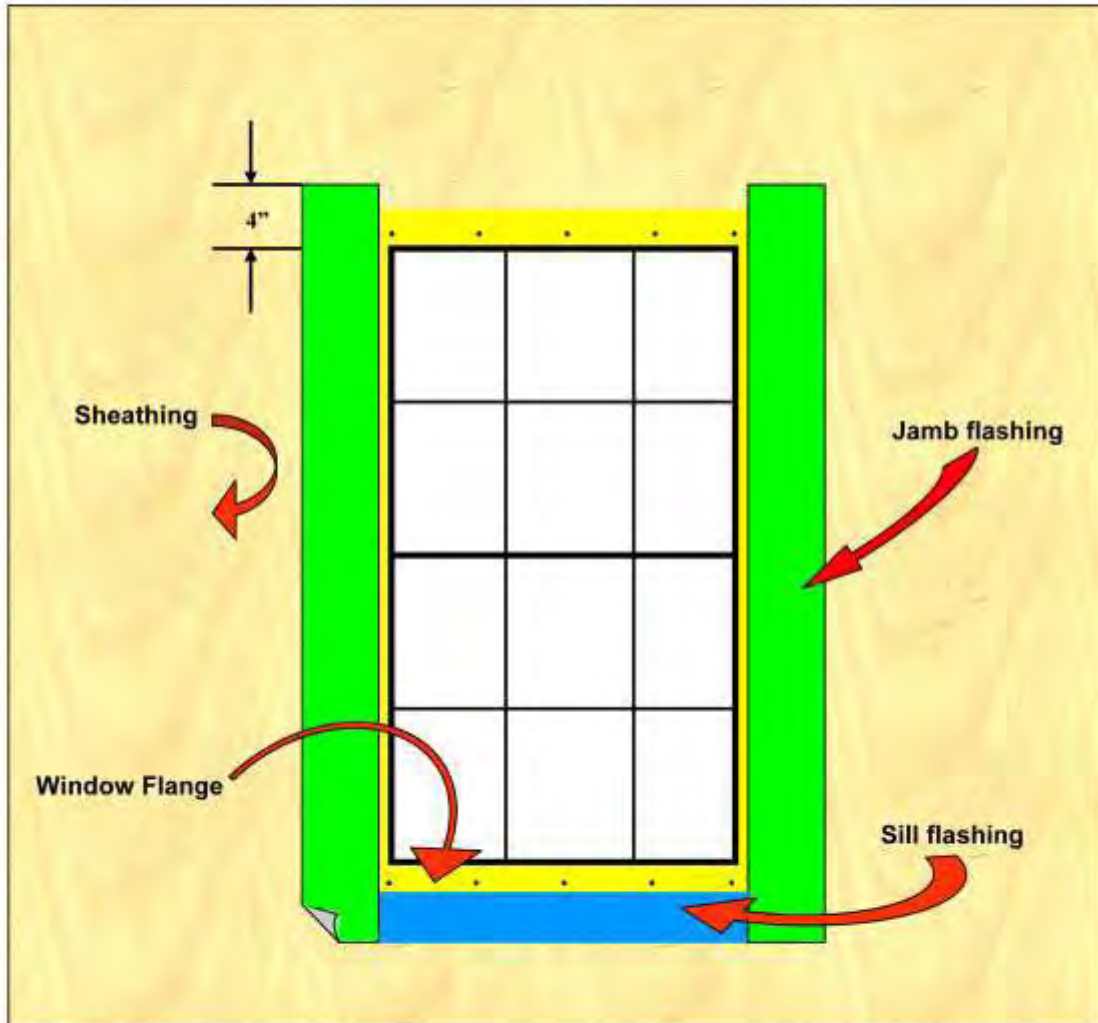


#### Step #2

- a. Apply a continuous bead of caulking on the back side of the window flange.
- b. Install the window over the sill flashing and according to the manufacturers specifications.
- c. Do not attach the bottom of the sill flashing. This will allow the building paper to be installed beneath the sill flashing in step #5.

## WINDOW FLASHING METHOD "A"

### Step 3

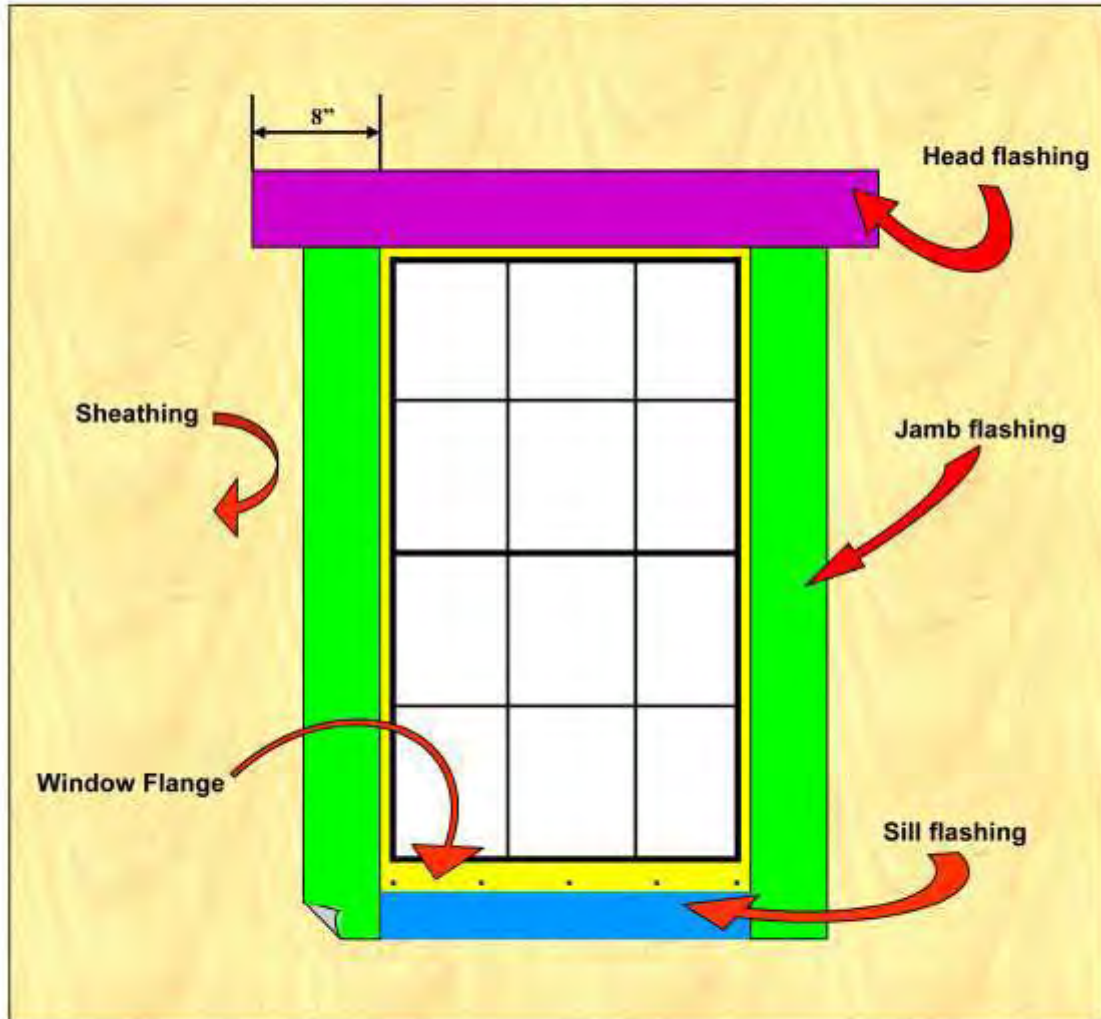


#### Step #3

- Install jamb flashing over the window flange on each side.
- Install the jamb flashing even with the bottom of the sill flashing.
- Extend jamb flashing 4" above the rough opening.
- Do not attach the bottom of the sill flashing. This will allow the building paper to be installed beneath the sill flashing in step #5.

## WINDOW FLASHING METHOD "A"

### Step 4

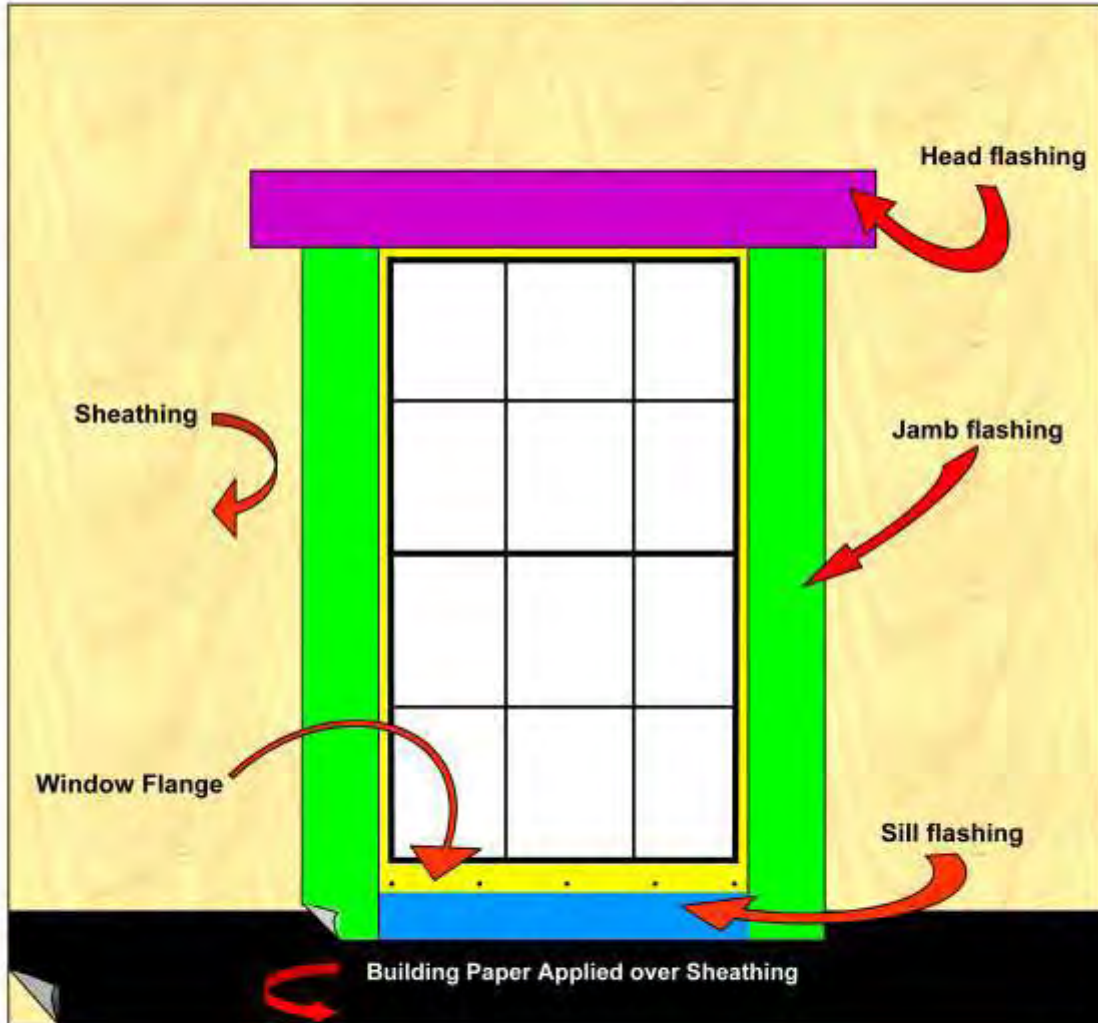


#### Step #4

- Install head flashing over the window flange and the jamb flashing.
- Extend the head flashing 8" beyond the rough opening.
- Do not attach the bottom of the sill flashing. This will allow the building paper to be installed beneath the sill flashing in step #5.

## WINDOW FLASHING METHOD "A"

### Step 5



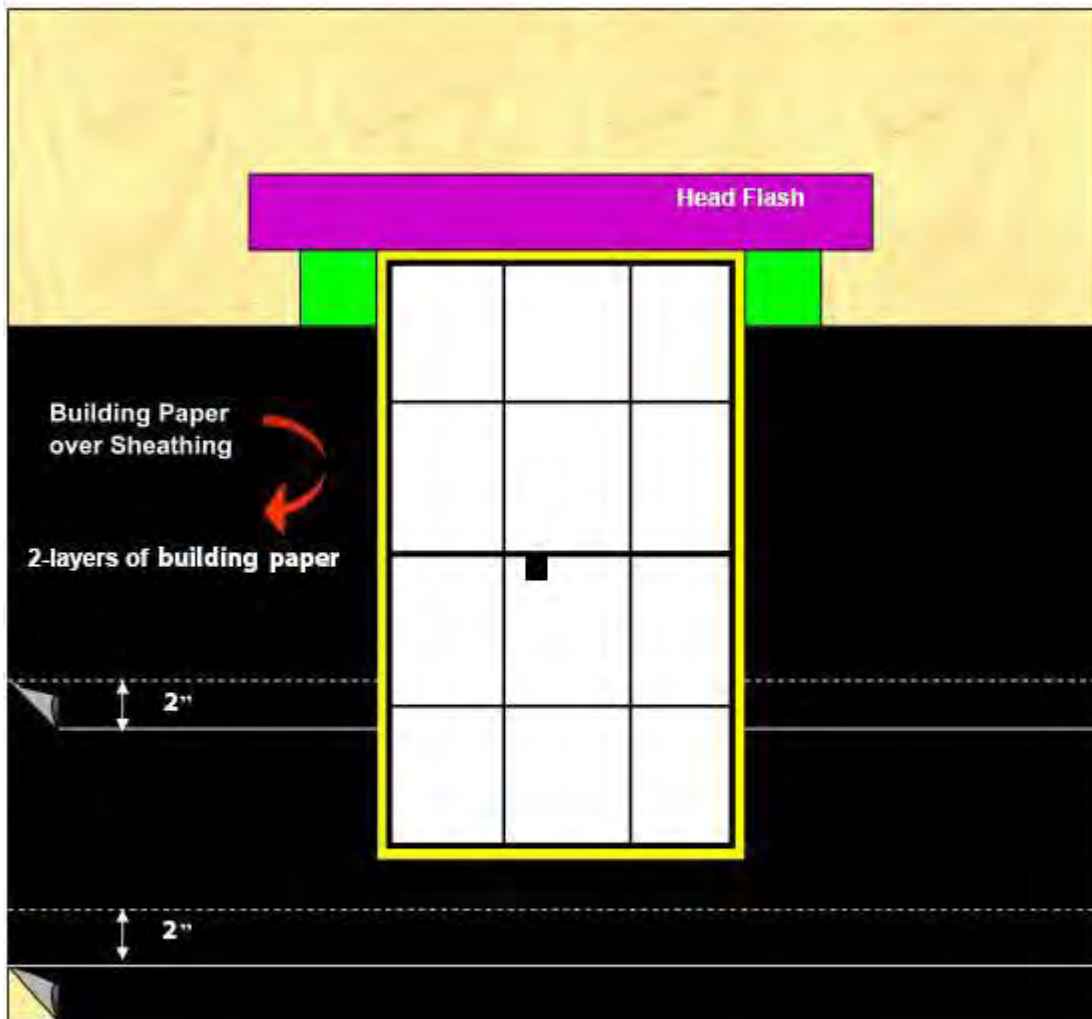
#### Step #5

- Install building paper beneath the unattached portion of the sill flashing.
- Finish attaching sill flashing to the building paper.
- Do not attach the bottom of the sill flashing. This will allow the building paper to be installed beneath the sill flashing in step #5.



## WINDOW FLASHING METHOD "A"

### Step 6

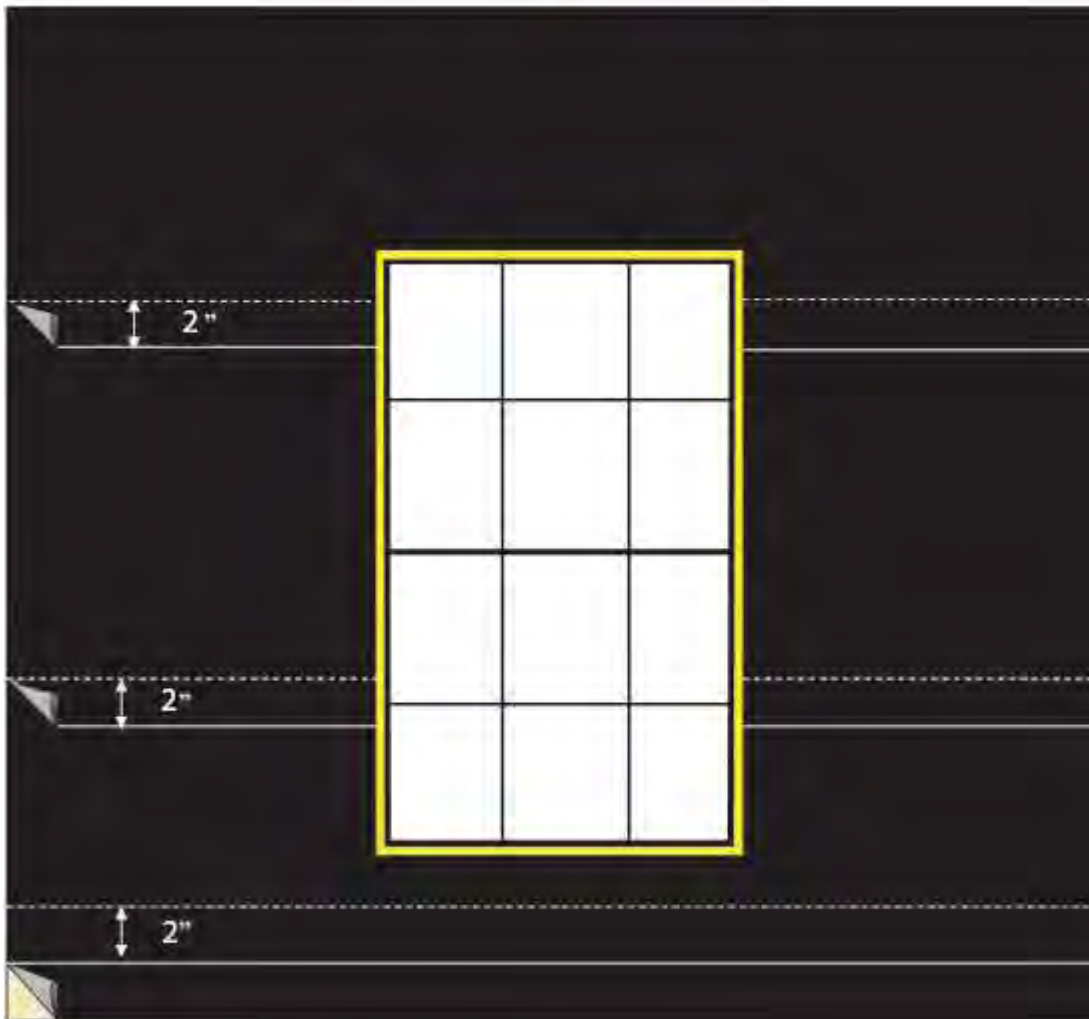


#### Step #6

- Continue installing building paper from the bottom to the top wall.
- Install the building paper over the flashing and window flange fitting tightly against the window frame.
- Overlap building paper by a minimum of 2".

## WINDOW FLASHING METHOD "A"

### Step 7



#### Step #7

- a. Continue installing building paper from the bottom to the top wall.
- b. Install the building paper over the flashing and window flange fitting tightly against the window frame.
- c. Overlap building paper by a minimum of 2\"/>

## **Window Flashing Based on AAMA Method “A-1”**

### **Condition**

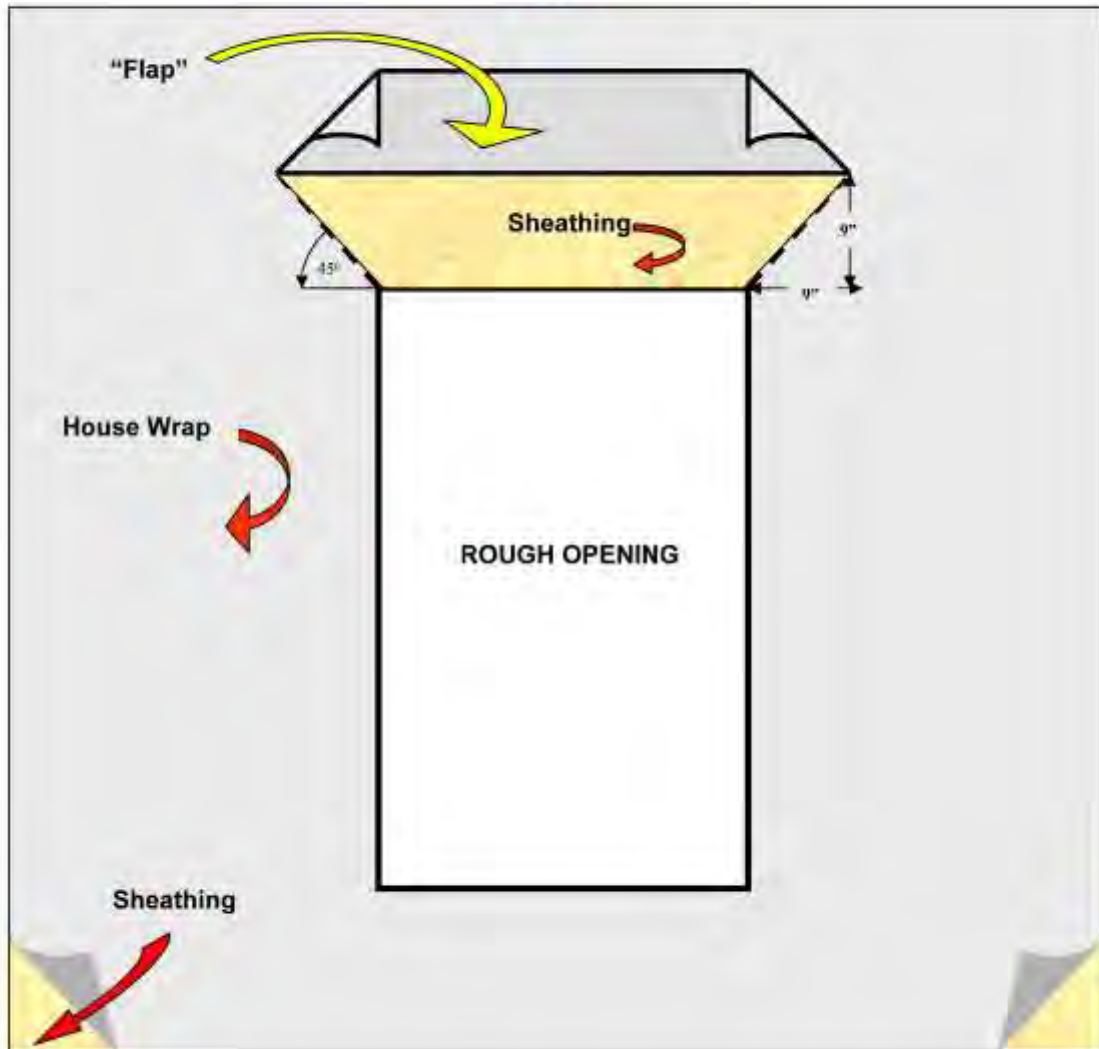
The window is installed after the building paper, house wrap or fluid applied is installed.

### **Steps**

7 steps outlined in subsequent pages.

## WINDOW FLASHING METHOD "A-1"

### Step 1

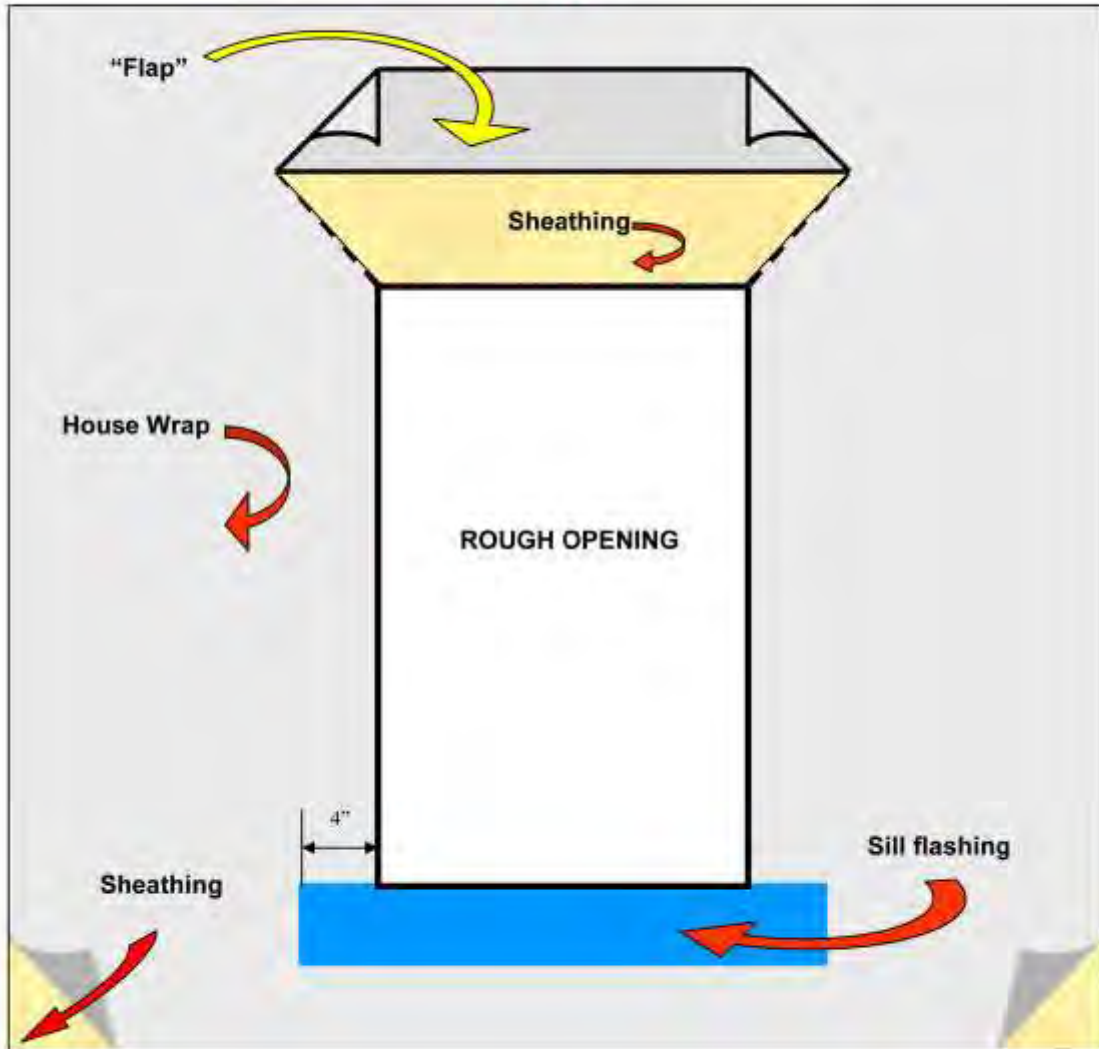


#### Step #1

- a. Cut the building paper at a 45° angle to a point 9" up and 9" out from the upper corners of the rough opening.
- b. This will make a "flap" that will be used to cover the head flashing in Step #6.

## WINDOW FLASHING METHOD "A-1"

### Step 2

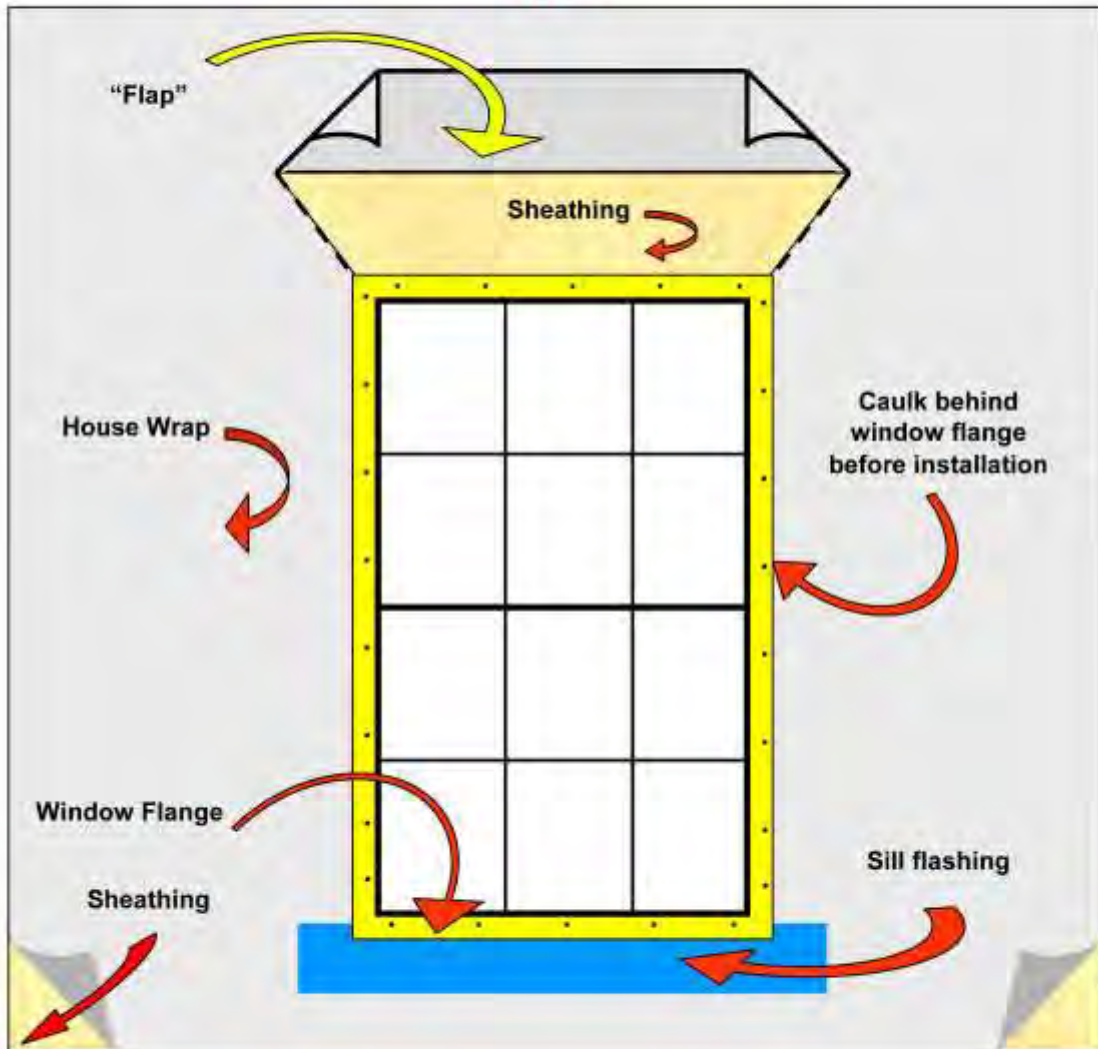


### Step #2

- a. Install sill flashing extending 4" beyond the rough opening on each side.

## WINDOW FLASHING METHOD "A-1"

### Step 3

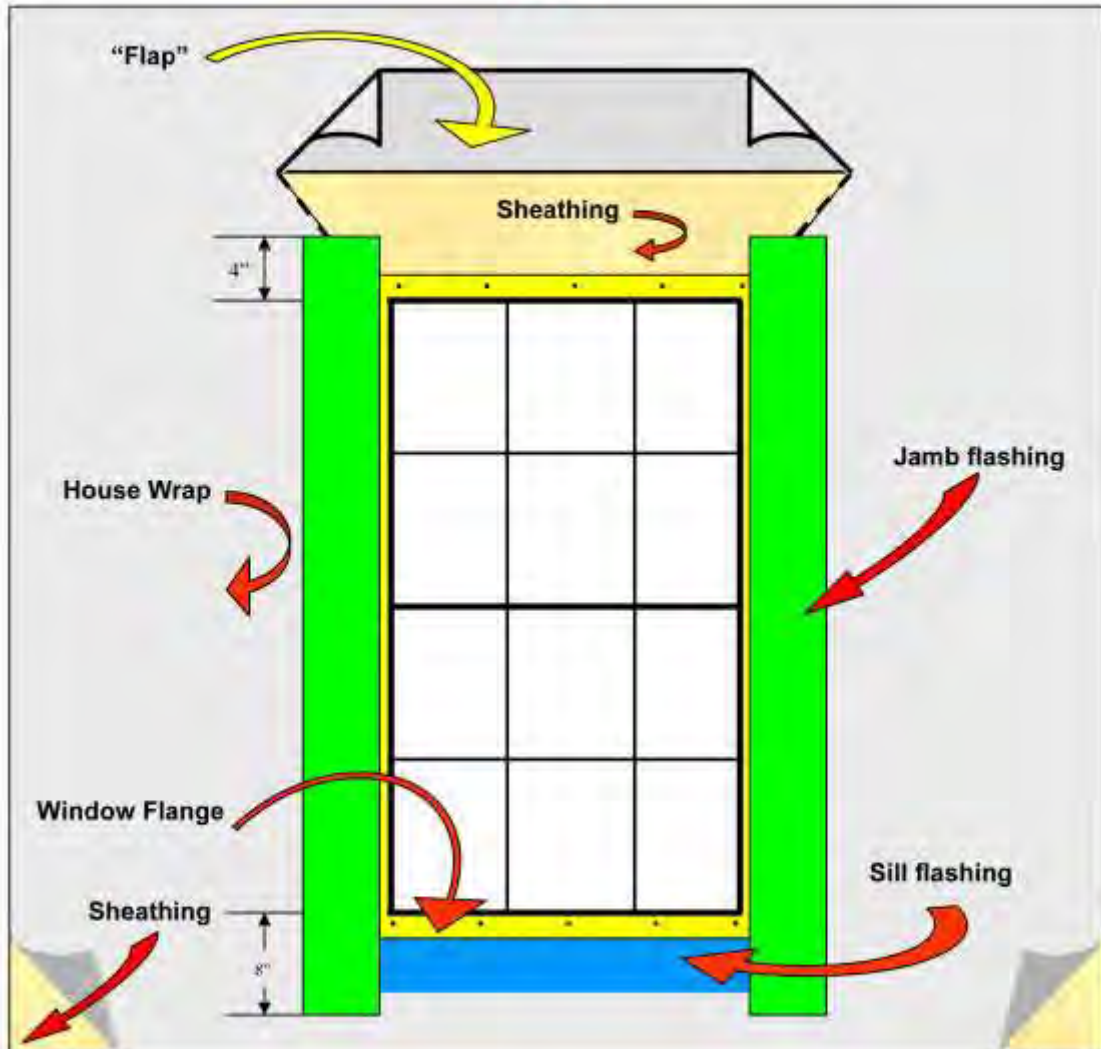


### Step #3

- a. Apply a continuous bead of caulking on the back side of the window flange.
- b. Install the window according to the manufacturers specifications.

## WINDOW FLASHING METHOD "A-1"

### Step 4

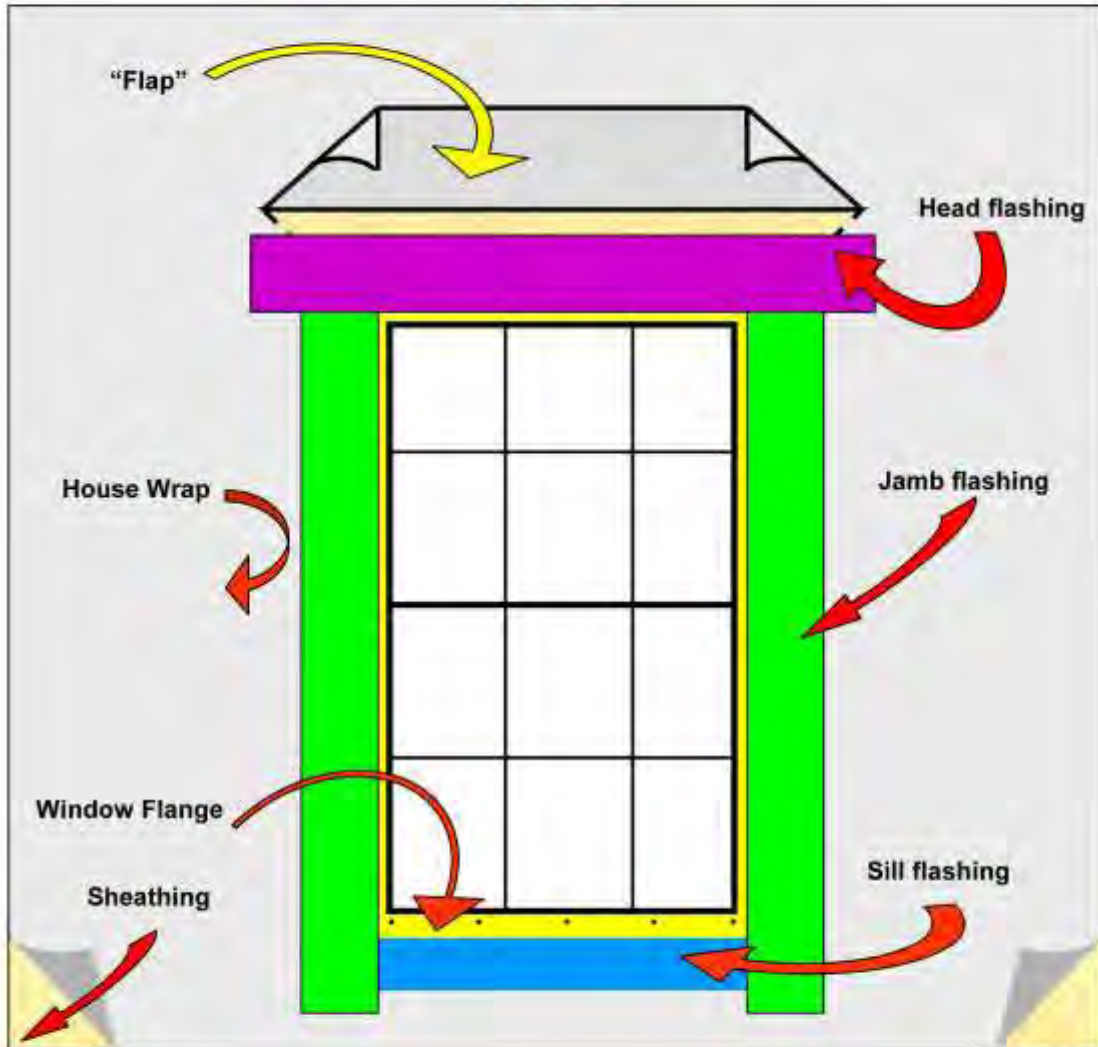


#### Step #4

- Install jamb flashing over the window flange on each side.
- Extend the jamb flashing 4" above the rough opening and 8" below the rough opening.
- Do not let sill flashing extend beyond jamb flashing.

## WINDOW FLASHING METHOD "A-1"

### Step 5



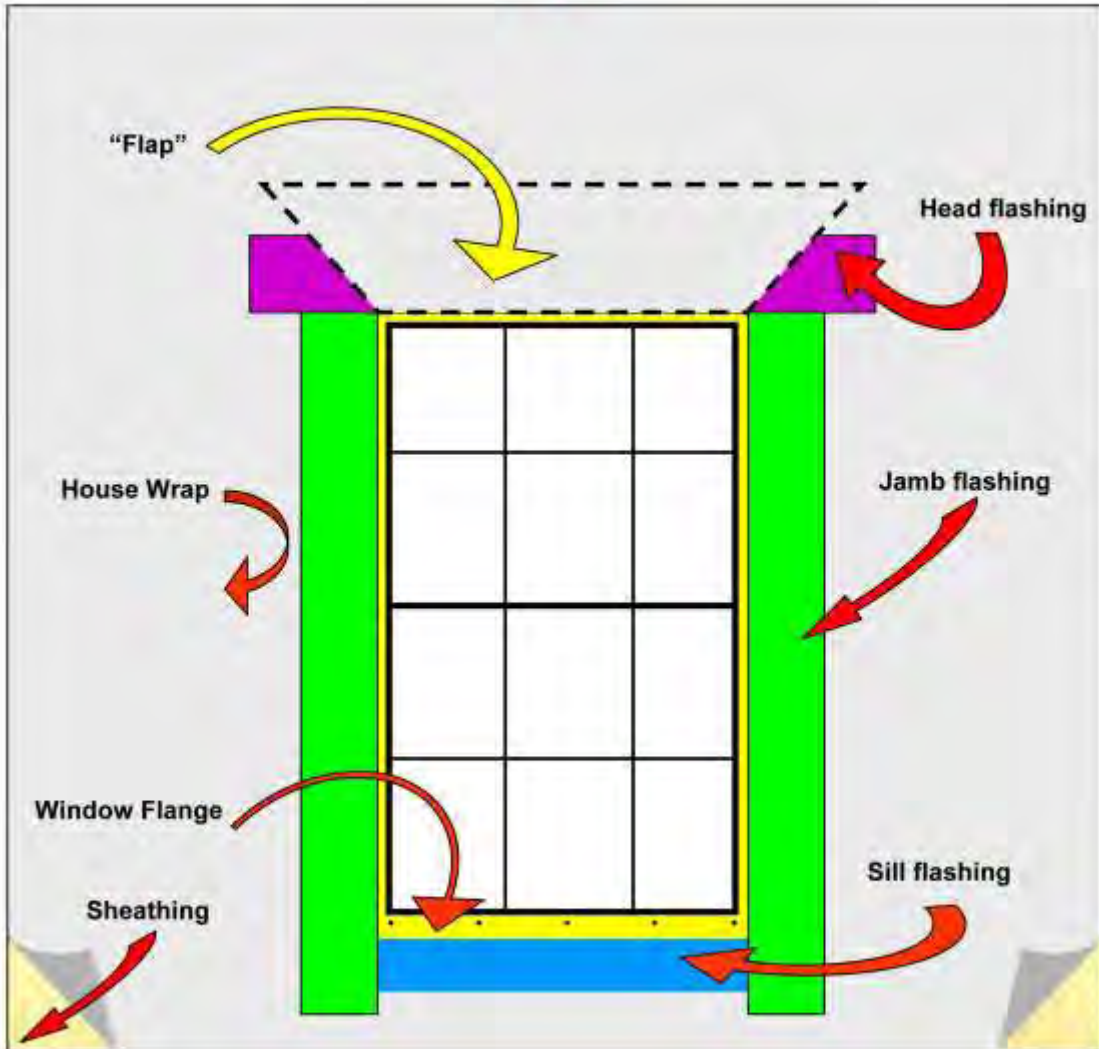
#### Step #5

- a. Install head flashing over the window flange.
- b. Extend the head flashing 8" beyond the rough opening on each side.



## WINDOW FLASHING METHOD "A-1"

### Step 6

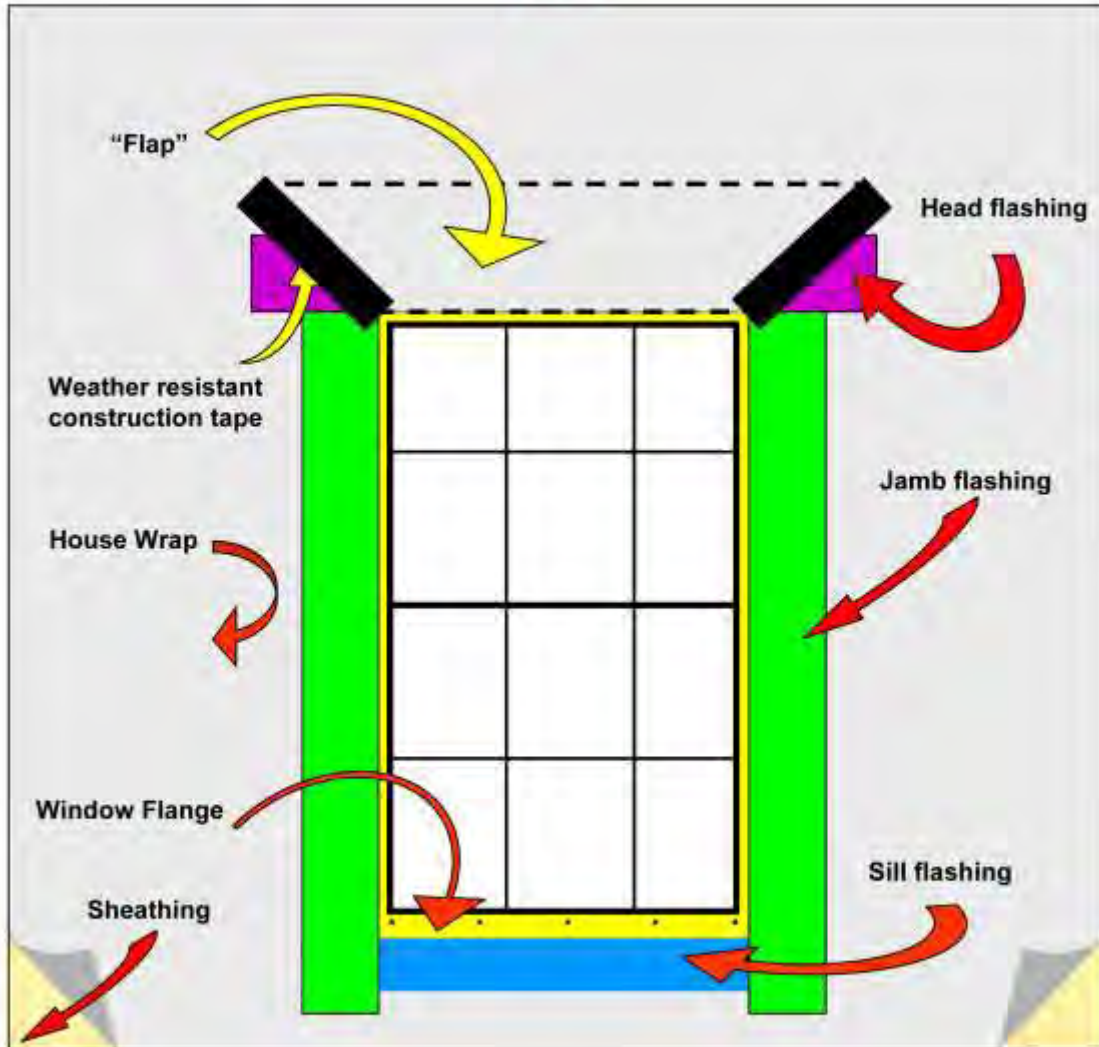


#### Step #6

- a. Allow the building paper "flap" to drape over the head flashing.

## WINDOW FLASHING METHOD "A-1"

### Step 7



#### Step #7

- a. Apply weather resistant tape over the 45° angle cut in the building paper.



# ***APPENDIX***

## **SELECTING A QUALITY LATHING AND PLASTERING CONTRACTOR**

To select a quality contractor, consider the following questions:

- A. Is the contractor a member of a professional association, a state or regional plastering contractors association or bureau, which sets standards and is recognized in the construction community, such as the National One Coat Stucco Association?
- B. Does the contractor carry all required insurance coverage?
- C. Will the contractor provide a list of previous jobs similar to the one you are planning?
- D. Can the contractor meet the financial terms and time schedule involved?
- E. Is the contractor an approved applicator of the method or system being specified?
- F. Does the contractor meet all local and state government requirements for the trade?

## GLOSSARY OF TERMS

**Accelerator:** An admixture that speeds the rate of hydration of hydraulic cement shortens the normal time of setting or increases the rate of hardening, of strength development, or both, of Portland cement plaster.

**Additive:** A substance that is interground or blended in limited amounts into a hydraulic cement during manufacture – not at the job site – either as a processing addition to aid in manufacturing and handling the cement or as a functional addition to modify the useful properties of the cement.

**Admixture:** A material other than water, aggregate, or basic cementitious material added to the batch before or during job mixing.

**Aggregate:** A granular material such as natural sand, vermiculite or perlite.

**American Plywood Association:** An association focused on assisting the industry in creating structural wood products of exceptional strength, versatility and reliability as well as promoting suggestions and solutions to benefit the industry.

**Bleeding:** The accumulation of mixing water on the surface of plaster caused by compression of the solid materials within the mass. Bleed water occurs on the surface of a mass of plaster in a container or hopper, commonly influenced by vibration. Also called water gain.

**Blended Hydraulic Cement:** A binder produced by intimately and uniformly intergrinding or blending two or more types of fine materials, such as Portland Cement, ground granulated blast-furnace slag, fly ash, silica fume, calcined clay, other pozzolans and hydrate lime.

**Blistering:** The bubbling of the finish plaster coat where it separates and expands away from the base coat.

**Bond:** Adhesion of stucco to other surfaces against which it is applied; adhesion of cement paste to aggregate; adhesion between stucco coats or between stucco and a substrate.

**Bondbreaker:** A material used to prevent adhesion of newly placed plaster to a section of the substrate.

**Bond Strength:** The adhesion developed between stucco and a substrate; the resistance to separation of plaster from other materials in contact with it.

**Bonding Agent:** A compound applied as a coating to a suitable substrate to enhance a bond between it and a succeeding layer, as between a subsurface and a succeeding stucco application.

**Building Structure:** A wall assembly consisting of wood or steel studs with a sheathing board.

**Carbonation:** Reaction between carbon dioxide and a hydroxide to form a carbonate, especially in cement paste or plaster; the reaction with calcium compounds that produces calcium carbonate.

**Catface:** Blemishes or rough depressions in finish stucco comparable to pockmarks.

**Cementitious Material:** A material that, when mixed with water and with or without aggregate, provides the plasticity and the cohesive and adhesive properties necessary for placement and the formation of a rigid mass.

**Checking:** Development of shallow cracks at closely spaced but irregular intervals in the stucco surface.

**Coat:** A thickness of stucco applied in a single operation.

**Cohesion:** The ability of a material to cling to itself.

**Consistency:** The relative mobility or ability of freshly mixed plaster to flow.

**Cold Joint:** The juncture of fresh stucco application adjacent to set plaster.

**Control Joint:** Generally refers to a flexible, single piece component designed to control the thermal and normal shrinkage in cement plaster.

**Corner Reinforcement (corner bead):** Reinforcement for stucco used at corners to provide continuity between two intersecting stucco planes.

**Corrosion:** Disintegration or deterioration of metal reinforcement due to electrolysis or chemical attack.

**Curing:** Keeping freshly applied stucco moist and at a favorable temperature for a specified period of time following the application. Curing assures satisfactory hydration and carbonation of the cementitious materials and proper hardening of the stucco.

**Curling:** The distortion or warping of an essentially planar surface into a curved shape, due to several factors such as temperature and moisture differences within the stucco coat.

**Dampproofing:** Treatment of plaster to retard the passage or absorption of water, or water vapor, either by application of a suitable surface treatment on exposed surfaces or by use of a suitable admixture or treated cement.

**Darby:** A flat wooden or metal tool approximately 4 inches wide and 42 inches long with handles used to level out the brown coat.

**Dash-bond Coat:** A thick wet mixture of portland cement and water, with or without aggregate, dashed onto the surface of stucco base, such as smooth monolithic concrete or concrete blocks, to improve the mechanical key for subsequent stucco coats.

**Dash Finish:** A final texture that is usually machine applied. The texture will vary depending the type of machine, air pressure, size of nozzle and aggregate.

**Discoloration:** Change in color from the normal or desired hue.

**Durability:** The ability of Portland Cement plaster to resist weathering action, chemical attack, abrasion and other potentially harmful service conditions.

**Efflorescence:** A chalky or powdery white film that forms on or below the surface of cementitious types of materials such as concrete, brick and stucco, resulting from the deposit of water-soluble mineral salts. These salts can migrate to the surface in diverse ways, most significant by water, which leaves the salt deposits after evaporation.

**Elastomeric Coating:** A material that can expand and contract without rupture, based on its elongation properties.

**Expanded Metal Lath:** Sheets of metal that are slit and pulled out to form diamond-shaped openings; used as metal reinforcement for plaster.

**Expansion Joint:** Generally refers to a telescoping two or three-piece accessory designed to control structural or seismic stresses.

**Exterior Insulation and Finishing System (EIFS):** Proprietary cladding system incorporating an insulation board, lamina and an acrylic finish coat.

**Factory Prepared Stucco Materials (“mill-mixed” or “ready-mixed”):** Pertaining to material combinations that have been formulated and dry-blended by the manufacturer, requiring only the addition of and mixing with water to produce stucco. (Stucco finish coat)

**Faux Finish:** Generally refers to a painted surface made to imitate a variegated plaster finish (French).



**Featheredge:** A wood or metal tool with a beveled edge and varying in length; used to straighten reentrant angles in finish-coat plaster. Also used to plane the surface of the brown coat and dry rod or dry rake it to better control color in the finish coat.

**Fine Aggregate:** Natural or manufactured sand that passes the No. 4 (4.75-mm) sieve.

**Finish Coat:** The final coat of stucco, referred to as the decorative surface, usually colored and textured.

**Flashing:** A metal or self-adhered flashing tape material used to prevent water entry and/or direct the water migration in a desired direction between two or more materials and/or surfaces.

**Floating:** Act of compacting and leveling a stucco basecoat; act of bringing the aggregate to the surface of finish-coat stucco.

**Fog Coat:** A fine mist of cement based paint color used to provide uniformity in integral colored cement finish coats.

**Framing:** Structural members such as columns, beams, girders, studs, joists, headers, trusses, etc., of wood or steel.

**Gradation:** The size distribution of aggregate particles, determined by separation with standard screen sizes.

**Hairline Cracks:** Very fine cracks in either random or essentially straight line patterns that are just visible to the naked eye.

**Harsh Mixture:** A mixture that lacks desired consistency and workability due to a deficiency of cement paste, aggregate fines, sufficient water or a combination of the above.

**Hawk:** A tool to hold and carry plaster from the board to the working face during hand-applied plastering.

**Hydrated Lime:** The product manufactured by heating limestone until carbon dioxide is removed, thus forming quicklime (calcium and magnesium oxides), subsequently hydrated using water additions. Hydrated lime processing involves pressure hydration, atmospheric hydration, or slaking.

**Lace Finish:** Refers to a lighter skip trowel finish than Spanish texture.

**Lath:** Reinforcement base to receive plaster, generally secured to a substrate.

**Live Crack:** The process of a crack still opening. Generally related to structural or substrate movement or expansion.

**Mechanical Bond:** The physical keying of one plaster coat to a substrate or another coat; or plaster keying to metal lath; or interlock between adjacent plaster coats created by surface irregularities, such as scratching.

**Metal Lath:** The slit and expanded or stamp-punched from plain or galvanized steel coils or sheets that are coated with a rust-inhibiting paint after fabrication or is galvanized.

**Moisture Movement:** The migration of moisture within and from a porous medium, caused by an imbalance as surface moisture is lost through evaporation.

**Nozzle:** Attachment at discharge end of delivery hose used for machine application of plaster. The nozzle allows adjustment of the spray pattern.

**One-Coat Stucco:** A proprietary cladding system, consisting of lath, one basecoat and a finish coat.

**Plaster:** A cementitious material or combination of cementitious materials and aggregates that, when mixed with water, creates a workable material which hardens to a rigid state.

**Plaster Ground:** A piece of wood or trim accessory that acts as a termination and/or gauge to determine the thickness of the plaster.

**Plasticity:** A complex property of plaster involving the flow of the plaster associated with an applied force; that property of freshly mixed plaster that determines its resistance to deformation or its ease of molding.

**PVC:** Poly Vinyl Chloride. Plastic that is used to manufacture stucco trim.

**Puddling:** The build-up of material in a specific area.

**Rain Screen:** Generally refers to an exterior wall cladding system with a measurable airspace between the building sheathing material and the backside of the exterior cladding system.

**Reentrant Crack:** A hairline crack that can develop at the apex of a 90° corner in Portland Cement products.

**Retardation:** Slowing down the rate of hardening or setting of plaster to increase the plaster setting and hardening times.

**Retempering:** After initial mixing, adding water and remixing plaster that has started to stiffen and become harsh.

**Rod:** A straight edge used in plastering to straighten walls and ceilings, typically constructed of magnesium or aluminum.

**Rodding:** A method of straightening the stucco basecoat.

**Self-Furring:** Lath manufactured to include raised portions of the lath, ribs, or dimples that hold the lath away from the supporting surface and position it for embedment with stucco.

**Set:** The change in plaster from a plastic, workable state to a solid, rigid state. Set is modified by the terms “initial” and “final,” both arbitrary appraisals of degree of hardening.

**Skim Coat:** A finish coat applied to an existing stucco surface or other substrate to improve appearance.

**Spalling:** Similar to Checking, but the bond has been partially or fully damaged.

**Spanish Texture:** Refers to a medium to heavy skip-trowel finish coat.

**Stucco Finish Coat:** The final layer of stucco (job-site mixed or pre-manufactured) applied over basecoat stucco or direct to concrete.

**Substrate:** Referring to the surface to which lath and plaster is to be applied.

**Suction:** The absorptive capacity of a substrate or stucco surface.

**Trowel:** A flat, broad-blade steel hand tool used to apply, spread, shape and smooth finish-coat plaster.

**Vapor Permeable:** A material that will allow water to pass through as a gas (vapor).

**Variiegated:** Finished surface which is irregularly marked with different colors.

**Warping:** A deviation of a wall surface from its original shape, usually caused by temperature or moisture differentials within the plaster.

**Weather Resistant Barrier:** A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.

**Workability:** The property of freshly mixed stucco that determines its working characteristics, i.e., the ease with which it can be mixed, placed, and finished.

**Zinc Alloy:** A soft malleable bluish-white metal.

## SPONSORS

The following firms have contributed to make the production of the One Coat Stucco Reference Guide possible:

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## SECTION 09 2526

### ONE-COAT STUCCO

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

Microsoft Word 2007: Click the Office button, select Word Options, select Display, then select or deselect the HIDDEN TEXT option.

Microsoft Word (earlier versions): From the pull-down menus select TOOLS, then OPTIONS. Under the tab labeled VIEW, select or deselect the HIDDEN TEXT option.

Corel WordPerfect: From the pull-down menus select VIEW, then select or deselect the HIDDEN TEXT option.

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
1. Premixed, Portland cement based stucco base coat and finish coat.
  2. Metal lath.
  3. Lathing trim and accessories.
  4. Polystyrene foam [details.] [insulation.]
- B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
  2. Section [03 3000 - Cast-In-Place Concrete:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Concrete substrate to receive stucco system.
  3. Section [04 2000 - Unit Masonry:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Masonry substrate to receive stucco system.
  4. Section [06 1100 - Framing and Sheathing:] [\_\_ \_\_\_\_ - \_\_\_\_:]; [Plywood] [Oriented strand board sheathing] substrate to receive stucco system.
  5. Section [06 1643 - Gypsum Sheathing:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Gypsum sheathing to receive stucco system.
  6. Section [07 2800 - Moisture Barriers:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Weather-resistant wall barrier.
  7. Section [07 6200 - Sheet Metal Flashings and Trim:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Metal wall flashings.
  8. Section [07 6500 - Flexible Flashings:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Flexible wall flashings.
  9. Section [07 9200 - Joint Sealers:] [\_\_ \_\_\_\_ - \_\_\_\_:]; Joint sealers used in conjunction with stucco system.
  10. Section [09 2236 - Lath:] [\_\_ \_\_\_\_ - \_\_\_\_:]; [Metal lath.] [Wire mesh.]

##### 1.2 REFERENCES

- A. ASTM International (ASTM):
  - 1. C144 - Standard Specification for Aggregate for Masonry Mortar.
  - 2. C847 - Standard Specification for Metal Lath.
  - 3. C897 - Standard Specification for Aggregates for Job-Mixed Portland Cement-Based Plasters.
  - 4. C926 - Standard Practice for Application of Portland Cement-Based Plaster.
  - 5. C933 - Standard Specification for Welded Wire Lath.
  - 6. C932 - Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering.
  - 7. C1032 - Standard Specification for Woven Wire Plaster Base.
  - 8. C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
- B. ICC Evaluation Service (ICC-ES) - Evaluation Reports.
- C. National One Coat Stucco Association (NOCSA).

### 1.3 SUBMITTALS

- A. Submittals for Review:
  - 1. Product Data: Manufacturer's technical information and application instructions.
  - 2. Samples:
    - a. [6 x 6] [\_\_ x \_\_] inch finish coat samples showing available colors.
    - b. [After color selection, submit] [12 x 12] [\_\_ x \_\_] inch plaster samples showing finish coat in [specified] [selected] color and texture.
    - c. [6] [\_\_] inch long trim samples.
    - d. [6 x 6] [\_\_ x \_\_] inch metal lath samples.
- B. Sustainable Design Submittals:
  - 1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled content.
  - 2. Regional Materials: Certify distance between manufacturer and Project and between manufacturer and extraction or harvest point in miles.
- C. Quality Control Submittals:
  - 1. Building Code Acceptance: Copies of manufacturer's current evaluation reports issued by Code authorities showing acceptance of stucco system.
  - 2. Copy of stucco manufacturer's current NOCSA membership certificate.
  - 3. Copy of stucco manufacturer's ICC-ES Evaluation Report.

### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum [2] [\_\_] years [documented] experience in work of this Section.
- B. Mockup:
  - 1. Size: Minimum [4 x 4] [\_\_ x \_\_] feet.
  - 2. Show: Plaster color and texture, trim, and overall workmanship.
  - 3. Locate [where directed.] [\_\_\_\_.]
  - 4. Approved mockup may [not] remain as part of the Work.
- C. Not Acceptable: Lines in stucco caused by variations in application or finishing techniques, cold joints, and other surface defects visible when viewed from a distance of 10 feet.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers bearing identifying labels.
- B. Store materials off ground or floor, properly covered.
- C. Protect cementitious materials from moisture and humidity.
- D. Protect water-based materials from freezing.

1.6 PROJECT CONDITIONS

- A. Cold Weather Requirements: Do not apply stucco unless minimum ambient temperature is forecast to be above 40 degrees F during and for minimum 24 hours after application.
- B. Hot Weather Requirements: Protect applied stucco from uneven and rapid evaporation during hot, dry, or windy weather by one of following methods:
  - 1. Fog surface with potable water.
  - 2. Cover with minimum 6 mil polyethylene film weighted or taped in place.

**PART 2 PRODUCTS**

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
  - 1. Eagle Building Materials.
  - 2. Expo Stucco Products. ([www.expostucco.com](http://www.expostucco.com))
  - 3. EZ Wall Concentrate, Inc. ([www.ezconcentrate.com](http://www.ezconcentrate.com))
  - 4. Formulated Solutions, LLC. ([www.formulatedsolutions.net](http://www.formulatedsolutions.net))
  - 5. IMASCO Minerals, Inc. ([www.imascominerals.com](http://www.imascominerals.com))
  - 6. Kwik Kote Corporation. ([www.kwikkote.com](http://www.kwikkote.com))
  - 7. Omega Building Products International, Inc. ([www.omega-products.com](http://www.omega-products.com))
  - 8. Sacramento Stucco Co. ([www.westernblended.com](http://www.westernblended.com))
  - 9. Spec Mix, Inc. ([www.specmix.com](http://www.specmix.com))
  - 10. Star Building Products.
  - 11. Sto Corp. ([www.stocorp.com](http://www.stocorp.com))
  - 12. The Quikcrete Companies. ([www.quickcrete.com](http://www.quickcrete.com))
- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

- A. Metal Lath: ASTM C847, [expanded [flat] [self-furring] diamond mesh,] [flat rib, [1/8] [ ] inch high,] [high rib, [3/8] [ ] inch high,] galvanized [, backed with Grade D paper].

\*\*\*\* OR \*\*\*\*



- B. Welded Wire Lath: ASTM C933, welded [flat] [self-furring] square mesh,] [2 x 2] [\_\_ x \_\_] inch, [16] [\_\_] gage, galvanized [, backed with Grade D paper].

\*\*\*\* OR \*\*\*\*

- C. Woven Wire Plaster Base: ASTM C1032, woven [flat] [self-furring] mesh,] [20] [17] [\_\_] gage gage, galvanized [, backed with Grade D paper].

- D. Moisture Barrier: Specified in Section [07 2800.] [\_\_ \_\_\_\_].]

- E. Base Coat: Manufacturer's standard premixed, concentrated, pre-sanded one coat stucco base coat consisting of Portland cement, graded aggregate, fibers, and proprietary ingredients.

\*\*\*\* OR \*\*\*\*

- F. Base Coat:

1. Manufacturer's standard premixed, concentrated one coat stucco base coat consisting of Portland cement, fibers, and proprietary ingredients.
2. Sand: ASTM C144 or ASTM C897, natural or manufactured, uniformly graded.

- G. Finish Coat:

1. Type: Cement based colored stucco finish coat consisting of Portland cement, lime, graded aggregate, colorant, and proprietary ingredients.
2. Color: [[Custom] [\_\_ \_] color.] [Color to be selected from manufacturer's full color range.]
3. Color-stabilizing spray: Fog coat in color to match finish coat, consisting of Portland cement, lime, graded aggregate, colorant, and proprietary ingredients.

\*\*\*\* OR \*\*\*\*

- H. Finish Coat:

1. Primer: Acrylic based consisting of acrylic polymers and proprietary ingredients.
2. Finish coat: Tinted acrylic finish with aggregate consisting of acrylic polymers, graded aggregate, colorant, and proprietary ingredients.
3. Color: [[Custom] [\_\_ \_] color.] [Color to be selected from manufacturer's full color range.]

\*\*\*\* OR \*\*\*\*

- I. Finish Coat:

1. Primer: Acrylic based consisting of acrylic polymers and proprietary ingredients.
2. Finish coat: Tinted elastomeric acrylic finish with aggregate consisting of acrylic polymers, graded aggregate, colorant, and proprietary ingredients.
3. Color: [[Custom] [\_\_ \_] color.] [Color to be selected from manufacturer's full color range.]

\*\*\*\* OR \*\*\*\*

- J. Finish Coat:

1. Primer: Acrylic based consisting of acrylic polymers and proprietary ingredients.
2. Finish coat: Tinted acrylic finish consisting of 100 percent acrylic polymers and proprietary ingredients.
3. Color: [[Custom] [\_\_ \_] color.] [Color to be selected from manufacturer's full color range.]

\*\*\*\* OR \*\*\*\*

- K. Finish Coat:
1. Primer: Acrylic based consisting of acrylic polymers and proprietary ingredients.
  2. Finish coat: Tinted elastomeric acrylic finish consisting of 100 percent acrylic polymers and proprietary ingredients.
  3. Color: [[Custom] [\_\_\_\_] color.] [Color to be selected from manufacturer's full color range.]
- L. Water: Potable.
- M. Polystyrene Foam:
1. Expanded or extruded polystyrene, minimum 0.9 PCF density, of sizes and shapes indicated on Drawings.
  2. Adhesive: Type recommended by insulation manufacturer; compatible with substrate materials.
- N. Trim and Accessories:
1. Material: [Hot-dip galvanized steel,] [Extruded PVC,] [Zinc alloy,] thickness to suit stucco thickness.
  2. Corner reinforcement: General purpose type, with expanded or perforated flanges.
  3. Casing bead: [Square] [Rounded] profile, expanded or flanged to suit project conditions.
  4. Control joint: Accordion profile with 1/4 inch slot.
  5. Expansion joint: Adjustable type, free-floating, with adjustment from 1/4 to 5/8 inch.
  6. Weep screed: Perforated for drainage.

## 2.3 ACCESSORIES

- A. Fasteners:
1. Type and size suited to application, hot-dip galvanized steel.
  2. [Concrete] [Masonry] backup: Minimum 1/2 inch penetration.
  3. Metal stud backup: Meet ASTM C1063.
- B. Tie Wire: 16 gage, galvanized steel, soft annealed.
- C. Bonding Agent: ASTM C932; type recommended for bonding plaster directly to [concrete] [masonry] surfaces.

## 2.4 MIXES

- A. Mix materials in accordance with manufacturer's instructions.

- B. Use mechanical mixer; hand mixing not permitted unless authorized in advance by Architect.
- C. Accurately proportion materials for initial mixture using measuring devices of known volume.
- D. Withhold 10 percent of water until mixing is nearly complete, then add remainder as required to achieve workable mix.
- E. Maintain mixer in continuous operation while adding materials.
- F. Mixtures may be retempered one time after initial mixing.
- G. Discard frozen, caked, and hardened mixes. Discard mixes not used within 60 minutes after initial mixing.

### **PART 3 EXECUTION**

#### **3.1 PREPARATION**

- A. Clean substrate surfaces of oil, [release agents,] other deleterious materials, and loose and foreign matter.
- B. Wet high suction bases with fine water spray to produce uniformly damp surface.
- C. Apply bonding agent in accordance with manufacturer's instructions.
- D. Verify that [metal lath] [wire mesh] is tight, properly secured, and overlapped.

#### **3.2 INSTALLATION OF METAL [LATH] [PLASTER BASE]**

- A. Perform Work in accordance with ASTM C1063.
- B. Apply with long dimension perpendicular to supports, with end joints staggered [and occurring over supports]. [Secure end laps with tie wire where they occur between supports.]
- C. Lap ends minimum 1 inch and sides minimum [1-1/2] [\_\_] inches.
- D. [Screw] [Wire tie] to framing at maximum [6] [\_\_] inches on center.

\*\*\*\* OR \*\*\*\*

- E. Secure to [concrete] [masonry] with wire hooks or loops spaced maximum [24] [\_\_] inches on center in both directions.
- F. Stop [lath] [plaster base] at each side of [expansion and] control joints and secure.
- G. Reinforce corners of openings with [6 x 12] [\_\_ x \_\_] inch lath strip installed diagonally at each corner, wire tied to [lath.] [plaster base.]

- H. If [lath] [plaster base] is not continued minimum [3] [ ] inches on each side of internal corners, reinforce with [12] [ ] inch wide lath strip bent at 90 degrees and wire tied to [lath.] [plaster base.]

### 3.3 INSTALLATION OF POLYSTYRENE FOAM

- A. Install with long joints continuous and end joints staggered.
- B. Secure to substrate with continuous beads of adhesive.

### 3.4 INSTALLATION OF TRIM

- A. Install casing beads where stucco abuts dissimilar material or stops with edge exposed.
- B. Install corner beads at external corners.
- C. Install control joints
  1. Locate as follows unless otherwise indicated on Drawings:
    - a. As required to limit each area of plaster to [144] [ ] square feet with no dimension exceeding [18] [ ] feet.
    - b. Horizontally at each floor line.
  2. Run vertical joints continuous; butt horizontal joints into vertical joints.
  3. Apply joint sealer to form waterstop behind joints at intersections.
- D. Install expansion joints at locations indicated on Drawings.
- E. Install weep screeds at bottom of wall.
- F. Set level and true to line. [Wire tie to [metal lath] [wire mesh] at maximum 12 inches on center.] [Screw to supports at maximum [12] [ ] inches on center.]

### 3.5 APPLICATION OF BASE COAT

- A. Apply base coat in accordance with manufacturer's instructions and requirements of ICC-ES Evaluation Report.
- B. Apply to minimum 3/8 inch thickness from front of weather barrier to face of base coat.
- C. Level surface to acceptable plane.
- D. Float surface to provide bond with finish coat.

\*\*\*\* OR \*\*\*\*

- E. Apply desired texture or pattern by doubling back and applying additional base coat material as soon as first coat is firm enough to prevent damage.
- F. Work from wet edges to apply unbroken area in one continuous operation to eliminate joints.

- G. Finish surfaces true to plane, plumb and with neat, sharp corners and intersections.
- H. Work in panels to nearest natural break formed by intersections, corners, trim, and accessories.
- I. Tool base coat to V-joint at trim, grounds and accessories.

### 3.6 APPLICATION OF PORTLAND CEMENT FINISH COAT

- A. Apply finish coat in accordance with manufacturer's instructions.
- B. Apply to minimum thickness recommended by manufacturer; using sufficient trowel pressure or spray velocity to bond finish coat to base coat.
- C. Apply in number of coats required to produce consistent finish.
- D. Provide [fine spray] [medium spray] [heavy spray] [smooth trowel] [\_\_\_\_\_] texture to match approved mockup.
- E. Work from wet edges to apply unbroken area in one continuous operation to eliminate joints.
- F. Finish surfaces true to plane, plumb and with neat, sharp corners and intersections.
- G. Work in panels to nearest natural break formed by intersections, corners, trim, and accessories.
- H. Apply fog coat by spray in number of coats required to produce consistent finish matching approved mockup.

### 3.7 APPLICATION OF [ACRYLIC] [ELASTOMERIC] FINISH COAT

- A. Apply primer and finish coat in accordance with manufacturer's instructions.
- B. Apply in number of coats required to produce consistent finish.
- C. Provide [fine spray] [medium spray] [heavy spray] [rolled] [\_\_\_\_\_] texture to match approved mockup.
- D. Work from wet edges to apply unbroken area in one continuous operation to eliminate joints.
- E. Finish surfaces true to plane, plumb and with neat, sharp corners and intersections.
- F. Work in panels to nearest natural break formed by intersections, corners, trim, and accessories.

### 3.8 CURING

- A. Moist cure Portland cement base coat [and finish coat] in accordance with requirements of ICC-ES Evaluation Report.

3.9 ADJUSTING

- A. Repair or replace damaged, discolored, and defective work.
- B. Blend patched areas to surrounding surfaces.

3.10 CLEANING

- A. Clean stucco from trim and accessories before initial set occurs.

END OF SECTION

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