

THE STUCCO INSTITUTE

Stucco Information by and for Stucco Applicators
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Inspecting New Stucco and Lath Installations for Code Compliance

Florida Stucco Application
and Repair Newsletter
02/10/2020

Developed for Code Climate Zones 1, 2 and 3
Applicable for all Regions

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INTRODUCTION TO STUCCO INSPECTIONS:

Inspectors are faced with many difficult challenges, none more than in-progress metal lath and stucco application inspections for code compliance.

The code references the ASTM C926 for the application of stucco and the ASTM C1063 for the application of the metal lath (we will cover that later - assume for now it does). These are two small documents with prescriptive requirements that are easily read and understood. WRONG! Nothing further from the truth. They are extremely complex because they rely upon a deep understanding of trade applicators or specialists to understand, modify and apply the provisions appropriately.

Directly Applied To Solid Bases

Stucco directly applied to cement based walls (Concrete Masonry Units; a/k/a cement block) or poured concrete, etc... is

simple to inspect; Is the stucco system to be finished with a thin coat of COLORED cement plaster (no paint or coating)? If so, then a 3/8" base coat to ensure even suction (and therefore even color curing and appearance) is necessary. So, the standard rightfully says; 3/8 cement base coat (cured) followed by 1/8" cement finish coat. Total thickness = $\approx 1/2$ ".

If however the stucco it is going to painted, then apply a skim coat (as defined by the standard - as thin or thick as you desire) for whatever cosmetic appearance you want - then apply the coating (paint) to the required mil thickness. Easy Peasy - fully code compliant as it always has been.

Applied to Metal Lath

Hey, this will be easy - we had a training session and were provided with an inspection sheet that outlines simple requirements such as checking to ensure lath fasteners are 7 inches on-center vertically

on each stud and not randomly fastened between them. **WRONG.** That will most likely violate the code and may cause the system to fail.

Wait, What? Yes, the standard prescribes that pattern, and yes, you can use it if you were in a windzone less than Vult of 115 mph. The standard was developed for mid-west arid applications with straight line wind speeds of 90 mph. In higher windzones, that pattern will fail and the assembly will crack between the studs. Lath **MUST** be attached to resist wind loads imposed upon the wall! (Refer to our publication "**Safe Attachment Tables for Metal Lath**")

Wait a minute! (1) Why am I hearing about this now and not in one of those training lectures or one of those checklist forms? (2) Why doesn't the code state that? (3) Why doesn't the ASTM standard allow for modification in high wind regions?

Answers:

(1) Because the person doing the training was either simply reciting the ASTM Standards as written without the required in-depth knowledge needed to interpret and understand them or they were a self proclaimed "expert" that may have tens of thousands of income dollars and possibly their reputation at risk if their "interpretation" becomes exposed as inaccurate.

Some "consultants" have failed to properly comprehend these complicated issues (relying upon the simple text of the standards without modifications) and have issued inaccurate, incomplete, or misleading reports. So, for them, better off to keep promoting the literal text (without the intended and needed specialty knowledge) as the "Gospel" and stay in safe harborage.

What better way than to substantiate your published positions than to convince Building Inspectors of your "correctness" by reciting the standard verbatim without disclosing the whole subject matter and all its code provided variables, positions and provisions.

These things you are being made aware of are understood by hundreds of other "real" experts, but they are not shouting on the front-end like these partially informed "experts" pretending to be stucco applicators, consultants or trainers.

- (2) The code contains modifying provisions in several places. Most haven't looked since they were comfortable with the simple prescriptive provisions taught as applicable.
- (3) The ASTM provides a critical provision for needed modifications in its provisions by stating "**unless otherwise specified**". Odds are, you weren't told

about that provision and its many applications.

And we are just on fasteners. Wait until we cover the many other issues! Fasteners are an easy topic - there are historical provisions in the HVHZ for compliance in High Wind Regions and the **“Safe Attachment Tables for Metal Lath”** which were derived from code approved testing. These subjects are discussed in the Articles and Newsletters at www.stuccoinstitute.com. We will stay with summaries here for brevity.

NECESSARY UNDERSTANDINGS:

(1) The ASTM Document titles tell you a lot:

C926 - Standard Specification for the **Application** of Portland Cement Plaster

and

C1063 - Standard Specification for **Installation** of Lathing and Furring to Receive Interior and Exterior Portland Cement Plaster.

These documents were developed by actual trained applicators and installers to be used in “real time” in the field by applicators and installers. They were never “design specifications” for Architects or Engineers. Actually, they were never intended to be a code referenced document at all. However, when originally included in the code **for specific reasons** (more on this in other publications), all under-

House 1. Ready for Lath and Colored Stucco.



OSB panels are for seismic resistance. 2.5 Metal lath will be installed over open framed studs.

House 2. Sheathed with EPS board. Covered with Stucco Netting. Colored Stucco Next.



Photo courtesy of Eric Kuritzky - EPS board over open framing. “Stucco Netting Lath”

stood their application and intent. That knowledge is now largely lost when design professionals read and apply the provisions without the requisite field knowledge.

2. The standards are written for “open” framing or open framing covered with non-structural sheathing such as; styrofoam, asphalt impregnated sheathing, homosote, thermo ply, etc...

There is a HUGE difference between “sheathing” and a “structural panel”. A structural panel can serve as sheathing but sheathing **cannot** serve as a structural panel - the gate does not swing both ways.

In fact, to keep these from being used

interchangeably, the code defines a “Wood structural panel” (as those meeting specific standards and requirements) and leaves the term “sheathing” undefined according to its common usage; Sheathing; “the first covering of boards or of waterproof material on the outside wall of a frame house or on a timber roof”....

When the standards were developed (prior to ASTM involvement) they were written (and still are) for open framing and/or non-structural sheathing.

Refer to House 1.

Do you know why the standard calls for nails to be spaced 7” into the vertical framing members? Where else would you

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House 2 -- Sheathed with EPS board. Covered with Stucco Netting. Colored Stucco Next.



Photo courtesy of Eric Kuritzky - EPS board over open framing. “Stucco Netting Lath”

put them, in the air between the studs?

Do you know why the standard says side laps of the lath shall be wire tied between framing members? If you did not tie the laps, your trowel full of mud (when pressing into the wire) would cause the lap of the lath to separate between the open framing causing a mess. The lath would have a different thickness by way of a back bulge of mud at the lap line. This would prevent even curing and cause the colored finish (discussed later) to be darker at each horizontal lath lap.

Do you know why the standard says that where the ends of the lath occur between framing members the ends shall be laced with Tie Wire? Look at it,

Applying a trowel full of mud would push the lath end lap open and the mud would pile into the open cavity! You have to tie or lace end laps that meet between studs on open framing. The same is true (to a lesser degree) if you are using non structural sheathing.

But what does this have to do with stucco over structural panels? **Absolutely Nothing!** The authors of these standards did not contemplate structural panels. Why would they? With a structural panel, the whole wall becomes the framing member. We don't require roofing contractors to lengthen their nails and only attach the shingles into the top truss chords. The roof dry-in essentially serves

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House 2 -- Sheathed with EPS board. Covered with Stucco Netting. . Colored Stucco Next.



Photo courtesy of Eric Kuritzky - EPS board over open framing. "Stucco Netting a/k/a "chicken wire"

the same purpose as the wall dry-in.

Remember, this application standard was originally written by professional plasterers - for professional plasterers working in the framework of the standard's conditions. It doesn't contain extra statements or explanations that would be common knowledge to a professional plasterer. The standard assumes the level of understanding that an experienced lather/plasterer has learned over decades of experience at the mud-board.

Now look at house Number 2

The EPS foam boards are installed across the face of the open framing (continuous insulation system).

House 2 -- Sheathed with EPS board. Covered with Stucco Netting. Colored Stucco Next.



Photo courtesy of Eric Kuritzky - EPS board over open framing. "Stucco Netting Lath"

Do you know why the standard says "you must add the thickness of the sheathing to the fastener length"?

Because the fasteners must penetrate into a stud 3/4" (standard withdrawal penetration depth for wood studs). So, if the EPS was 3/4" thick, the fasteners would not even touch the anchoring stud! Makes sense.

Now what would that have to do for fasteners driven into a structural panel with withdrawal values equal to or exceeding the withdrawal values of wood studs?

Nothing!

The National Design Specification (NDS) publishes withdrawal values for structural panels or they can be obtained from the structural panel manufacturer (see stucco institute's bulletin - OSB as a Stucco Base).

On lower sloped roofs, the highest suction loads are at the corner and edge of the roof diaphragm, and as stated before, we don't make the roofer add the sheathing thickness to the fastener length and only fasten the shingles to the trusses - Of course not, that would be silly. Now you're getting it.

Refer to House #3

Our construction is different. If windows and flashings were in place, technically, all you would need to do is paint the wood to obtain the C/O! See the difference? The only code requirement is for the protection of the wood and the interstitial framing cavity from moisture. This can be accomplished by painting (and sealing) the wood, covering it with aluminum siding, shakes, lap siding, stucco or other cladding material. The concrete masonry units (blocks) can remain as is since there is no code requirement to paint, coat or seal them.

If used as a cladding, what is the reason for code referenced stucco? **First**; It as-

sumes its used for its structural shear resistance (from Table 2306.3(3)) or **Second**; it will be used for fire resistance from Table 722.2.1.4(2) or **Third**; its being used as a prescriptive wall covering over open framing or open framing covered with non-structural sheathing pursuant to Table 1405.2. which can only be used where Vult is less than 115 mph.

So, if the cement plaster is **only** being installed as a cladding, it must comply with the wall performance requirements of Section 1403.2 Weather protection.

“Exterior walls shall provide the building with a weather-resistant exterior wall envelope The exterior wall envelope shall be designed and constructed

House #3



in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the **exterior veneer**, as described in Section 1404.2, and a means for draining **water that enters** the assembly to the exterior. Exceptions:.....”

The purpose of the Face Barrier System is to wholly fulfill the requirements of the first sentence: “Exterior walls shall provide the building with a weather-resistant exterior wall envelope”.

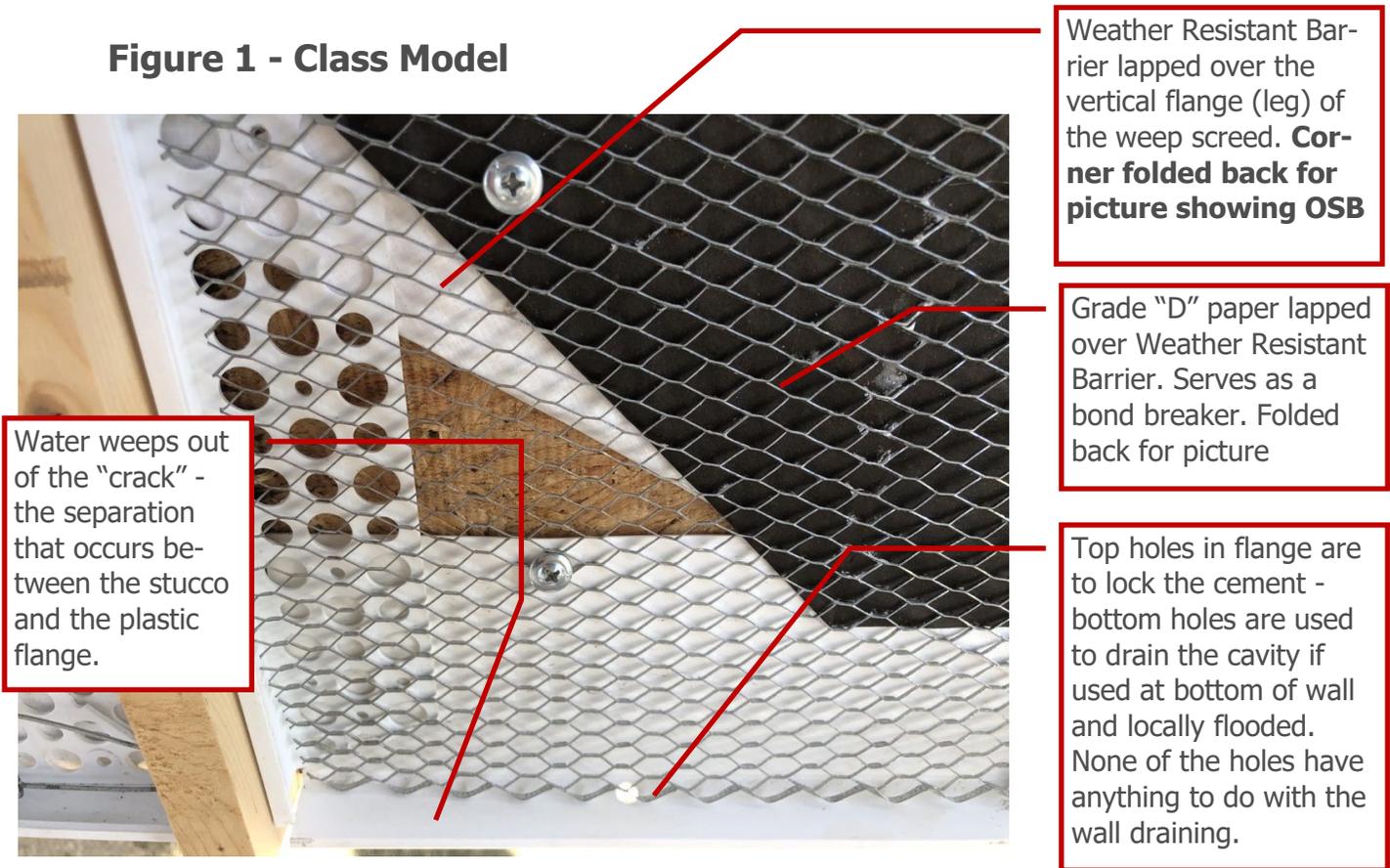
So, the requirement for the cladding is to protect the wood substrate by drainage or face barrier (which is be the

same coating and sealant system you are allowed to put over the wood), but now is moved out over the to the face of the cement plaster assembly. The code does not care how you protect the wood, or where the protection is placed, it only requires that it be protected. But that’s a whole other discussion. So, for right now, let’s continue assuming you have a drain plane system per the ASTM documents.

We are using 1 layer of house wrap covered by one layer of paperbacked lath. (as a bond breaker)

Review the drainage concepts in **Figure 1:**

Figure 1 - Class Model



Water weeps out of the “crack” - the separation that occurs between the stucco and the plastic flange.

Weather Resistant Barrier lapped over the vertical flange (leg) of the weep screed. **Corner folded back for picture showing OSB**

Grade “D” paper lapped over Weather Resistant Barrier. Serves as a bond breaker. Folded back for picture

Top holes in flange are to lock the cement - bottom holes are used to drain the cavity if used at bottom of wall and locally flooded. None of the holes have anything to do with the wall draining.

Now, Refer to **Figure 2**

The ASTM standards are written for a 3 coat system over metal lath **with a finished color coat of cement plaster:**

1. 3/8" Scratch Coat (scarified)
2. 3/8" Brown Coat (applied over the scratch coat while still "green" in order to obtain a monolithic bond between the two application coats.

Note the "float" marks from wet densifi-

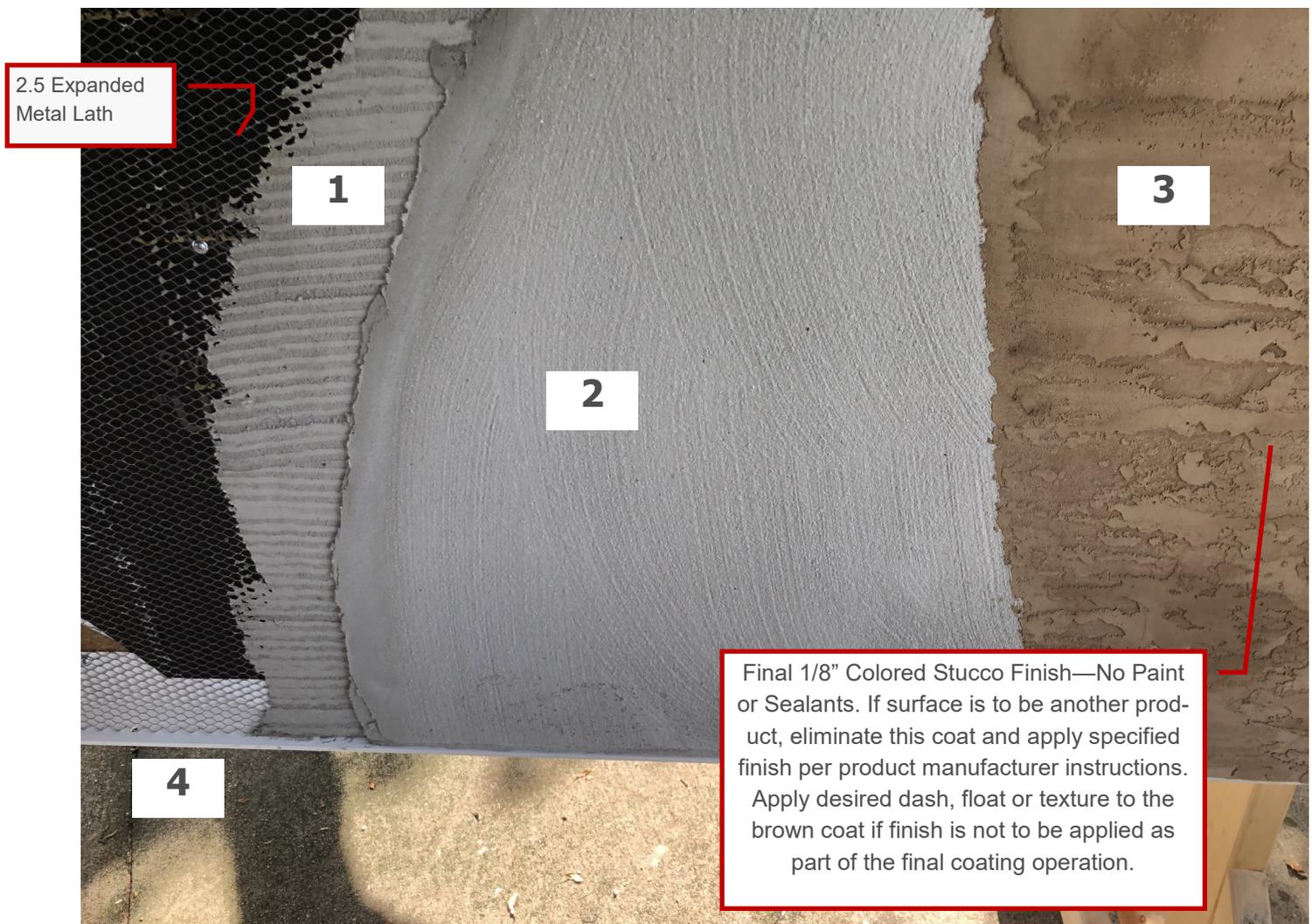
cation. This process cannot be omitted. It recharges the wall with needed water for hydration while providing densification of the plastic mass.

3. 1/8" Color Coat applied after the base coat has cured to provided uniform suction and drying of the color coat.

The color coat can be mixed with White cement for pastel colors or Gray for darker hues or a combination. Shown here is amber brown.

4. 3/4" Weep Screed

Figure 2 - Class Model



Refer to Figure 3

This is how the system “weeps” (it never “drains” in the common sense). The Colored Cement Plaster System (Stucco) does not bond to the plastic accessory’s drain flange. It weeps through the “crack”. Prior to the invention of Plastic Accessories, we had to wax metal flanges to ensure crack separation.

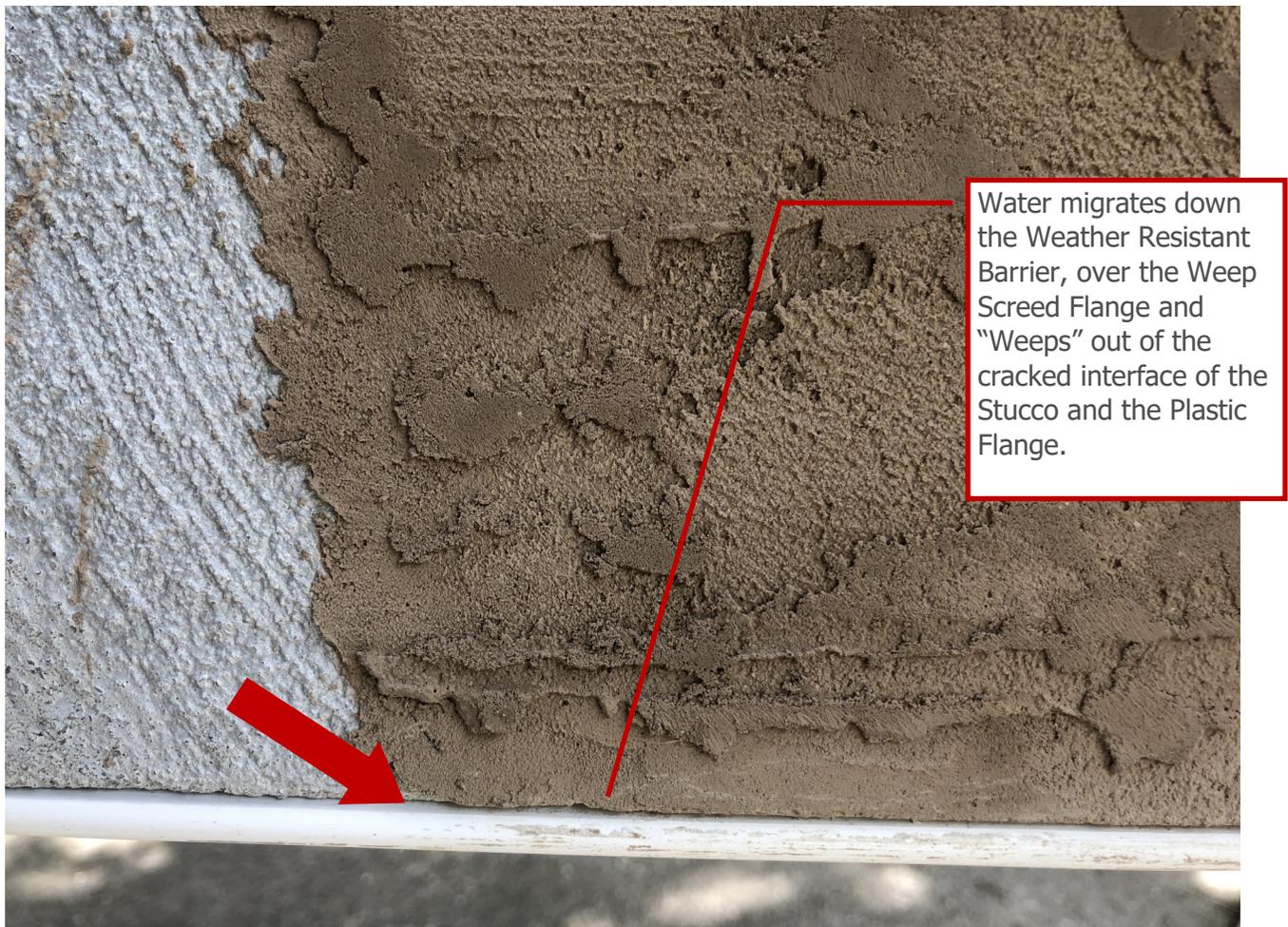
So, what if you painted this interface? Well the system is NOT meant to be painted - But what if I did? - Well it

wouldn’t weep and you wouldn’t have a drain plane system.....

Hey wait, What? Hold on.... Now you are getting it.... This system is specific. It is a 3 coat, Colored Stucco System that depends upon a weeping outlet at the separation of the stucco material from the accessory’s flange. It “weeps”.

If all of these elements are not employed, then it is an altered system that is modified from the ASTM standard using the standard’s “**unless otherwise specified**” provision.

Figure 3 - Class Model



Can you use a weep screed and paint the assembly also?

Yes, but you need to use a two piece joint as shown in **Figure 4**. Just remember, you cannot ever paint the joint! Half-measured attempts have been made to "tape" or "mask off" the intersection - but the efficacy of these measures have not been successful - nor are they aesthetically pleasing.

So, while we are discussing it, you are probably saying; "the jobs I see don't have the 3rd coat of colored stucco, they are all painted". And correct you would be!

So, if the 3rd colored stucco coat is not used, do you still have to put a 3rd cement coat on before you paint?

No. As previously noted in the **Figure 2** callout, the standard provides that if the finish colored coat is eliminated, you deduct the 1/8" color coat and apply the specified material according to the manufacturer's specification.

So, the standard does not mandate a 7/8" system?

Yes IF you are applying a 3 coat colored stucco assembly over a drain plane system as the standard is written. **NO IF** you are not using the colored stucco coat. The system is then 3/4" thick. The specifier may need to use the "unless otherwise specified" provision to modify other system components to meet the needs of your specific regional or project requirements.

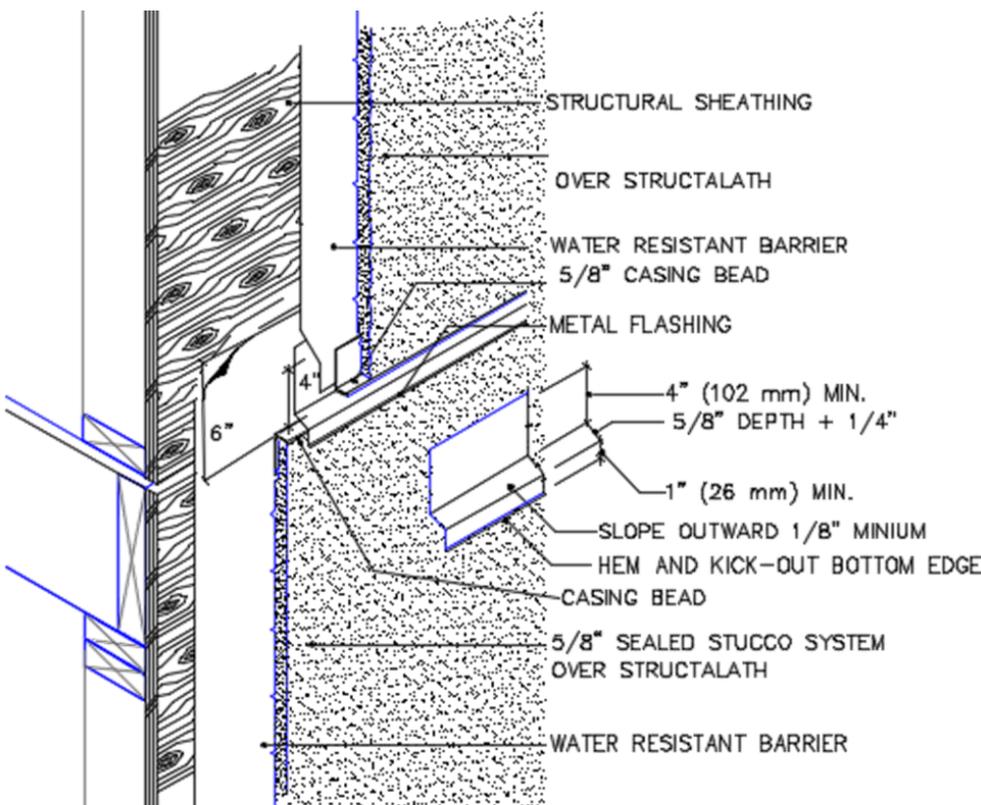


Figure 4

If you are going to use a different finish material such as a synthetic, elastomeric, acrylic or other coating system, you apply the 3/8" scratch and 3/8" brown coat to the nominal 3/4" thickness and then apply the specified finish coat to the manufacturer's thickness requirements.

If the finish material is to be textured, stippled, mottled, etc... it can be done at the time of its application, or, the dashing, texturing, stippling etc.. can be applied to the brown coat after densification.

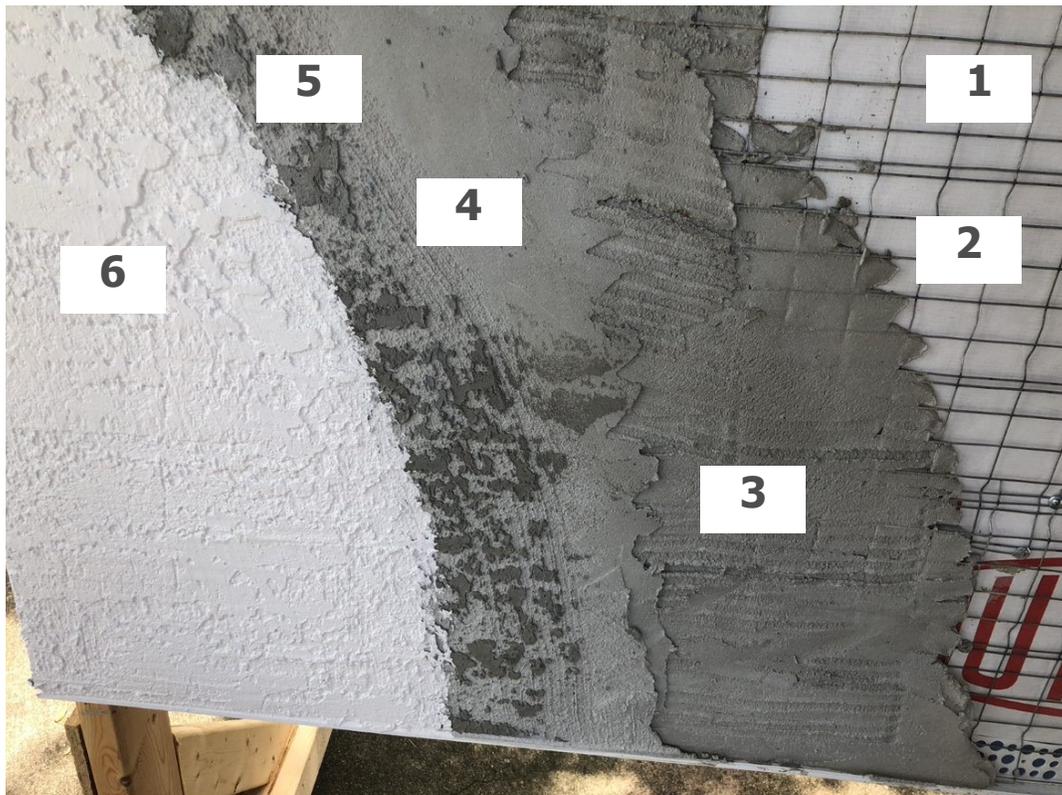
Either way, the brown coat must cure before the application of the specified final coating, finish or surfacing.

Refer to Figure 5: Face Barrier System

- 1 Synthetic type weather barrier
2. Wire lath or metal lath
3. 3/8" Scratch Coat
4. 3/8" Brown Coat (densified)
5. Application of light dashed texture
6. Application of 14 mil coating after curing - High quality sealants not shown.

This is the predominant stucco system used successfully in Florida since the advent of modern stucco almost a century ago. Note there is no water behind the system to "weep" out. Water and Vapor are rejected at the system's face.

Figure 5 - Face Barrier Stucco System (Defined in ASTM 2128)



QUESTIONS AND ANSWERS

1. Are control joints required by the ASTM?

A. Depends. The standard itself provides for them when using 3 coat, colored stucco application system. The joints serve as "screeds" to aid in uniform thickness and to break large wall areas into "panels" to control suction so the final finish coat dries as uniformly as possible and to aid in color coat application processes.

Additionally, the plasterers need a stopping point for the colored finish coat. Blending into a coat that was applied the previous day will cause a wall to have color differences, so, stopping at one side of a vertical joint and re-starting on the other side will hide unsightly coloring blends. Simply put, a slight difference in color on either side of the joint will not be noticed, but if the two coats were "blended" together with a cold joint, it would be noticeable.

However, if the system is designed otherwise, such as a face barrier system, the color coat is eliminated. Therefore the control joints may be unnecessary and eliminated using the **"unless otherwise specified"** provision provided by the ASTM standard as an allowable application. So, follow the plans or specifiers intent. If unclear, ask for intent.

2. Control Joints "control" or prevent cracking don't they?

A. No. Not as stated. Conditions found in assemblies such as metal lath suspended ceilings and some others might allow some two sided expansion / contraction in which they might provide a slight measure of crack movement control - but in conventional light frame construction wall assemblies - no.

Actually until recently there was never any in-situ or simulated wall testing that measured their performance. Recently, two independent full scale wall testing models with numerous and various control installations were constructed, tested and monitored. Independent testing was performed in Houston and Las Vegas by two separate associations.

Although experts argue the miniscule details of the miniscule crack patterns, there was no significant difference in cracking patterns regardless of how the joints were installed; staples, nails ties, etc..., whether the flanges were attached on one side with fasteners or ties, whether the flanges were in front of the lath or back, whether the lath was continuous or discontinuous behind the joints or whether there were NO control joints in the panel at all.

Note that these were purely for the benefit of Crack analysis and did not factor the application or aesthetics of a colored finish coat application process.

For residential walls, usually less than 10 feet in height and less than 40 feet in length, many stucco experts (and most in Florida), do not advocate their use - taking them out by using the "unless otherwise specified" provision in the standard. When so doing, their absence is fully code compliant. Some state codes and associations actually caution you when using them on residential homes.

The reason is simple; with limited length and height walls, there are sufficient screed points at the soffit and the base of the wall to assure uniform thickness. Furthermore, most all walls can be applied from a single or 1/2 batch of colored cement - and that any wall started by the plasterer can be easily finished to a corner for a stopping point if needed. There is simply no need for them in most residential or light commercial projects.

If you are using a face barrier coating in lieu of a colored cement finish, the non need for these is even greater. In Florida's environment we have successfully eliminated these (fully code compliant) by way of the "unless otherwise specified" provision within the ASTM standard) without fault or flaw.

Miami-Dade and Broward stucco code provisions have never contained a requirement for control joints at all. With no failures or cracking problems for many, many decades.

Control Joints can be installed successfully but their installation and stucco flange embedment during the application process is critical. If not done right from installation through application the results can be unfavorable, especially in this region when using a face barrier system on residential construction. So why do it if its not necessary - and its not necessary or needed on almost all residential homes.

3. If control joints are to be used what is their spacing requirements?

A. For walls, ASTM C1063 states at:

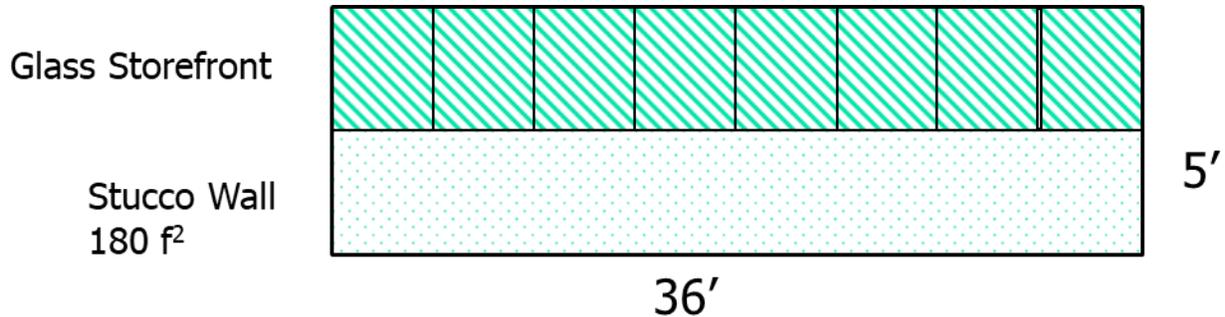
7.11.4.1 Control Joints—Control Joints shall be installed in walls to delineate areas not more than 144 ft²...

7.11.4.2 The distance between control joints shall not exceed 18 ft (5.5m) in either direction or a length-to-width ratio of 2-1/2 to 1

This is a three part conditional analysis to determine their placement starting with the requirement for wall areas delineated into 144 f² sections. So, none

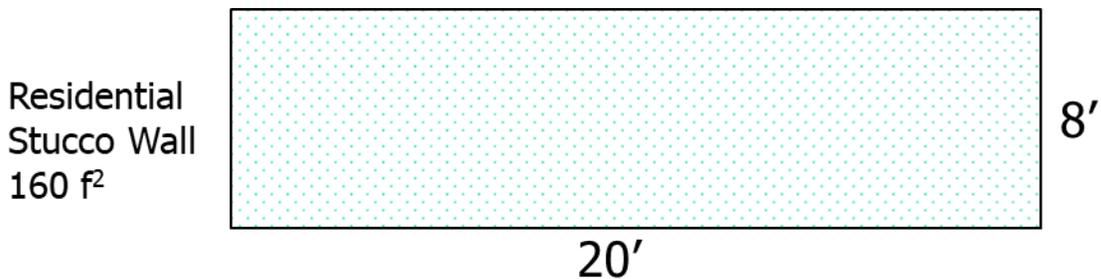
are required if the area is less. If the wall area exceeds 144 f², apply all three provisions... Refer to **Figures 6 - 10** for examples of common layouts.

Figure 6



Section	Requirement	Action
7.11.4.1	Area greater than 144 square feet	$180/144=1.25$ panels. So 1 Joint at 28.8' or midpoint at 18' but both will violate 7.11.4.2 options 1 and 2
7.11.4.2 (option 1)	Place Joints at intervals not exceeding 18'	18' O/C will place one at midpoint. But this will exceed the 2-1/2 to 1 restriction ($18 / 5 = 3.6$ to 1) so,
7.11.4.2 (option 2)	<u>or</u> at a ratio not to exceed 2.5 to 1	$36/2.5 = 14.4'$ O/C maximum. Use 2 Joints; $14.4 / 5 = 2.88$ to 1 (not permitted) So, $36 / 3$ Joints = 12' for even spacing; $12 / 5 = 2.4$ to 1 OK at 12' O/C

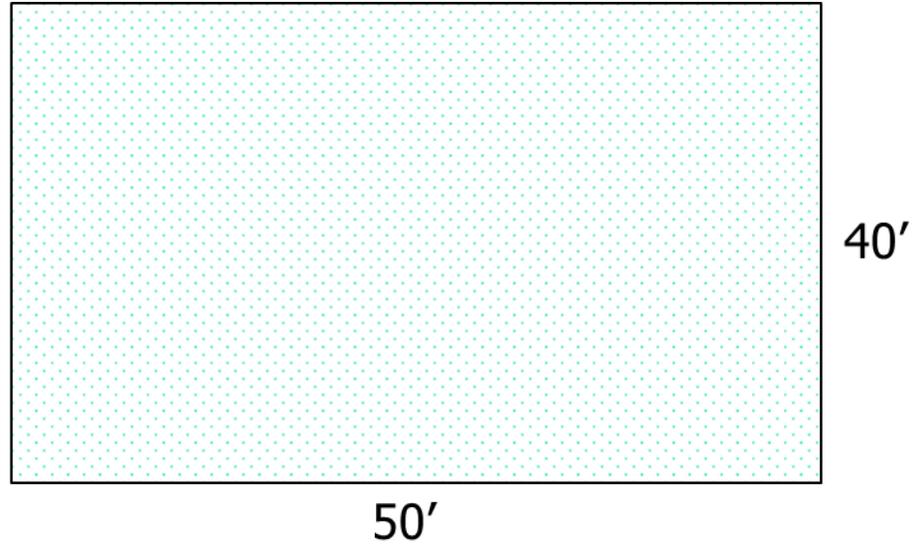
Figure 7



Section	Requirement	Action
7.11.4.1	Area greater than 144 square feet	$160/144=1.1$ panels. So 1 joint at 17.8' (or center at 10')
7.11.4.2 (option 1)	Place Joints at intervals not exceeding 18'	No violation of the 18' rule with either position (10' or 17.8') - OK
7.11.4.2 (option 2)	<u>or</u> at a ratio not to exceed 2.5 to 1	$17.8 / 8 = 2.22$ or $10 / 8 = 1.2$ Neither exceed 2.5 to 1 - OK for either position

Figure 8

Stucco Wall
2000 f²



Section	Requirement	Action
7.11.4.1	Area greater than 144 square feet	$2000 / 144 = 13.8$ panels but they will be spaced vertical and horizontal
7.11.4.2 (option 1)	Place Joints at intervals not exceeding 18'	$50 / 18 = 2.7$ or 3 panels. $50 / 3 = 16.67'$ o/c even spacing for the width. Determine height panel spacing; $40 / 18 = 2.2$ or 3 panels. $40 / 3 = 13.33$ feet vertical spacing. Check $16.67 \times 13.33 = 222.21$ sf. So NOT Permitted to be over 144 sf. So, $144 \text{ sf} / 16.67 = 8.63'$ maximum vertical spacing placement to ensure the 144 sf maximum sf. So use equal spacing to make 5 - 8' panels ($40 / 8 = 5$) Check last condition:
7.11.4.2 (option 2)	<u>or</u> at a ratio not to exceed 2.5 to 1	$16.67' / 8.00' = 2.08$ to 1 - OK

Resolved: Space vertical joints unbroken at 16'-8" O/C—and intersect Horizontal joints at 8' O/C - (5 equal panels)

Remember these rules were meant to applied to wall sections. Beams, columns, and other building components are **not** normally considered subject to the provisions.

7.11.4.4 States that wall or partition height door frames shall be considered as control joints. Accordingly, they reset the calculations.

Refer to **Figure 9**. Although the wall is 36 feet long, the full height door frame serves as the control joint eliminating the need for any joint.

Also remember that we are applying these provisions to residential examples when in fact, most were developed for commercial applications that have duct penetrations, hoods, vents, curtain wall and other penetrations that may be of partition height. Additionally, on commercial and industrial

applications, many of these instances are indoors or undercover and may serve as a fire partition or security wall.

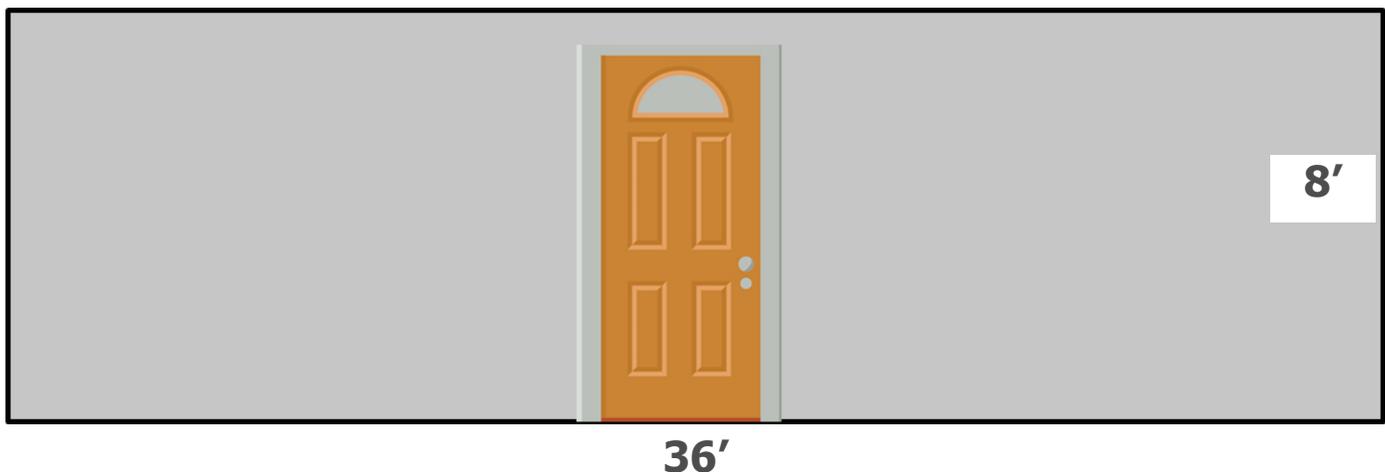
Less than **full height** walls and small wall segments such as gable trusses and truss/wall intersections are usually not considered by design professionals. Refer to **Figure 10** below. Arrowed sections usually are not usually factored for control joint placement and gable ends are not normally considered "walls" - it's the specifier's discretion and interpretation.

Figure 10



Figure 9

3068 Front Door



4. Are weep screeds required by the code or standards?

- A. Well that depends upon a lot of factors. The ASTM standard requires them at the base of each framed WALL. (Note emphasis on "wall").

The reason is simple; the standard is based upon the application of a 3 coat colored stucco finish system. As such, these systems pass bulk water through their assembly and through cracks in addition to allowing vapor to pass through fairly unfettered to the weather resistant barrier concealed behind the assembly protecting the wood framing from moisture. These systems dry rapidly to the exterior when the sun returns. Accordingly, they work best in more arid regions.

(Side note: In hot humid regions, the presence of this vapor behind the stucco system is extremely problematic. Radiant heat loss to the dark night sky causes the wall cladding to quickly fall below the vapor's condensing temperature. When painted, the wall doesn't effectively dry to the exterior. Further discussions on these, and other factors, can be found at stuccoinstitute.com — back to our discussion....)

Accordingly, with 3 coat colored finish

systems, there needs to be a mechanism to allow moisture to weep out at the bottom of the wall to the atmosphere. So, a weep screed is necessary and employed at the base of the wall. The junction of the colored stucco and the weep screed's flange cannot be painted, sealed or otherwise inhibited. The "crack" that weeps moisture must be preserved and protected.

But, if the 1/8" colored cement plaster (stucco) coat is eliminated (allowed by the standard) and substituted with a different waterproof coating such as a synthetic, acrylic or other specialty coating that prevents the passage of moisture, bridging cracks, sealing openings and inhibiting vapor transmission, then the weep becomes unnecessary. It may still be used as a "screed" but serves no other function.

- B. So, if the specified system is a 3 coat stucco with the 3rd coat being a colored stucco application pursuant to the ASTM C-926 and C-1063, then **YES**, the weep screed must be there as a drainage weep...
But, if the system is a 2 coat stucco system with the 3rd coat being a waterproof coating and, that coating is installed as a "face barrier" (as defined in the ASTM Standards) - then **NO**. You can use a weep screed, a casing stop, or none at all. You can simply lap the wire over the masonry and apply

with an unbroken face as we did (and still do) from the beginning of the plastering profession. The “unless otherwise specification” allows these time-tested and necessary variations. See “35 year old stucco system performing perfectly” (without weep screeds, control joints or corner beads) newsletter at www.stuccoinstitute.com

Figures 11 through 16 show a few FULLY code compliant installations performing perfectly without vertical or horizontal control joints or weep screeds as indicated by the arrows and notes.

Figure 11



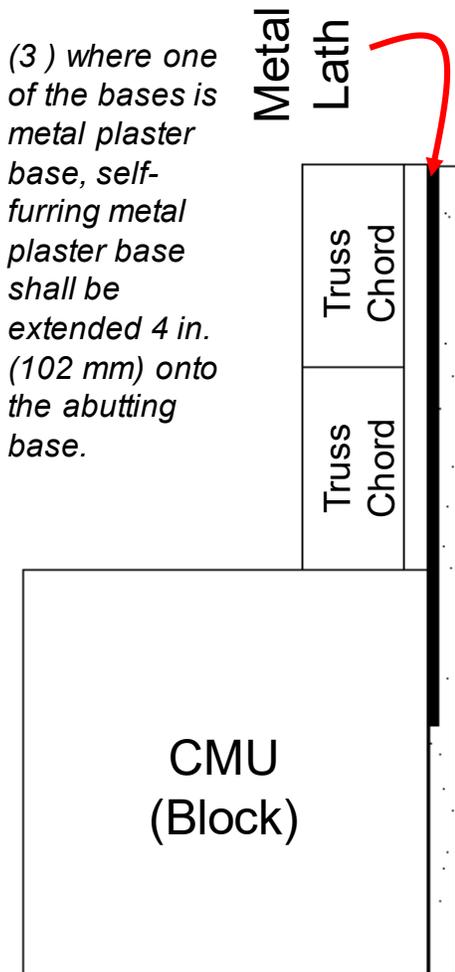
Here are a few more FULLY code compliant installations **without** control joints or weep screeds. Red is where weep screeds are not in place, and Blue is where control joints are not in place. They are not in place because they are not needed and would most likely cause water intrusion issues. There are hundreds of thousands of such installations performing flawlessly since the use of modern stucco systems began many decades ago! All are fully code compliant.

Figure 12



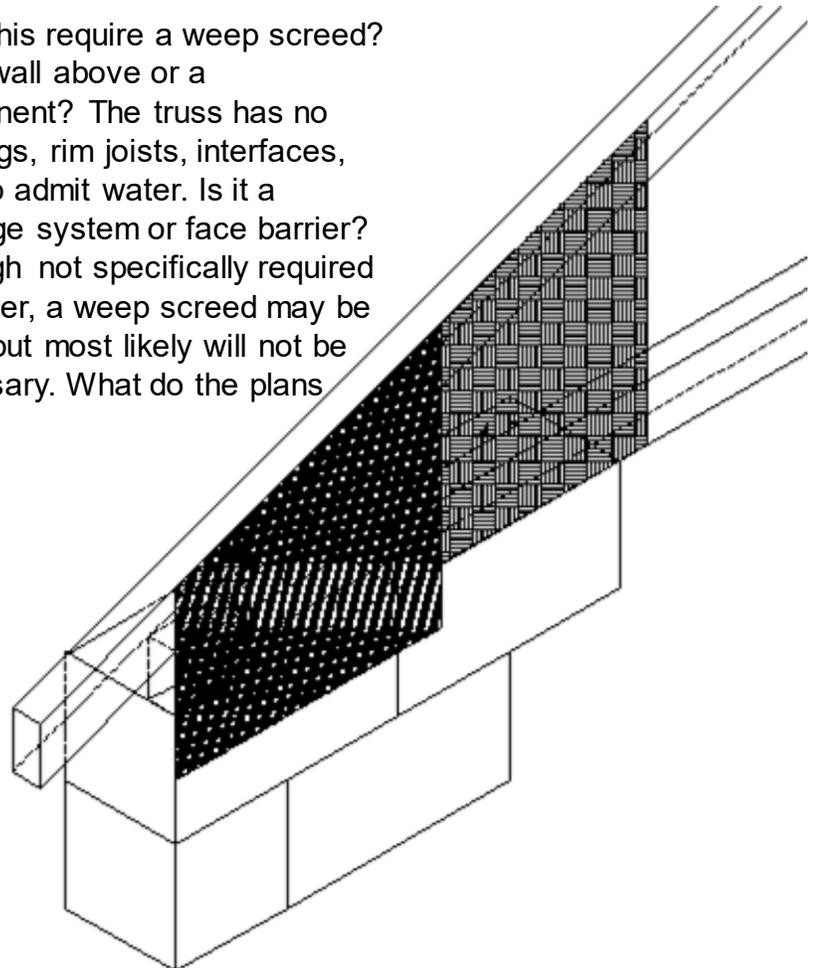
Does the ASTM Standard address bridging or separating dissimilar base wall materials? Yes, at A2.3.3 (3) **Refer to Figure 13** for compliance and **Figure 14** for an Alternate

Figure 13



A2.3.3(3) – Visual for Truss Intersection

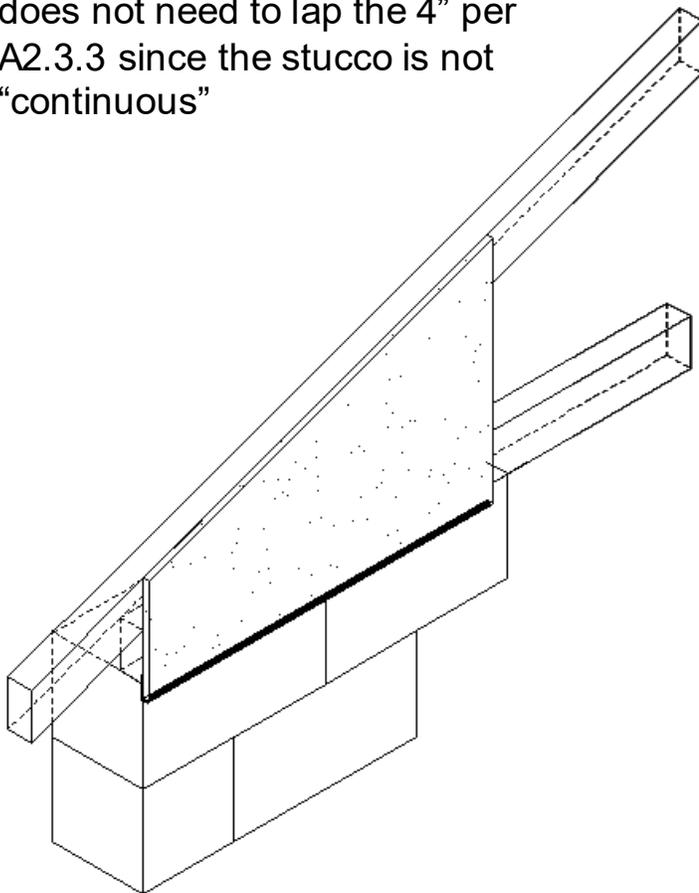
Does this require a weep screed? Is it a wall above or a component? The truss has no openings, rim joists, interfaces, etc...to admit water. Is it a drainage system or face barrier? Although not specifically required for either, a weep screed may be used, but most likely will not be necessary. What do the plans show?



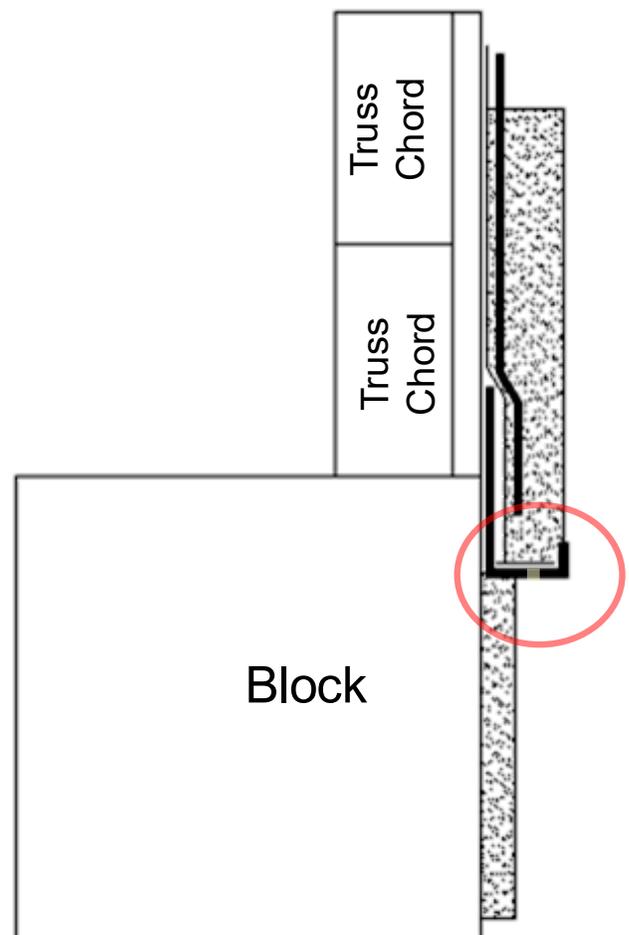
A2.3.3 (3) This is a common Alternate Allowable Detail for compliance. **Refer to Figure 14**

Figure 14

Casing Bead. Attach to block with WRB above lapped into it. Stucco as shown. The metal does not need to lap the 4" per A2.3.3 since the stucco is not "continuous"



Alternate A2.3.3 - Visual



A commercial Building without weep screeds or control joints - Using a Face Barrier System. **Refer to Figure 15**

Figure 15

No control joints, No Weep Screeds, No Problems



Transition; Wood Structural Panel Wall to
Cement Block Wall:

- 1/2" Thick
- No Weep Screed
- No Control Joints
- Plain Ungalvanized Metal Lath
- Vertical Wall with No Overhang
- Salt Environment
- High Wind Region of Florida Coastline
- Commercial Building
- No Leaks
- No Failures
- No Water Vapor Problem
- Standard Exterior Coating Rolled on to Proper Thickness (2 applications in 35 years)
- 35 Years Old
- Pristine Condition – Just Like the Day it was Installed!
- Uses the A2.3.3(3) Provision of the ASTM C1063
- **Refer to Figure 16**

Figure 16 (Excerpt from 35 year old stucco system performing perfectly - www.stuccoinstitute.com)



5. Control Joints and Plaster Hydration

I mention this last, but it must be understood first; even if control joints are being touted as a crack reduction methodology, they only serve during the “Hydration” (initial set) of the cement plaster.

Control joints do not now, nor have ever, been purported to be a crack management or reduction device serving a wall after initial plaster set.

The theory purported is that stresses will collect during the initial hydration (curing) processes due to water losses. The stresses will cumulate and transfer radially until the control joint is reached. The control joint will then serve as a sacrificial fracture point. Here is an excerpt from a John Bucholtz article:

Cracks in Stucco usually not “Shrinkage Cracks”

“Stucco is a brittle (very high modulus of elasticity) material that when encounters stresses – cracks

Because it usually encounters many building stresses, it’s very nature is to crack. So there is no such thing as totally “crack free” stucco in the field.

Hydration does occur, but the composition of the mix; one cement to four sand (1:4) means water represents 7% of the mix while cement is 19% and aggregate 74%

With the water content, the degree of shrinkage is negligible.

Pointing out cracking in a wall that happened post curing and blaming it on the placement of, or lack of, stucco control joints is without merit.”

Refer to White Paper on Control Joints for more Bucholtz articles.

Note that the above statement is for the application of stucco with an 1/8” “colored” cementitious finish.

If a quality High Build Acrylic or similar specialty penetration waterproofing coating (such as UGL Drylok Extreme) is applied in lieu of the 1/8” colored cement finish, the cracking is not seen - the coating bridges the crack along with preventing water or vapor entry.

Respectfully,

Robert Koning