

air barrier  
**abaa**  
association of  
america  
CONFERENCE  
& TRADE SHOW  
APRIL 18-20  
**2017**  
RESTON, VA  
AIR BARRIER EDUCATION TRACKS FOR  
THE CONSTRUCTION INDUSTRY

# The Air Barrier Pre-Installation Meeting

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CDT, CQM, LEED® AP BD+C

*Pepper Construction Company*



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# The Air Barrier Pre-Installation Meeting

## *Course Description*

The air barrier is chosen and specified and the installer has submitted their shop drawings and submittals. Now the contractor must install the product on your specific building. Making sure that the system specified is reviewed thoroughly, shop drawings and submittals are submitted properly and completely, and all the project specific details are understood is the next big task for a successful air barrier installation. We will go over what makes a good pre-installation meeting necessary, informative, and has the ability to verify understanding among all players and adjacent transitions. Using job site photos and drawings to present the information.

# The Air Barrier Pre-Installation Meeting

## *Learning Objectives*

1. Understand what to include in an air barrier submittal and pre-installation meeting.
2. Identify and understand the systems that are to be used, and how they are to be integrated into the project specific details with other building products.
3. Learn how to prevent constructability/compatibility issues prior to construction.
4. Create an action plan for installation for team to follow.





Why do a  
pre-installation  
meeting?

# Now that an air barrier contractor has been chosen...now what?

»»» Submittals

»»» Two Coordination Meetings

»»» Building Envelope with all trades that touch the air barrier

»»» **AIR BARRIER PRE-INSTALLATION MEETING**

»»» Mock-Up (Destructive) with building envelope trades

»»» First Work in-place review

»»» On-going job site review and verification (QC).

# Now that an air barrier contractor has been chosen...now what?

**In order to have a successful Pre-Installation Meeting, we need:**

»»» Submittals  
and

»»» Building Envelope Meeting with all trades that touch the air barrier

**A successful Pre-installation Meeting will produce:**

»»» Clear understanding of expectations

»»» Mock-Up description (Destructive) with building envelope trades

»»» First Work in-place review guidelines

»»» On-going job site review and verification (QC) procedures



# What submittals are needed?

## Submittals

- »»» Job Specific Quality Plan
- »»» Product Data
  - »»» Installation instructions
  - »»» Data sheets of all components in the installation
  - »»» Latest Manufacturer's Technical Bulletins (*project related*)
  - »»» Hot or cold weather requirements (*as needed*)
  - »»» Equipment to be used (*other than by hand*) to verify site logistics
  - »»» Manufacturer & ABAA Certifications
- »»» Job Specific Details (*each location*)
  - »»» Base of wall
  - »»» Parapet or T/Wall
  - »»» Penetration (*before & after*)
  - »»» Building expansion joints
  - »»» Openings (head, sill, & jamb)
  - »»» Transition details
  - »»» Soffit / Overhang
  - »»» Wall Expansion Joints

# Who is needed for a Building Envelope Meeting?

## Design

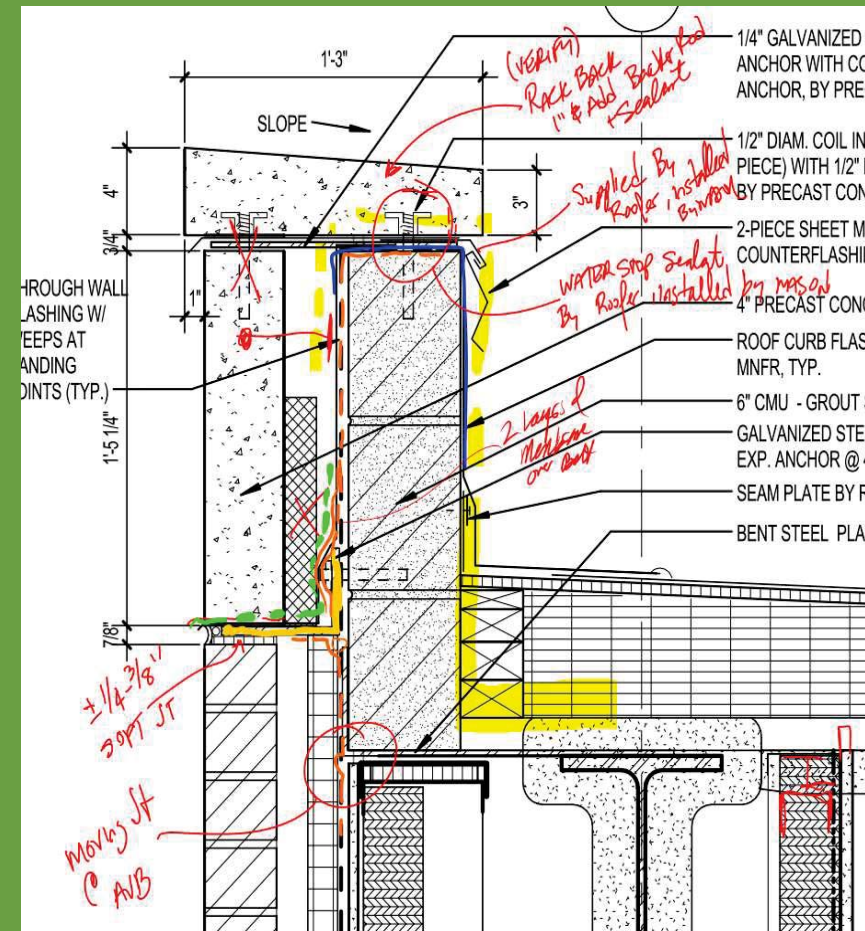
- Architect

## Contractor

- General Contractor
- General Contractor Quality

## Trades

- Concrete
- CFMF / Sheathing (*if used*)
- Masonry
- Air Barrier
- Exterior Skin Contractor (Metal Panel, EIFS, Etc.)
- Curtainwall / Window
- Roofing
- Wood Blocking / General Trades



# Who/What is needed for a Pre-installation Meeting?

- »»» Expectations
- »»» Specifications
- »»» Drawings
- »»» Building Envelope Meeting Minutes
- »»» Subcontractor Scope of Work
- »»» Submittals
- »»» Testing Criteria
- »»» Minimum time allotted 2-3 hours

## Design

- Architect
- Field observer

## Contractor

- General Contractor
- General Contractor Quality
- Sub Contractor – **FOREMAN A MUST**
- Manufacturer(s)

## Owner

- Owner
- Testing Agency



# Quality Assurance

***This is our chance to discuss the Quality expectations by the team to the installers & office...***

***identifying lessons learned prior to the start of installation will help assure a better overall product.***



## expectations

***The air barrier is  
one of the most  
important  
items on any  
building –***

***The installation and process  
must reflect the importance***

you are  
more  
important  
than you  
realize



# No preconceived ideas

*The team must be open to understanding the requirements, sometimes new, for the exact product that is being installed or being installed adjacent too...*

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**"YOU MUST  
UNLEARN  
WHAT YOU  
HAVE  
LEARNED"**

# Quality plan

---



***Ask for a job specific quality plan***

# Contractors Experience

A large, rusted metal pipe is being moved or installed by a crane. The pipe is thick and has a rough, brownish-orange surface. It is being lifted by a yellow crane hook and cable. The background is dark and industrial, with some structural elements visible. The overall scene suggests a heavy construction or industrial setting.

*Has your Team ever installed the specified product before? If so, when?*

Contractor's Lessons learned

What have you  
LEARNED?





**TOP**

**identify Top concerns...**



**DISCUSS INITIAL COMPLEXITIES**





Trade  
Sequencing  
before?



Air Barrier  
Installation



Trade  
Sequencing  
after?

Discuss Sequencing and Potential Conflicts



# ***Review clearances***







# *Review Scope*



*Verify  
Air Barrier  
Materials  
(even other  
trades)*

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# ***Review Specifications***

# ***Review Drawings***





# Review Submittals

*\*Verify Compliance with the specifications*


Product Data  
Installation Instruction  
Tech Bulletins  
Hot/Cold Weather  
Certifications

*Identify missing / incorrect  
elements & proper substitution  
procedures and SUBMIT*

			Fluid/Sheet Applied A/V Barrier Pre-Installation Meeting <small>12-21-2015</small>		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	Review installation instructions & <u>EACH</u> product being used:		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	PRIMER / SURFACE CONDITIONER		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	FLASHING TAPE		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	SHEET MEMBRANE		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	LIQUID FLASHING		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	WINDOW / CORNER FLASHING		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	NEOPRENE SHEET		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	MASTIC		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	REINFORCEMENT FABRIC		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	MEMBRANE		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	TERMINATION SEALANT		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	SEALANT/MASTIC/LIQUID MEMBRANE AT JOINTS		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	SEALANT UNDER MEMBRANE IDENTIFY LOCATION(S)		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	SEALANT AT ROOF (UNDER) AT JOINTS		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	SEALANT AT ETA (UNDER) AT JOINTS		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	OTHER SEALANT (IDENTIFY USE)		

BREAKING GROUND >>>  
Building Quality At Every Level

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SAFETY 

**At this point, there should be a running list of action items to follow up on...**

ITEM #	ISSUE TO DISCUSS / NEED CLARIFICATION	DATE REQUIRED	Responsibility
01	Submit Quality Assurance Plans		Larson
02	Submit How Harmless for Lift USE To Review install		Larson
03	Submit All Products + Installation Instructions for VPD install		Larson
04	Window SUB needs Sample + Info on detail membrane for Sealant tests		Larson / PC
05	Review w/ Architect the detail of Existing Bldg & Virog → will it be SPF? 1, 2, & 4 / ASDI.3		

Make sure that  
**substitutions** are  
reviewed prior to  
submission and  
properly  
submitted...

Try not to change  
between  
manufacturers





# ***Warranty Information and Requirements***



***Certifications Should  
be Required...  
Such as ABAA***

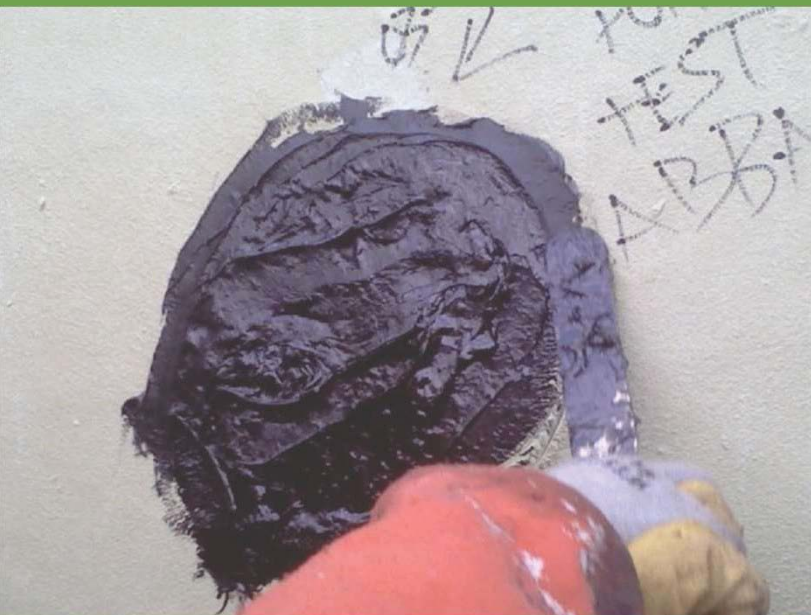
# ***Review Testing Requirements***



***Have Testing company discuss their successes and procedures***



# ***Review Testing Requirements***



***Discuss testing label and correct patching procedures***



# *Review job site logistics and schedule*



<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	What are the minimum application temperatures?		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	Is there a low temperature product?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Verify availability with distributor...
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	Are there special markings for low temperature material?		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	What are the temperature limitations?	Low Temp:	High Temp:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	What are the humidity/damp limitations?	Humidity:	Damp:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	What is the UV exposure and anticipated time?	UV exposure per manufacture:	Discuss actual time during construction:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	DO NOT INSTALL WHEN FOGGY		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	If UV will be an issue...discuss protection.		



# Review Compatibility of all products

Obtain compatibility letters from EACH manufacture of EACH product being installed in the cavity. Obtain sign-offs from both of the products that are adjacent to each other:

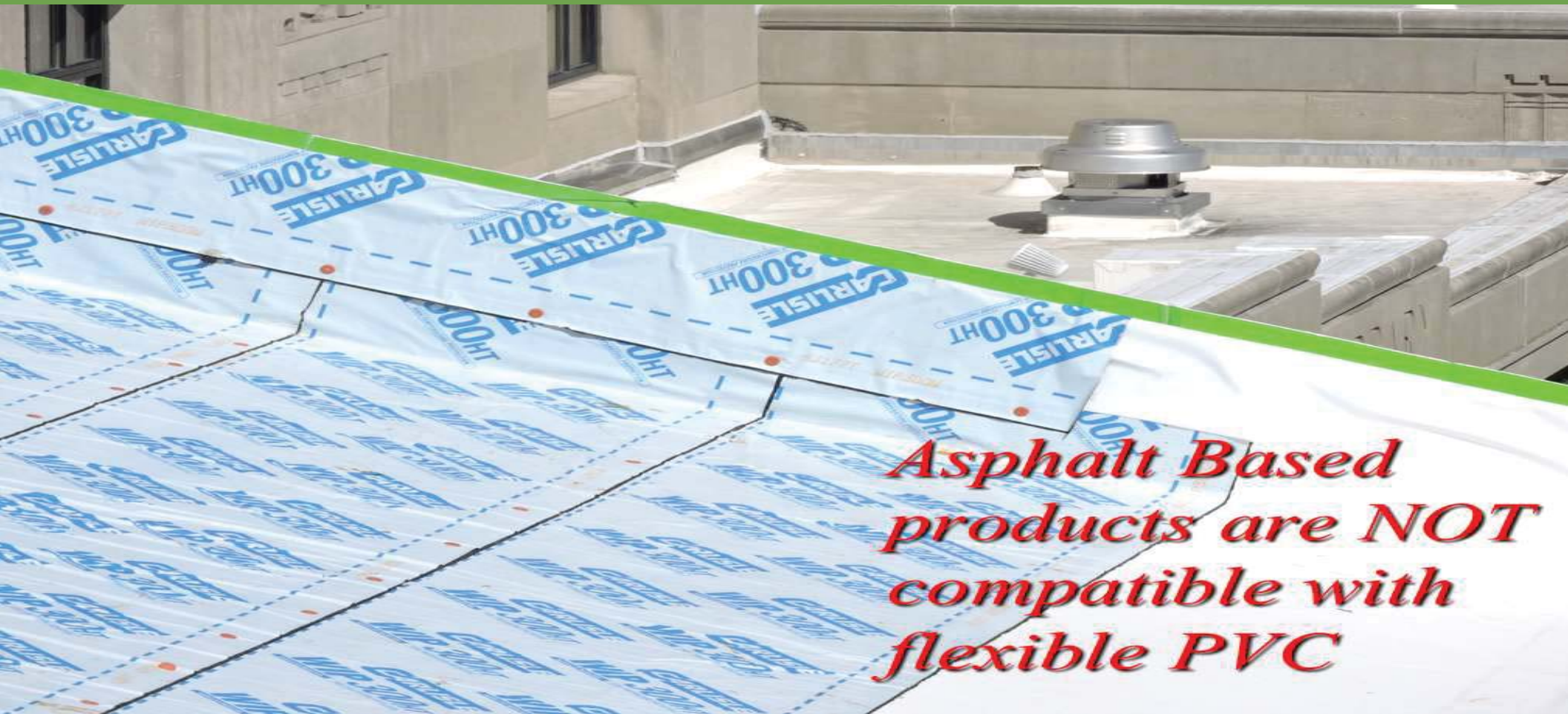
SS Drip Edge & Sealant under drip edge & Masonry	✓	Flashing & Air Barrier	✓
Air Barrier & ETA	✓	Flashing & ETA	✓
Flashing & Insulation	✓	Insulation & Glue(Product: ) & Air Barrier	✓
Flashing & Mastic or Sealant	✓	Insulation & Glue(Product: ) & Flashing	✓
Air Barrier & Mastic or Sealant	✓	Insulation & Glue(Product: ) & ETA	✓
ETA & Air Barrier Mastic or Sealant	✓	ETA & Flashing Mastic or Sealant	✓
Drainage Mat. & Air Barrier Mastic or Air Barrier Sealant	✓	Drainage Mat. & Flashing Mastic or Flashing Sealant	✓
Insulation & Flashing Mastic or Flashing Sealant	✓	Insulation & ETA Mastic or ETA Sealant	✓
Air Barrier & Roofing	✓	Air Barrier & Roofing VB	✓
	✓		✓
	✓		✓

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*Discuss  
timing of  
material  
installation*

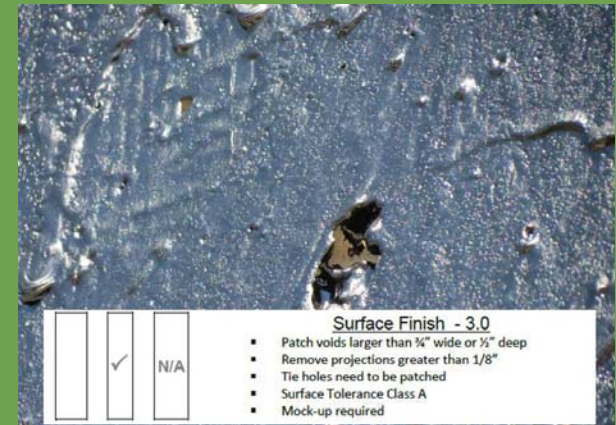


# *Review different product transitions*

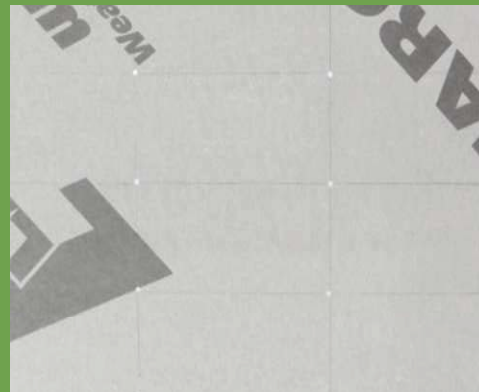


*Asphalt Based  
products are NOT  
compatible with  
flexible PVC*

# Review substrates & concerns



**OTHER**



Weight Classification	Density (Ave of 3) (lb/ft³)	Maximum Water Absorption (lb/ft³)		Minimum Compressive Strength (psi)	
		Average of 3 Units	Individual Units	Average of 3 Units	Individual Units
Lightweight	Less than 105	18	20	1,900	1,700
Medium Weight	105 - 125	15	17	1,900	1,700
Normal Weight	Greater than 125	13	15	1,900	1,700

\* Standard Specification for Loadbearing Concrete Masonry Units, ASTM C90-11b. ASTM International, 2011.

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"I'm here about the details."

***Review  
the job  
specific  
details***



# *Sketch the coordination of materials to each detail to confirm understanding*

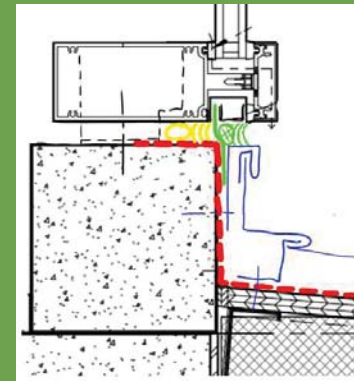
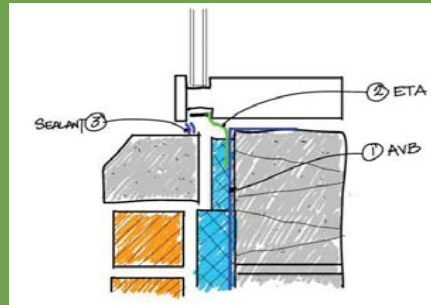
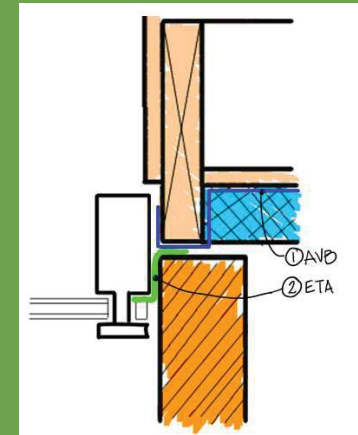
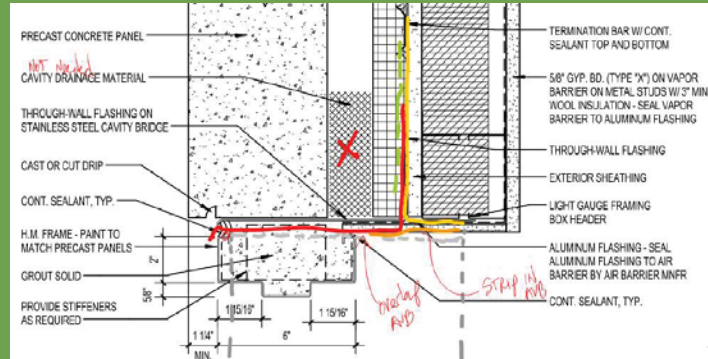
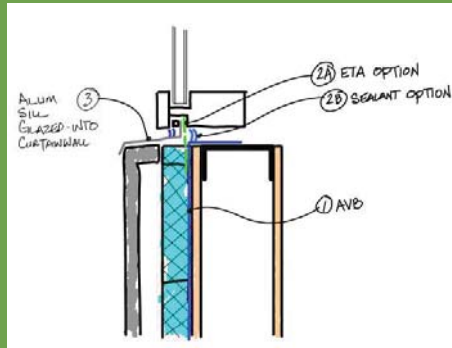
What is the detail at the parapet / Roofing?  
Verify that the AVB membrane either goes under the roofing membrane or to a compatible material to extend the AVB envelope to the roofing system (vapor barrier or adhered roofing membrane).

***Provide sketch...***

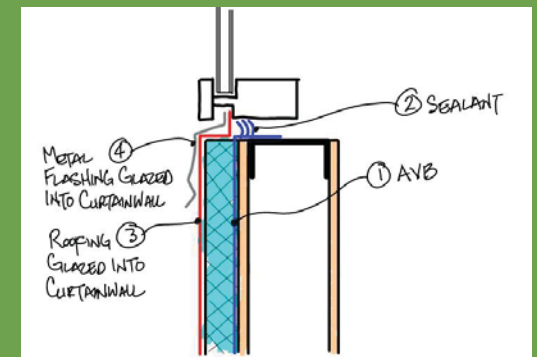
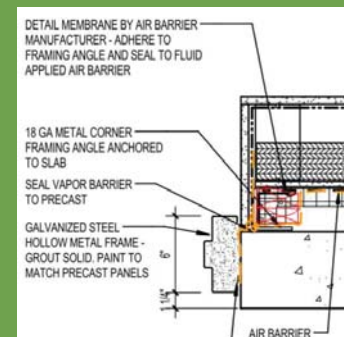
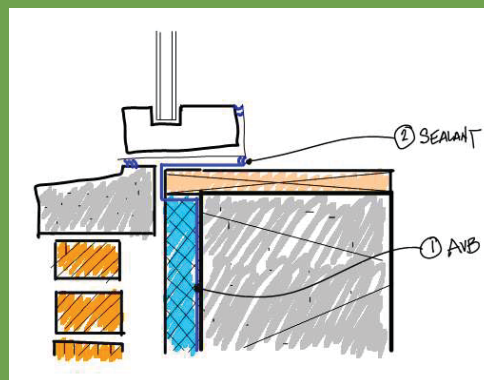
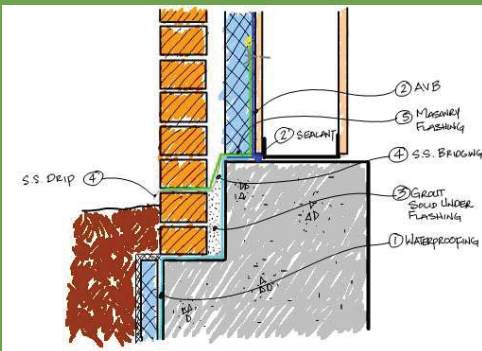


*Example*

*Discuss peel and stick joints and covering them if a single ply roof is being installed (the joints are NOT compatible)*

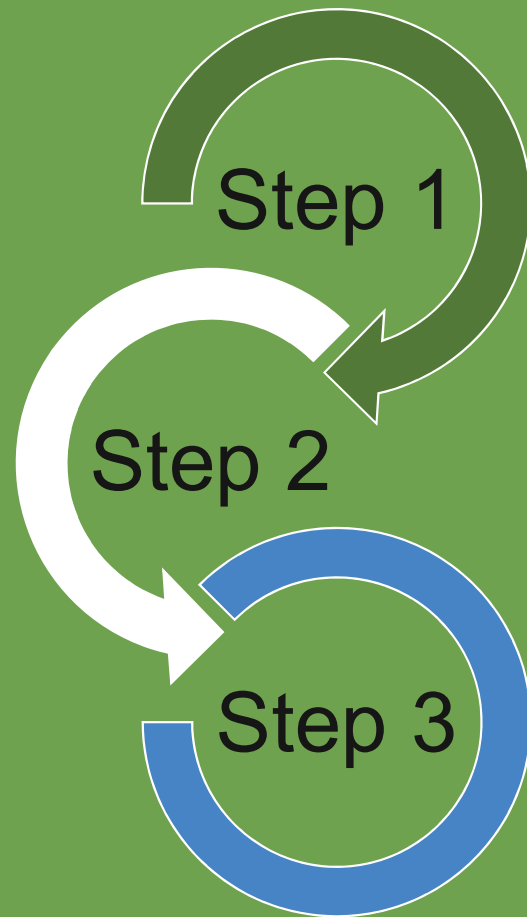


## Confirm assumptions with the Building Envelope Meeting Notes





**Discuss and document  
sequence of  
installation**



**Items to consider:  
Window/Door  
openings,  
Foundation  
Termination Detail,  
Vertical Wall  
Terminations,  
Parapet/Soffit  
Terminations, etc.**

**Membrane needs to  
have bridging...it can  
typically only span  
 $\frac{1}{8}$ " to  $\frac{1}{4}$ " maximum...**

***Review with the  
manufacturer  
installation  
instructions***



# Installing on a concrete or precast wall?

**Discuss timing,  
elevation related to  
the sun position**



11/07/2013 15:33



**Make sure that the CMU is properly covered at the top, not allowing moisture to get into the wall.**

**Make sure that the roof connection is properly sealed so that moisture does not get into the wall.**



**And discuss masonry mortar timing**

05/15/2014 08:54

# Review anchors in CMU or Concrete...

If pre-drilled, discuss the procedure for the Mason to follow



# Review masonry anchors and membrane requirements...

## Any coordination between trades required?





# Review anchors in sheathing...

## Review the masons anchor type and procedures



# Review membrane specific details

*and sequence,  
trade  
coordination, &  
condition  
requirements*

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# Review sheathing prep requirements...

## Fasteners? Joints? Edges?





# Review sheathing requirements...

## Damage and Proper Installation of sheathing





A photograph showing a cross-section of a concrete foundation wall. The wall is heavily damaged, with a large section of the outer concrete layer missing, exposing a red-painted steel reinforcement bar (rebar) that is bent and protruding. The ground in front of the wall is covered in loose gravel and dirt. To the left, there is a pile of wooden planks and debris. The wall itself is light-colored concrete, and there are some green and white markings on its surface. The overall scene suggests a construction or repair project in progress.

**Review  
protection  
needed and  
define scope &  
responsibility**

# Discuss wood concerns

Moisture Content  
Wrapping of ends

Knots

Splits

Joints

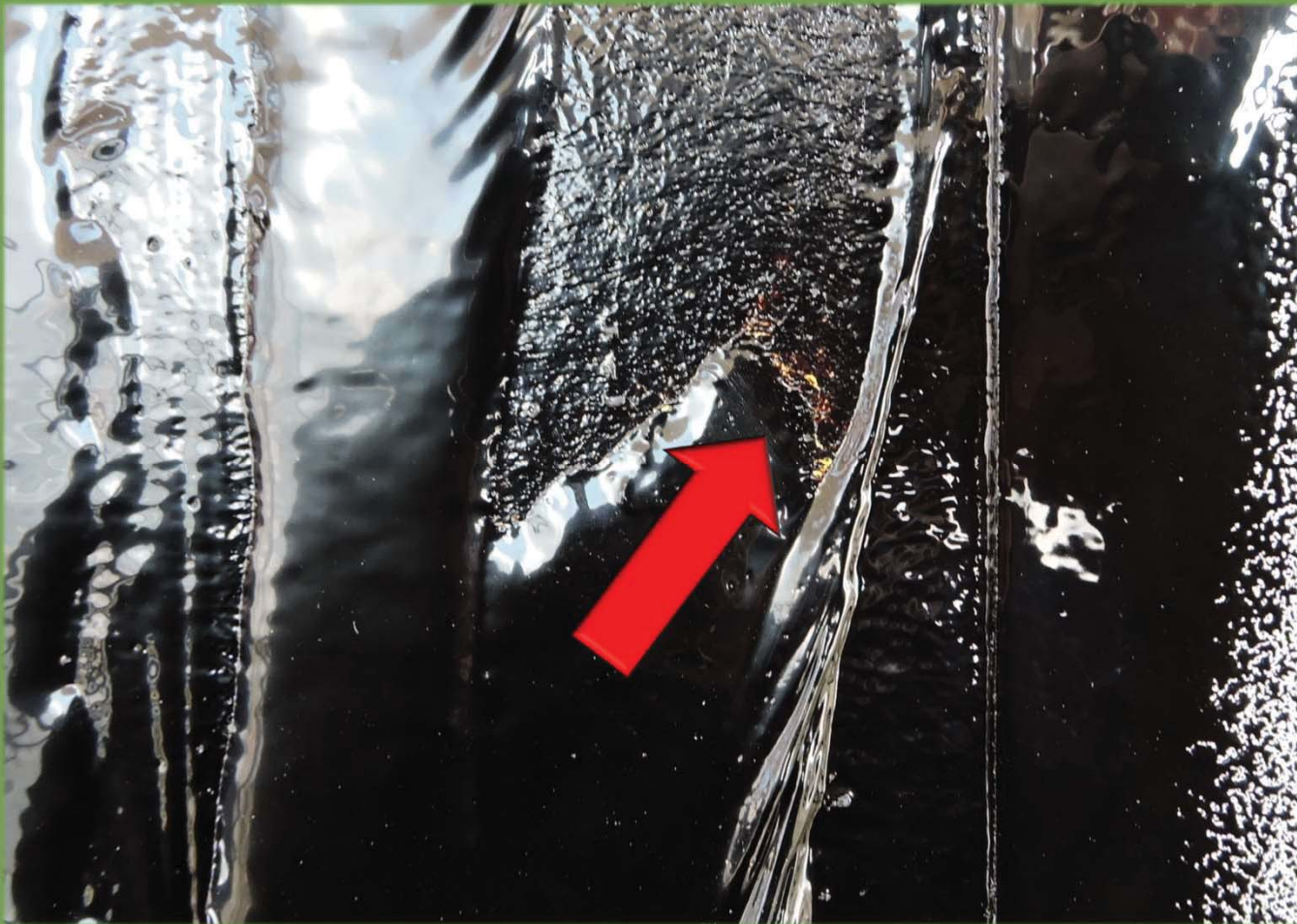




**How are window openings being flashed...  
watch out for membrane build-up and the  
potential for damage during window install**



# Liquid membrane concerns...



**Discuss how  
membrane is to  
obtain proper**

**Thickness /  
How many coats  
Wet mil thickness  
Dry mil thickness**



**When membranes  
are being used**



**Discuss  
Expectations**





**When membranes  
are being used**

**Discuss  
installation  
expectations  
and how to  
correct**



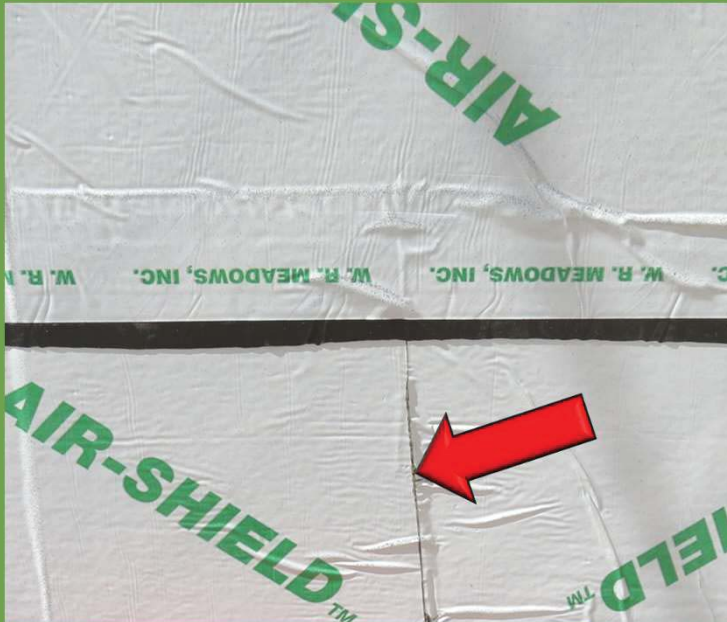
# When membranes are being used

Discuss Proper  
primer installation



# When membranes are being used

## Factor Edge



## Cut Edge



## Review Mfr requirements and expectations

# When membranes are being used

Review proper  
overlapping



**When membranes  
are being used**

**And review  
equipment  
needed for  
proper  
installation**





A photograph of a construction detail. On the left is a wooden beam. To its right is a white membrane, and further right is a blue membrane. Green sealant is applied along the joint between the wood and the white membrane, and also along the joint between the white and blue membranes. The blue membrane has some small 'x' marks and the word 'Waco' is partially visible at the bottom right.

**When membranes  
are being used**

**The Little details  
do mean the  
difference  
between success  
& failure**

# When membranes are being used

Discuss Proper end of day seal



# Discuss proper penetration details



**Discuss patching  
also...**

**Material  
Procedure,  
Etc.**



**Will sleeves need to be installed?**





# Will sleeves need to be installed?

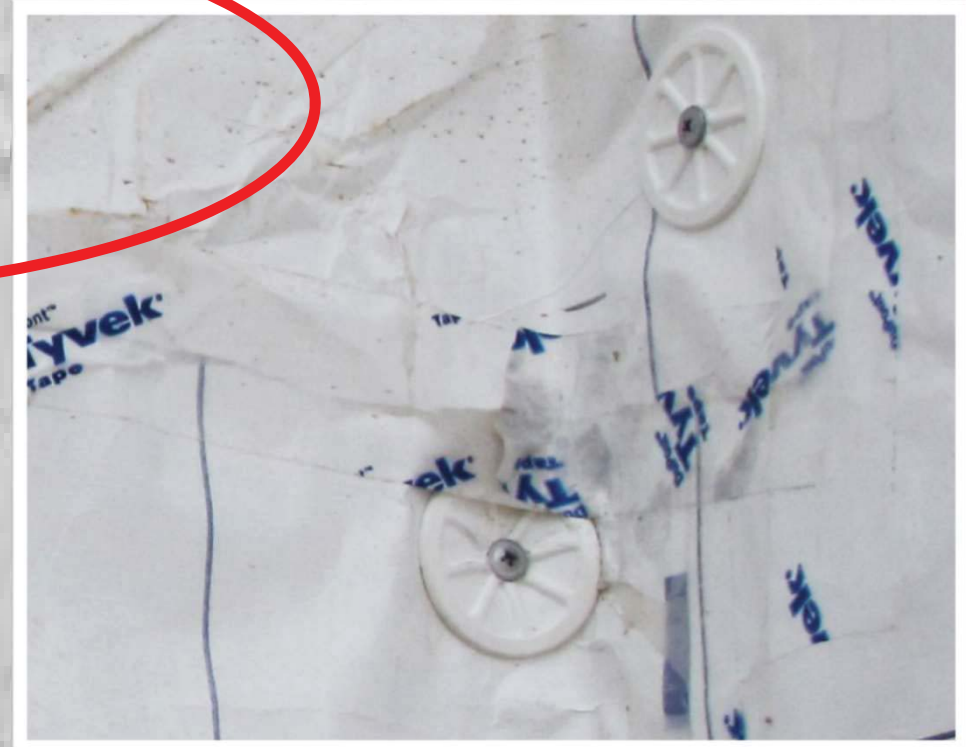


# Proper electrical box & multiple pipe procedures/requirements...





# Discuss proper fastener locations

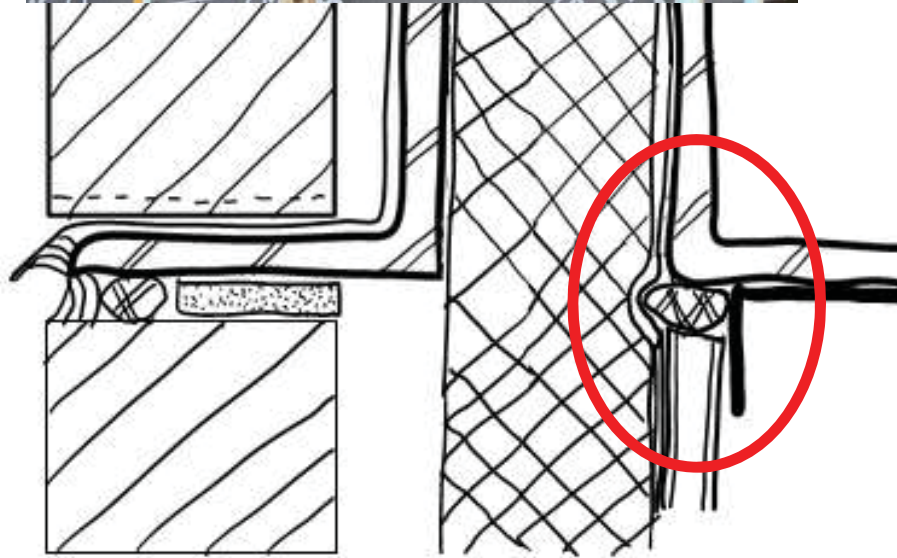


**Coordinate with other trades for the proper installation of the air barrier**



**Substrate  
coordination**



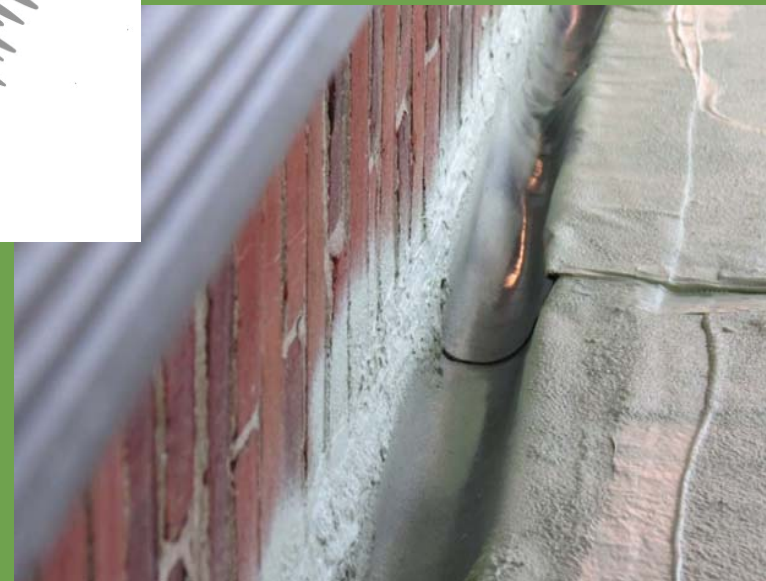
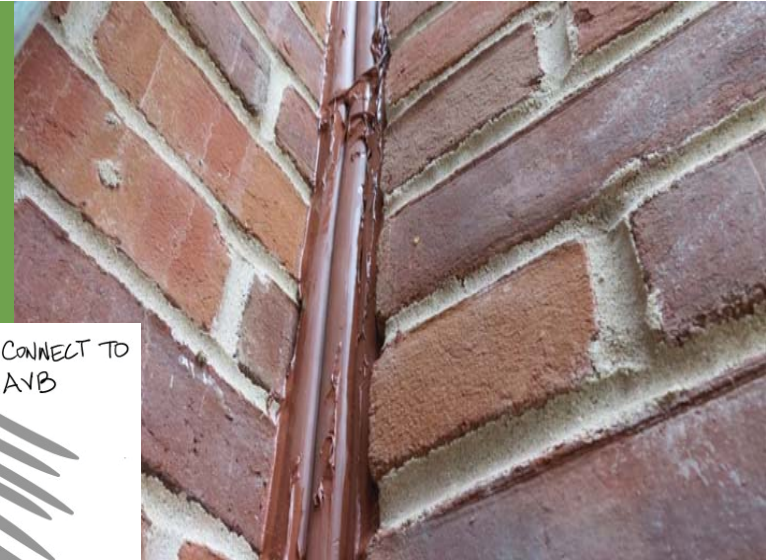
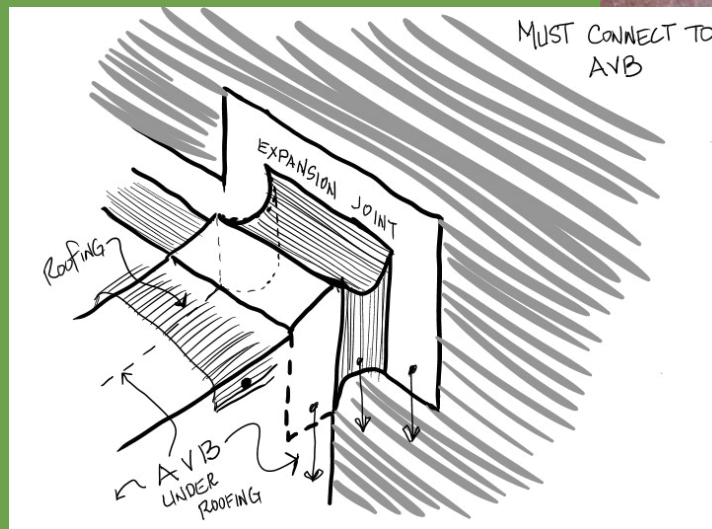


**Are we installing on a CFMF and sheathing...  
does the CFMF go floor to floor or fly by?**

**If floor to floor installation, we will need an expansion joint detail at each floor level (typically on the bottom)**

# Building expansion joints

Make sure that the membrane is continuous to termination...



Verify that the expansion joint specified is for the air barrier also...not just on the building façade...

# Expansion & Control Joints...

Review how they  
are installed...

Review materials  
needed





# Shelf Angles...

Review how the shelf angle is attached and how it will be properly coated...

is there anything to be concerned about...such as bolted connections?

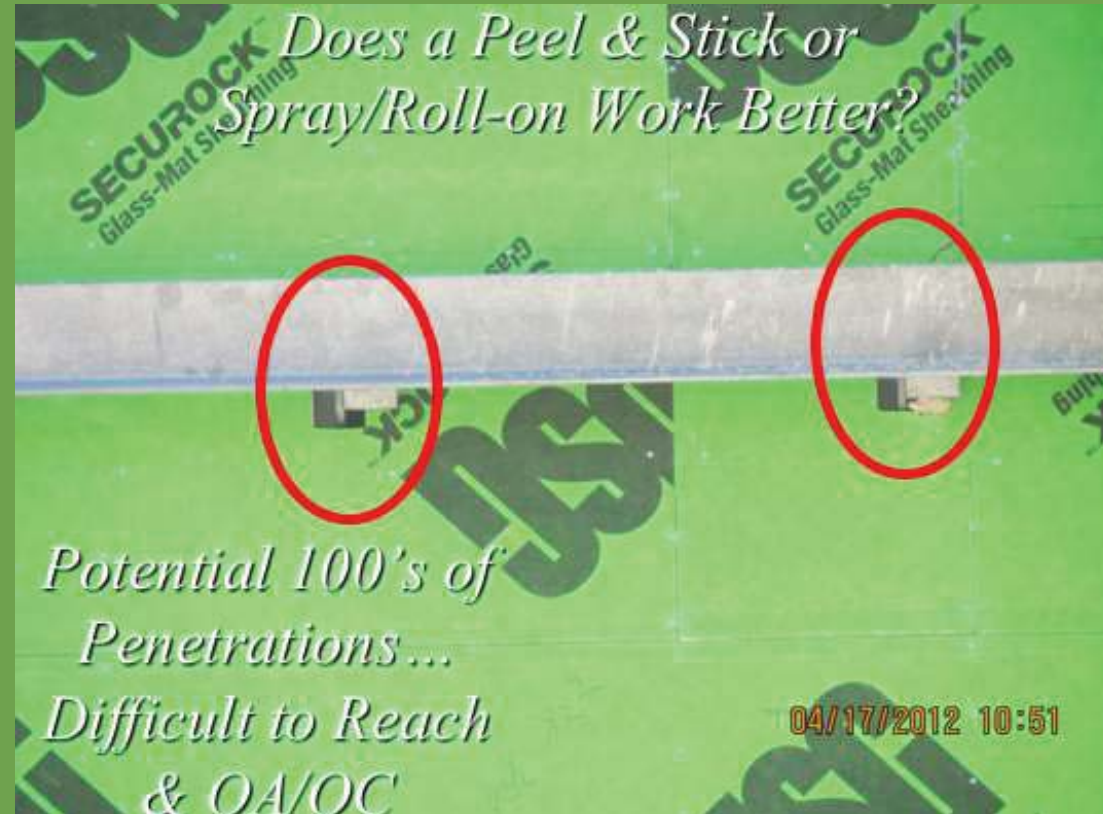




# Shelf Angles...

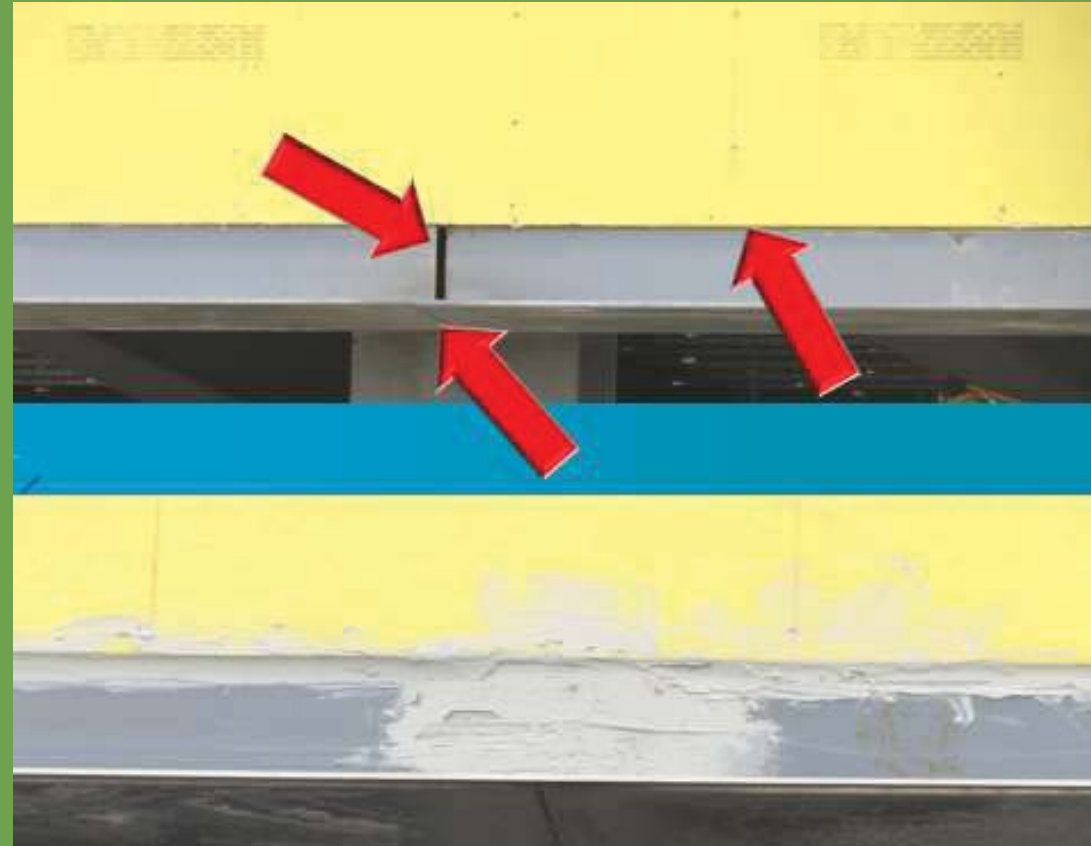
What material are we using?

Would a different material make better sense?



**Are we planning on using steel angle as part of the air barrier system?**

**We need to discuss who will seal the steel at 8'-0" o.c. or similar to create a continuous membrane.**



If we plan on  
installing  
membrane on the  
underside,

have a discussion  
on what will be  
required.

Consider liquid  
applied





**Will we have a masonry scaffold support system that will penetrate the building wall membrane and will need to be repaired at a later time?**

**Discuss procedure and who will perform the re-installation.**







**Review the parapet  
and coordinate and  
confirm compatibility  
with the roofing  
material.**

**The air barrier and  
roofing  
*(if that is the air barrier for the roof)*  
need to connect on the  
horizontal...not the  
short overhang of the  
roofing membrane  
*(it will not work)***

## Scuppers on your building?

**Discuss what needs to happen in order to make a continuous barrier through the scupper...**



# Projecting steel in your envelope?

Discuss proper procedure to make the installation correct...such as location of spray or the requirement for sheathing around the structural elements...etc.





# Review patching procedures

## Correcting a damaged area of Tyvek / Sheathing:



**STEP #1**  
Hole or tear is identified



**STEP #2**  
Cut & peel up Tyvek (4" above tear) and replace damaged sheathing as required



**STEP #3**  
Slip new sheet of Tyvek under existing Tyvek – extend 6" up  
Creating a "shingle" effect



**STEP #4**  
Attach the new slip sheet onto sheathing



**STEP #5**  
Tape existing and new Tyvek on all four sides.



**STEP #6**  
Install gasketed screws a minimum 16" o.c. – both directions  
(into studs)

A photograph of a modern building with a dark blue, vertically-ribbed facade. The SOLYNDRA logo is mounted on the upper left. A white text box on the right contains the text 'Discuss procedure for signage installation'. In the foreground, there is a paved area with several small round tables and white chairs, a tall white lamp post, and some young trees and landscaping.

**SOLYNDRA**

**Discuss procedure  
for signage  
installation**



# **Review Mock-up requirements**

**Purpose**

**Size/Configuration**

**Sequence**

**Inspections**

**Visual or Destructive**

**Produce a  
construction  
document /checklist**





**Its about  
Teamwork...**

**Stress open  
discussions**

**Don't let this  
happen on your  
project...**

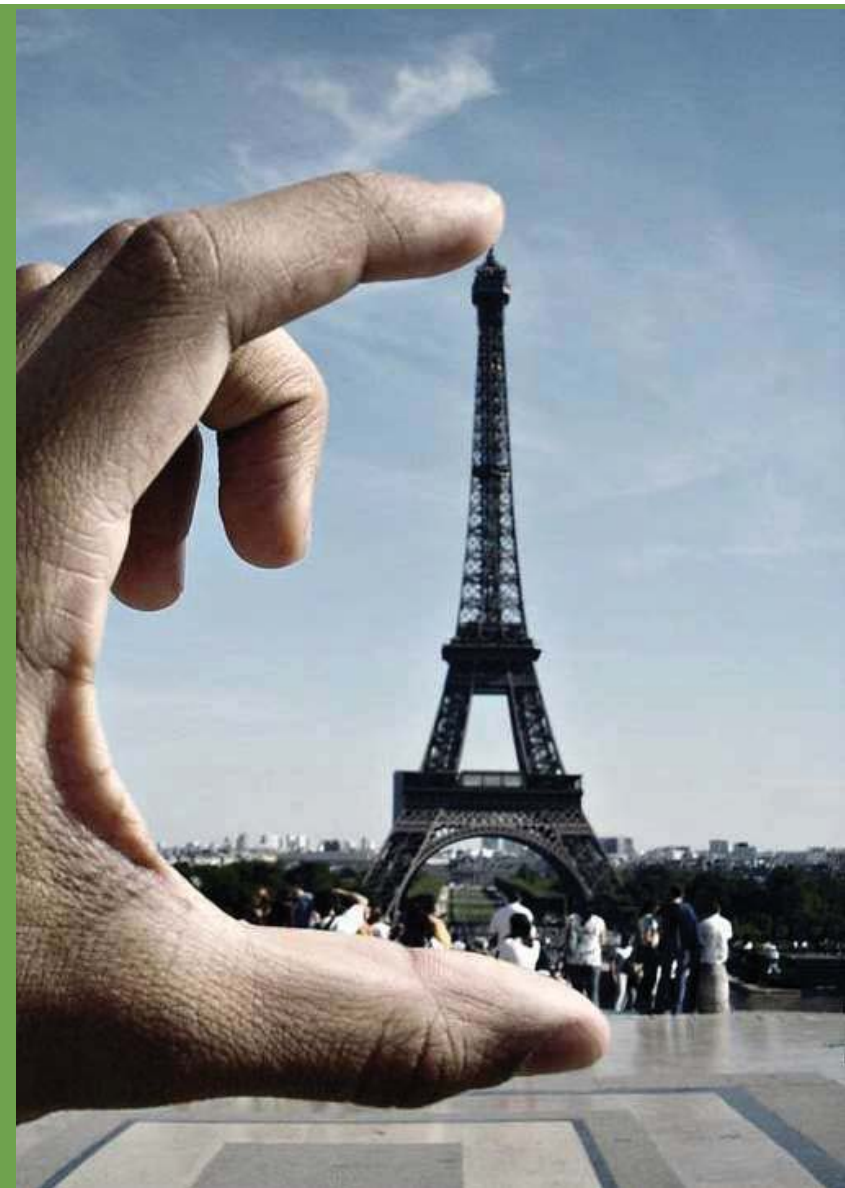




**Problems/  
concerns might  
initially appear  
very large in the  
beginning of the  
conversation...**

**At the end of the  
meeting, the  
concerns are  
typically small  
and manageable**

**Its all about  
perspective and  
openness to  
conversation...**







**How do we  
prevent risk**

**How do we get  
everyone on the  
same page**

**What is our  
best defense**

**What is the  
next step**





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# Thank You!

