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**CONFERENCE
& TRADE SHOW**
MARCH 26-27
2019
NORFOLK
VA
AIR BARRIER EDUCATION TRACKS FOR
THE CONSTRUCTION INDUSTRY

Common Pitfalls of Storefront & Curtain Wall

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GENERAL INSTALLATION



STOREFRONT & CURTAIN WALL

PROCEDURES THAT REQUIRE ATTENTION TO DETAIL

- **Basic Performance Principles – Curtain Wall vs Storefront**
- **Install Plumb – Level – True**
- **Water Control – Storefront & Curtain Wall**
- **Proper Anchoring**
- **Perimeter Shim Clearance**
- **Sill Flashing**
- **Expansion Joints**
- **Gaskets**

PROCEDURES THAT REQUIRE ATTENTION TO DETAIL

- **Critical Seals**
- **Setting Blocks**
- **Pressure Plate Torques**
- **Structural Silicone Glazing**
- **Condensation Resistance**
- **Perimeter Seals**
- **Finish Care & Regular Maintenance**

INSTALLATION PROCEDURES

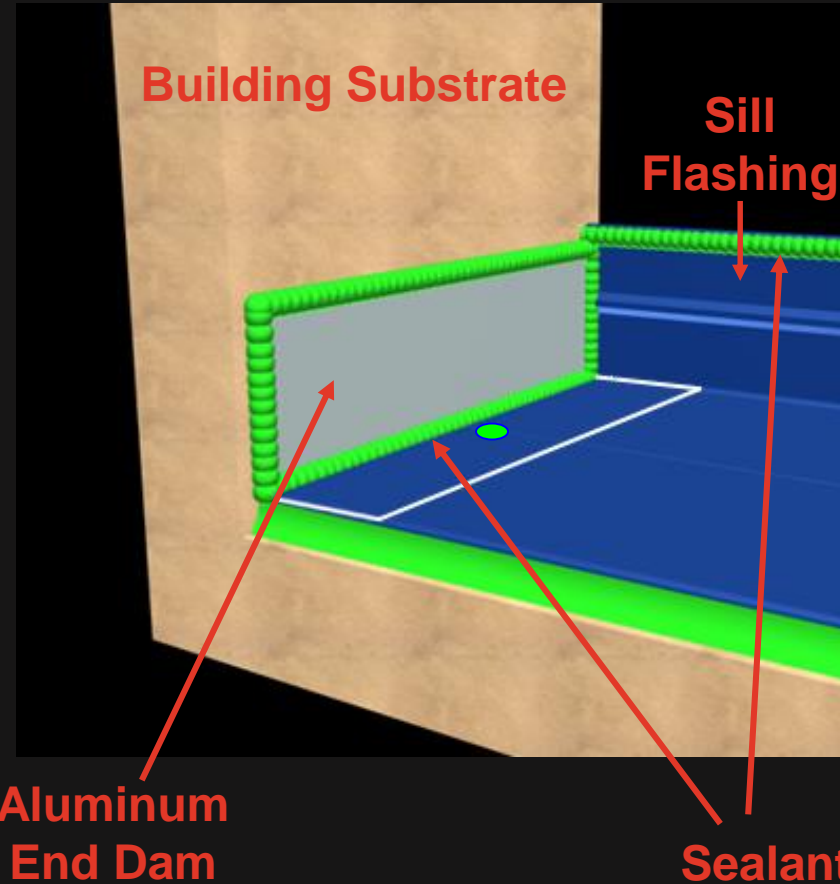
- **First And Foremost, Materials Are To Be Installed Plumb, Level, And True**

Plumb – Level - True



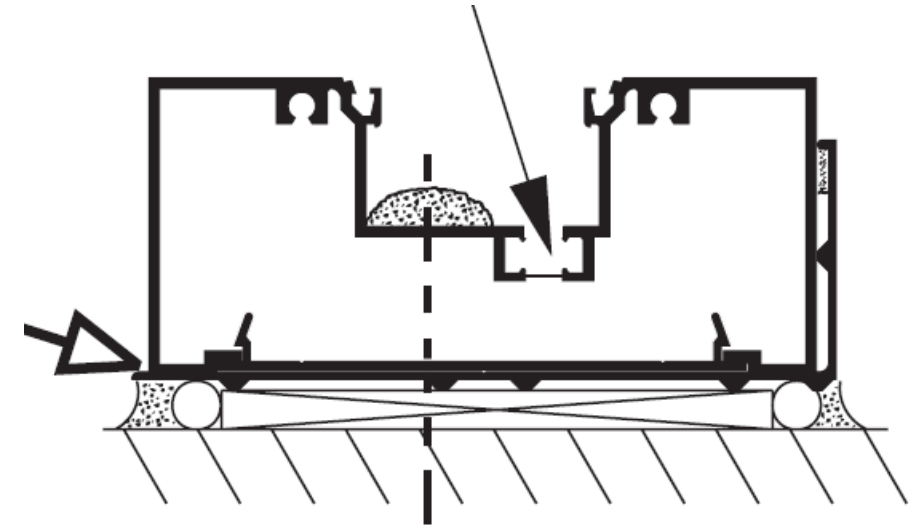
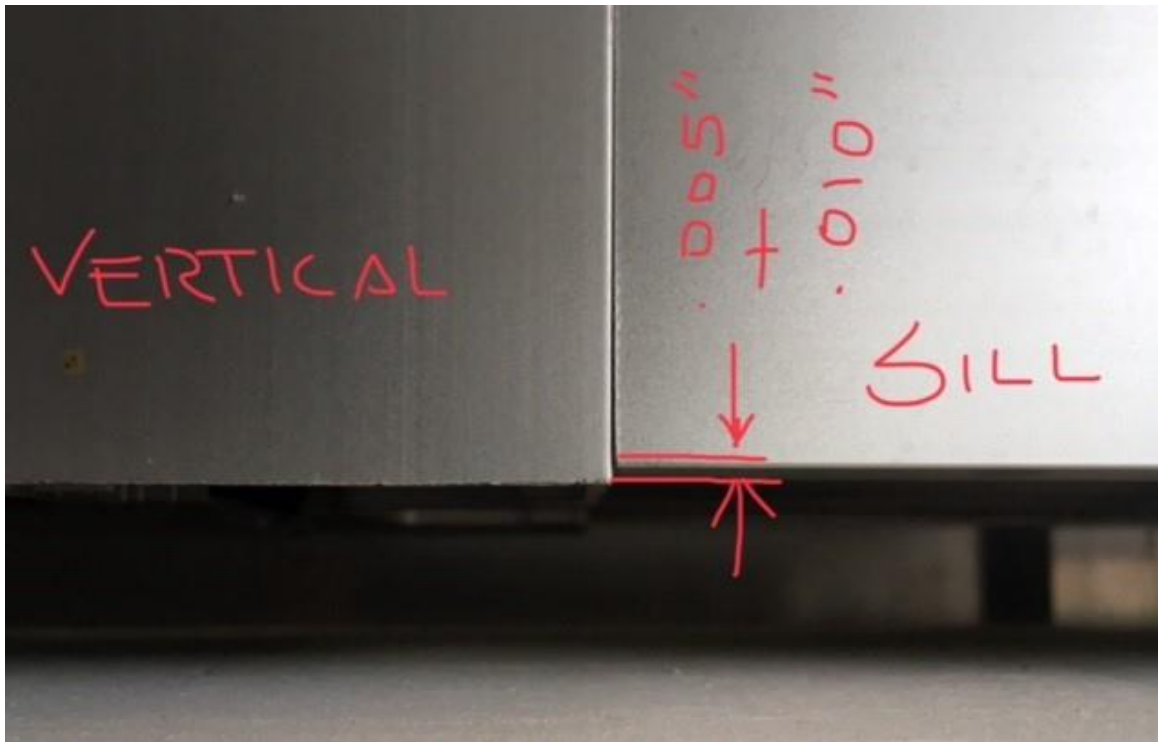
Plumb level and true?

End Dam and Flashing



SILL FLASHING

1. Measure rough opening to determine frame size and flashing length. Allow minimum of 1/4" clearance at head and jams for frame clearance. Flashing will run the full width of the opening minus (-) 1/4". If opening is over 24'-0" wide a splice joint required every 12'-0". (See splice joint procedure)
2. Install flashing at the sill. It should be level, shimmed up a minimum of 1/4", and carefully sealed at both end dams as shown on Page 26. Seal over the heads of all perimeter fasteners.



Sill Flashing



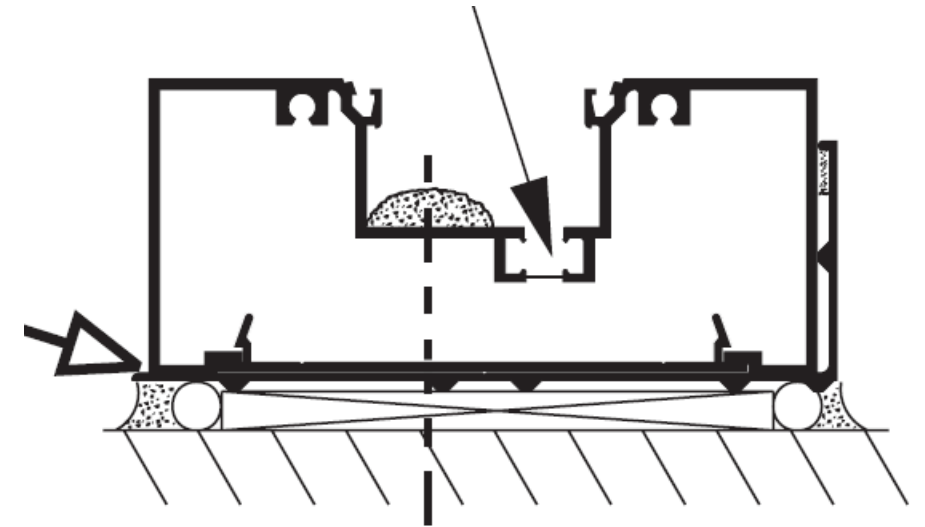
Sill Flashing



Sill Flashing



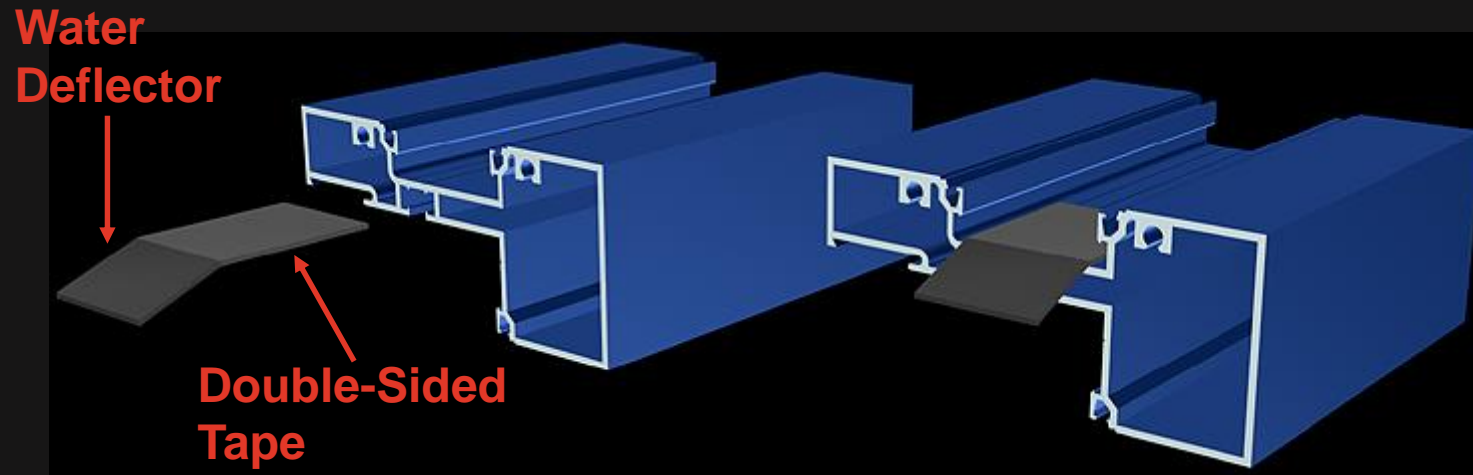
Sill Flashing



Storefront Water Control – Water (Drip) Deflector

- **Install Water Deflectors**
 - **Intermediate Horizontals Only**
 - **Seal Around Water Deflectors**
 - **Seal Groove at Thermal Break**
 - **Seal Vertical Weathering Reglets**

Water Control – Water (Drip) Deflector



Water Control – Water (Drip) Deflector



End Dam Solution #1?



End Dam Solution #2?



Water Control – Joint Plugs on Storefront?



End Dam Solution ?



Water Control – Weep Slots & Weep Hoods



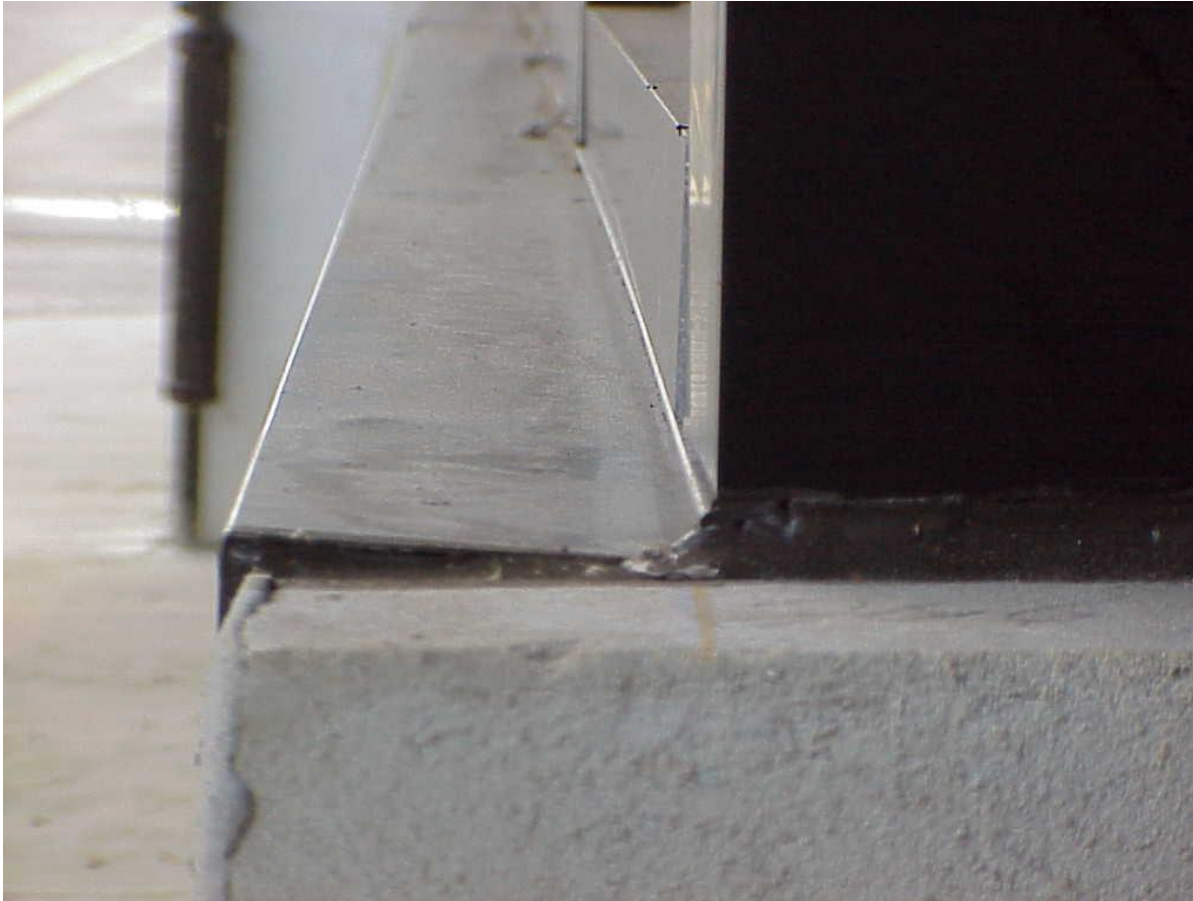
DO NOT DRILL THROUGH BACK LEG OF SILL FLASHING



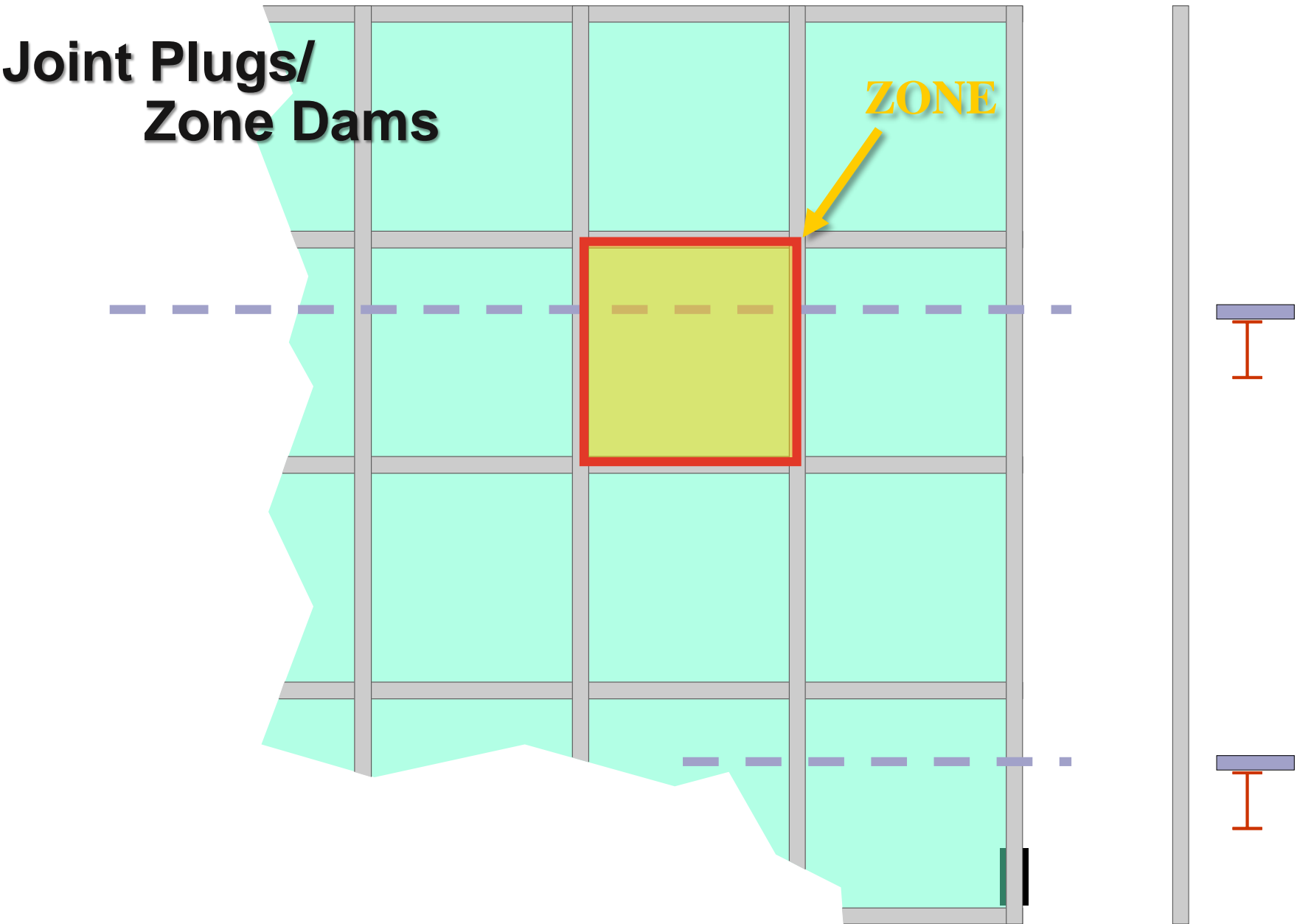
DAM HEIGHT?



Sill Flashing

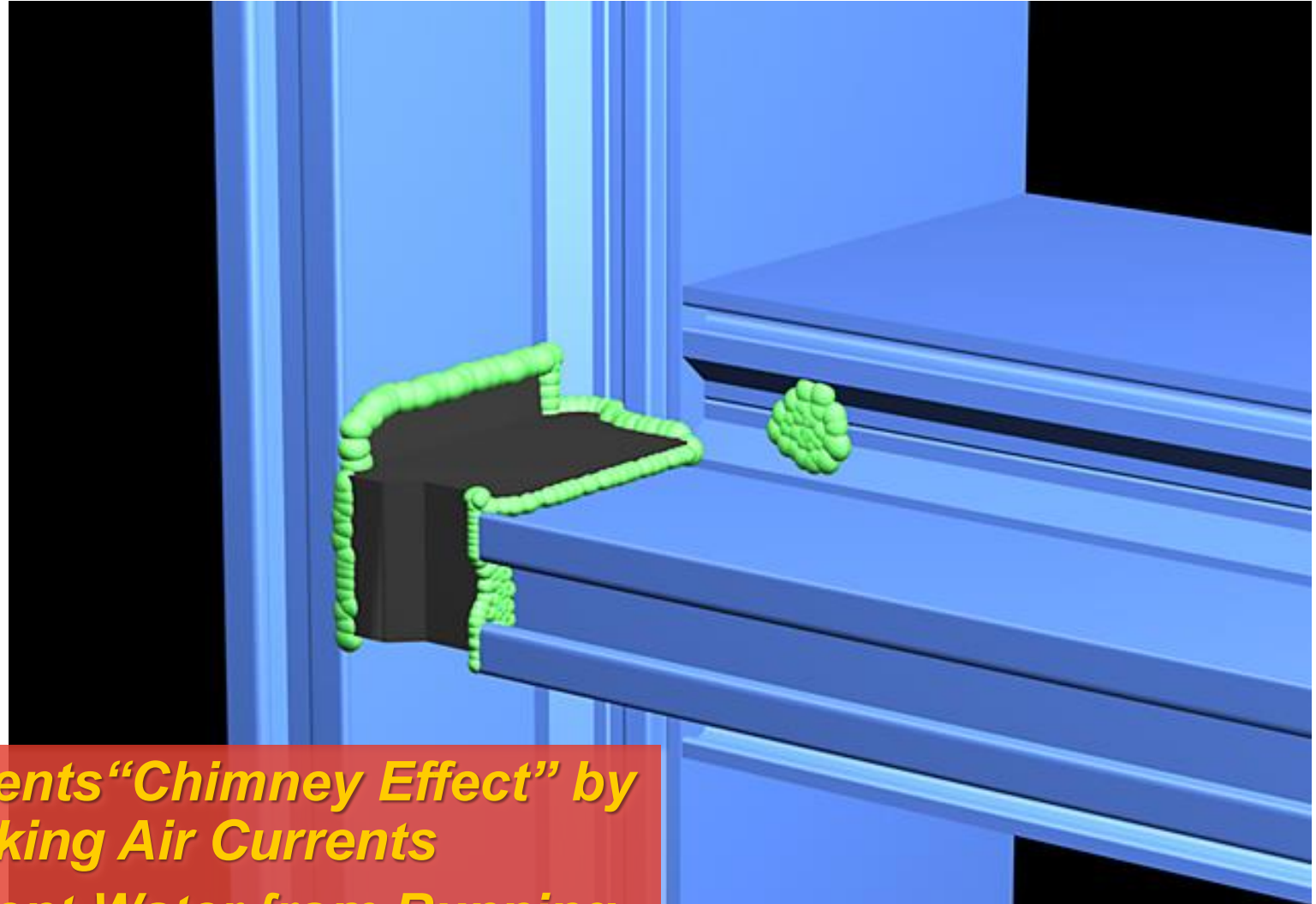


Pressure Equalization - Compartmentization



Pressure Equalization

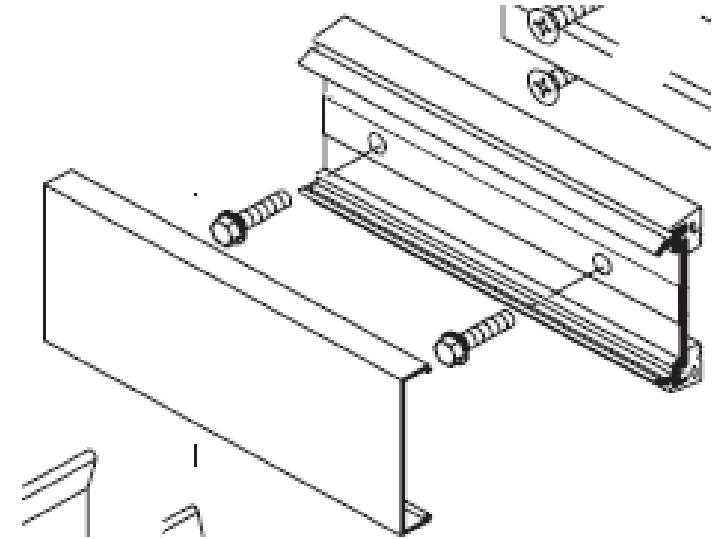
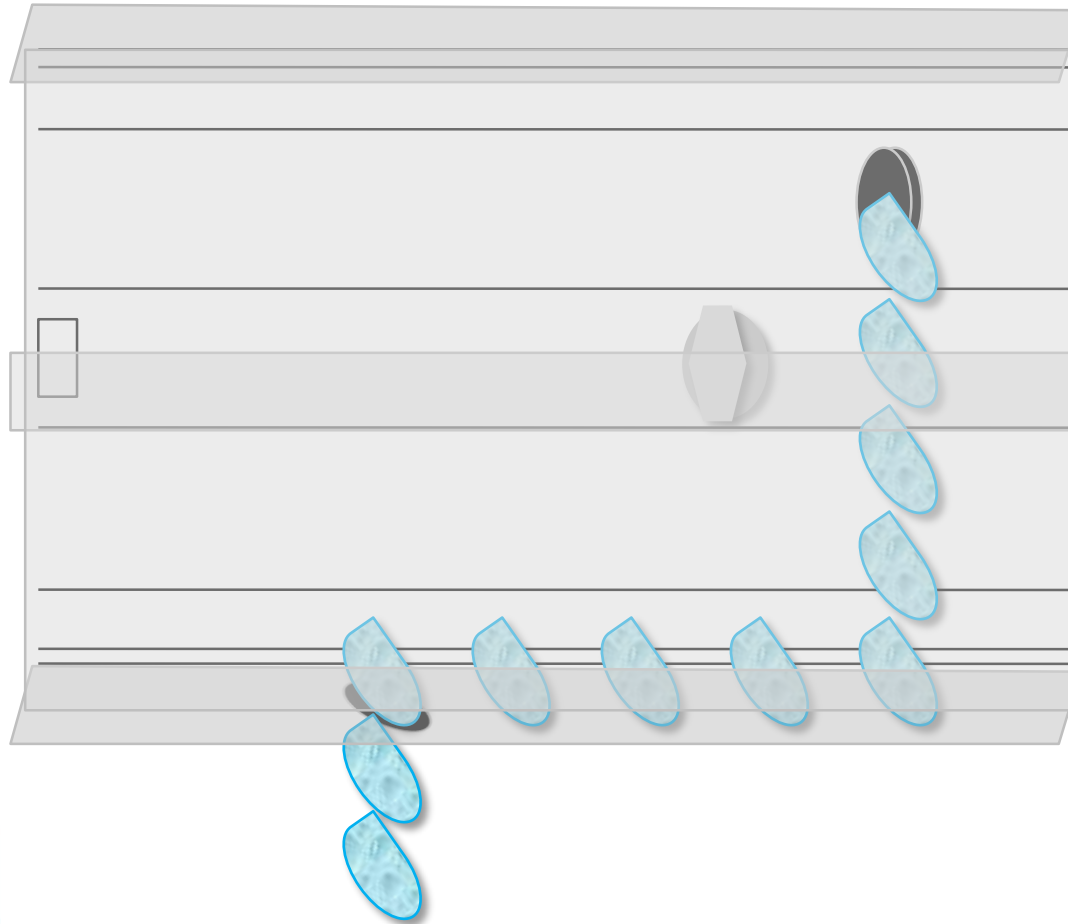
Joint Plugs/ Zone Dams



- *Prevents “Chimney Effect” by Blocking Air Currents*
- *Prevent Water from Running Down Vertical Mullions*

Pressure Equalization

Baffled or Rain Screen Weeps



- *Allows Water to Drain from System*

Water Control - Curtain Wall Rain-Screen Principle



Critical Seals
Missing / Weep
Slots – Holes?



Water Control - Curtain Wall Rain-Screen Principle



Weep Slots -
Holes?

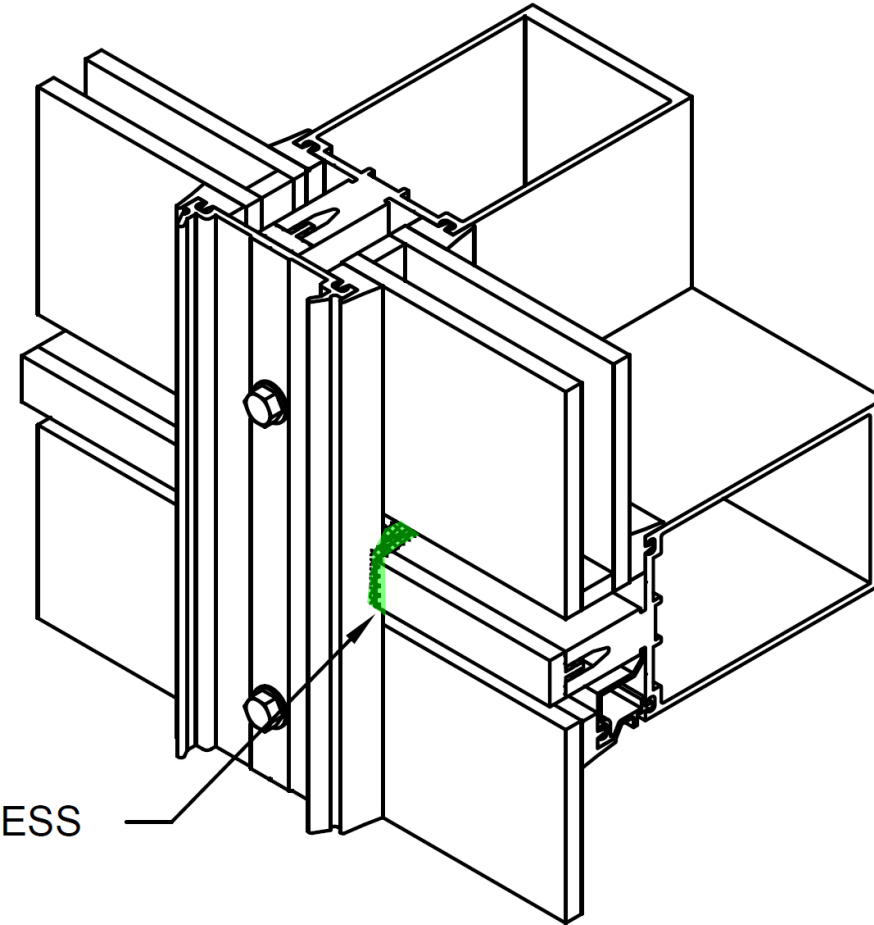
Critical Seals?



Pressure Plate Screws

Locate Screws 9" On Center And As Close To The Horizontal Joint As Possible.

Torque Screws To 95 to 100 Inch Pounds



TOOL EXCESS
SEALANT

Pressure Plate Torque ?



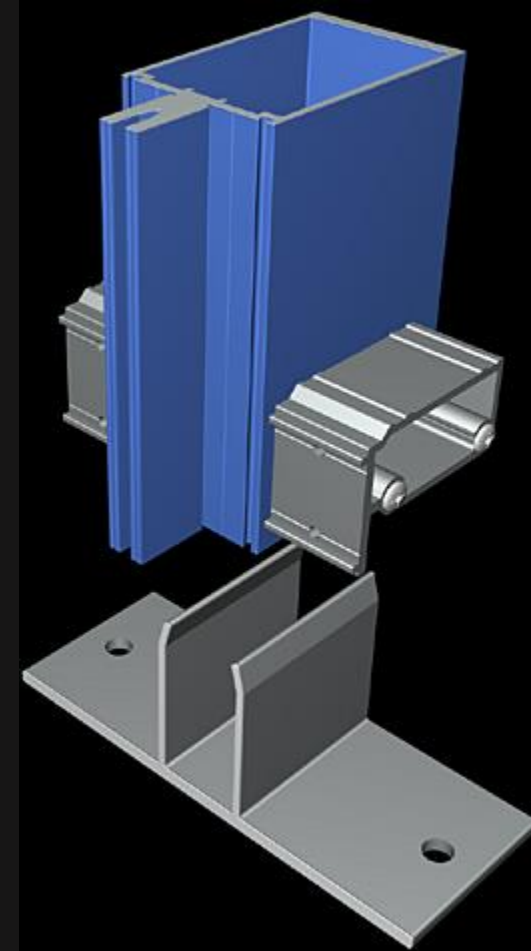
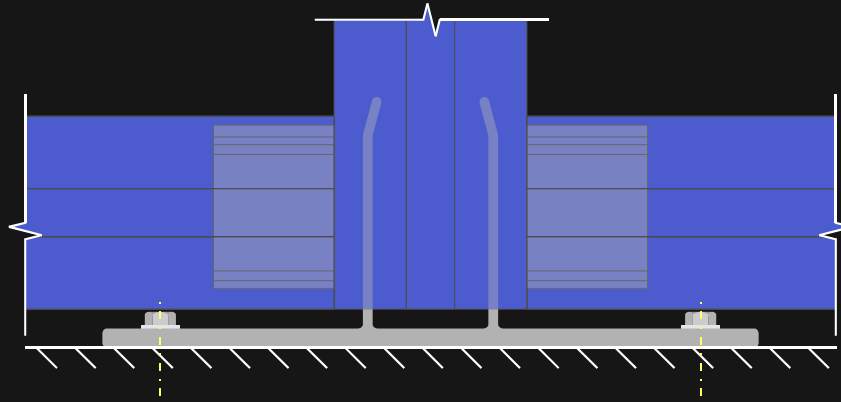
Pressure Plate Torque ?

90 to 100
inch/pounds ?



Anchorage: T and F Anchors

$$\frac{M \times L \times WL}{2} = 750\# +$$

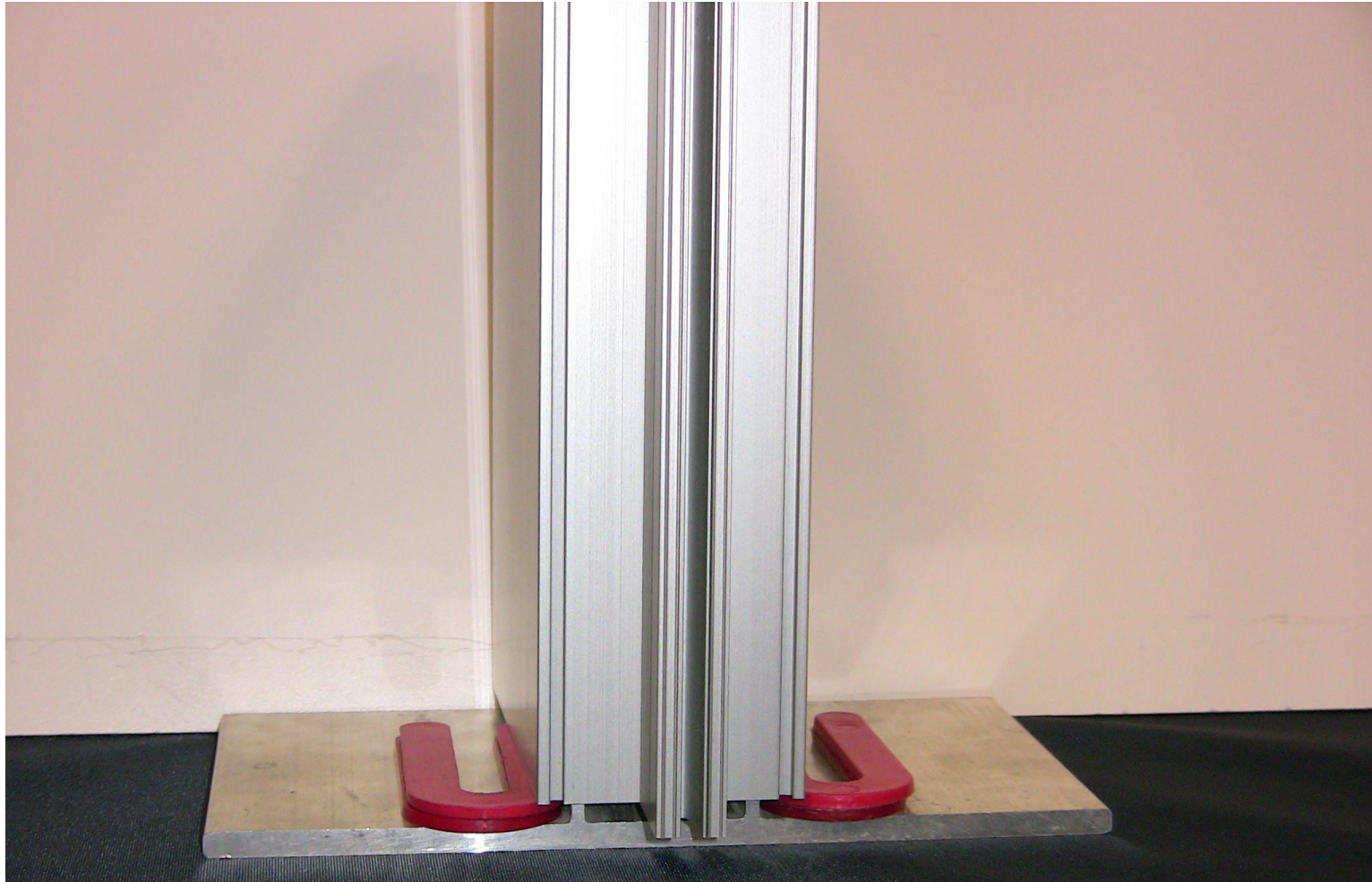


Tubular Mullions Only

Perimeter Anchors



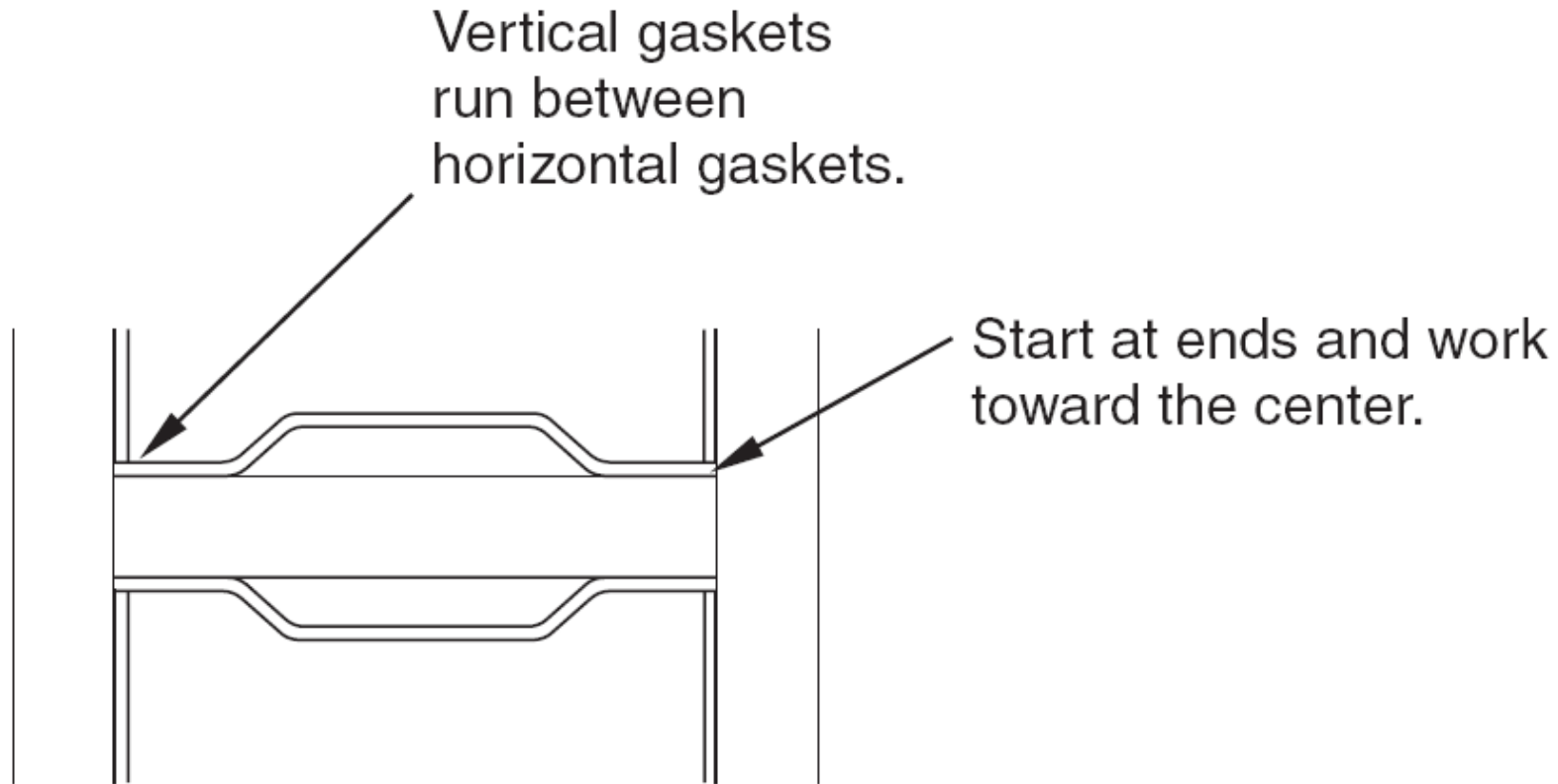
Locate Shims Properly



Anchor Shims ?



GLAZING GASKETS



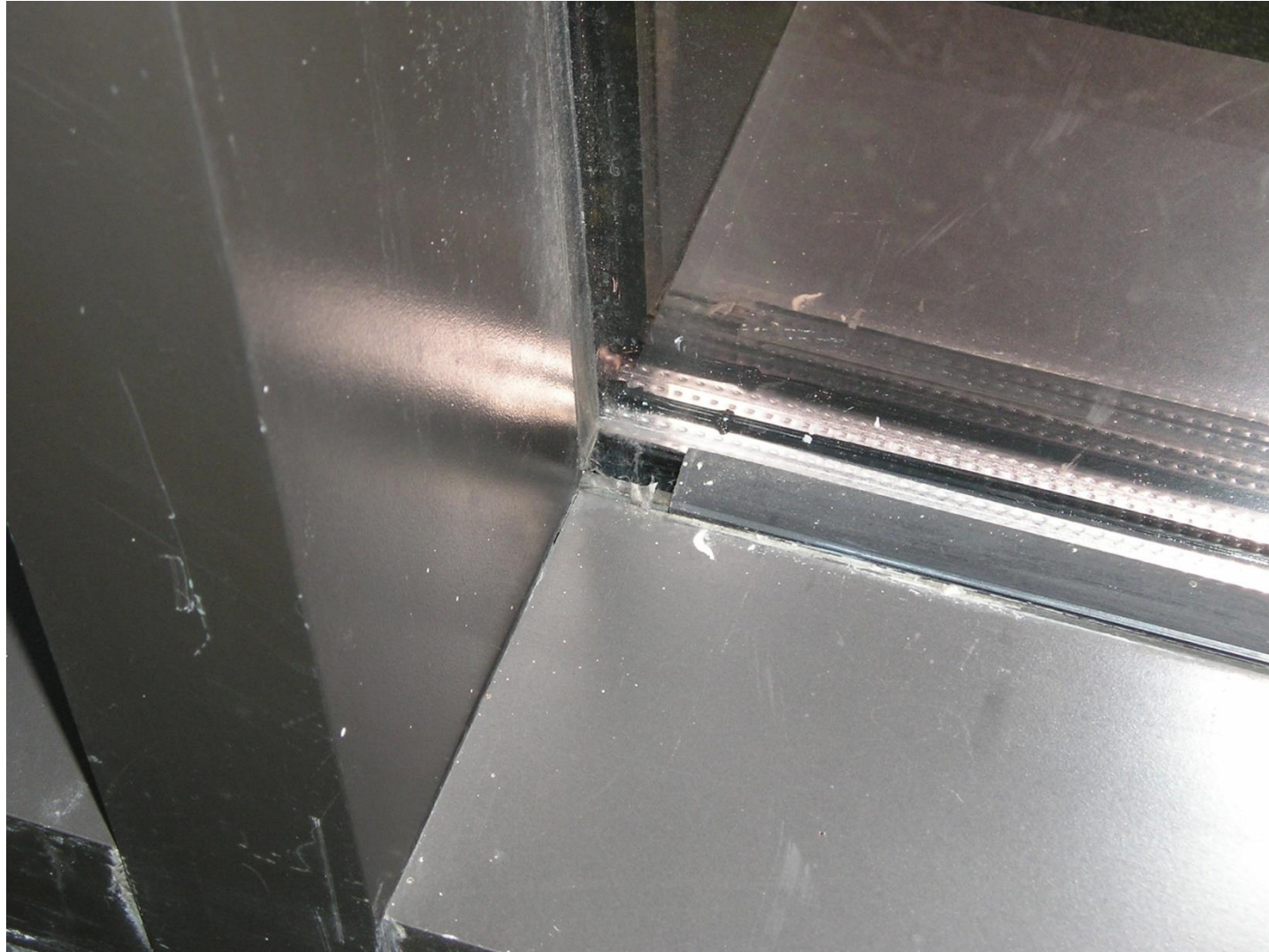
Gasket Application



Gasket Application



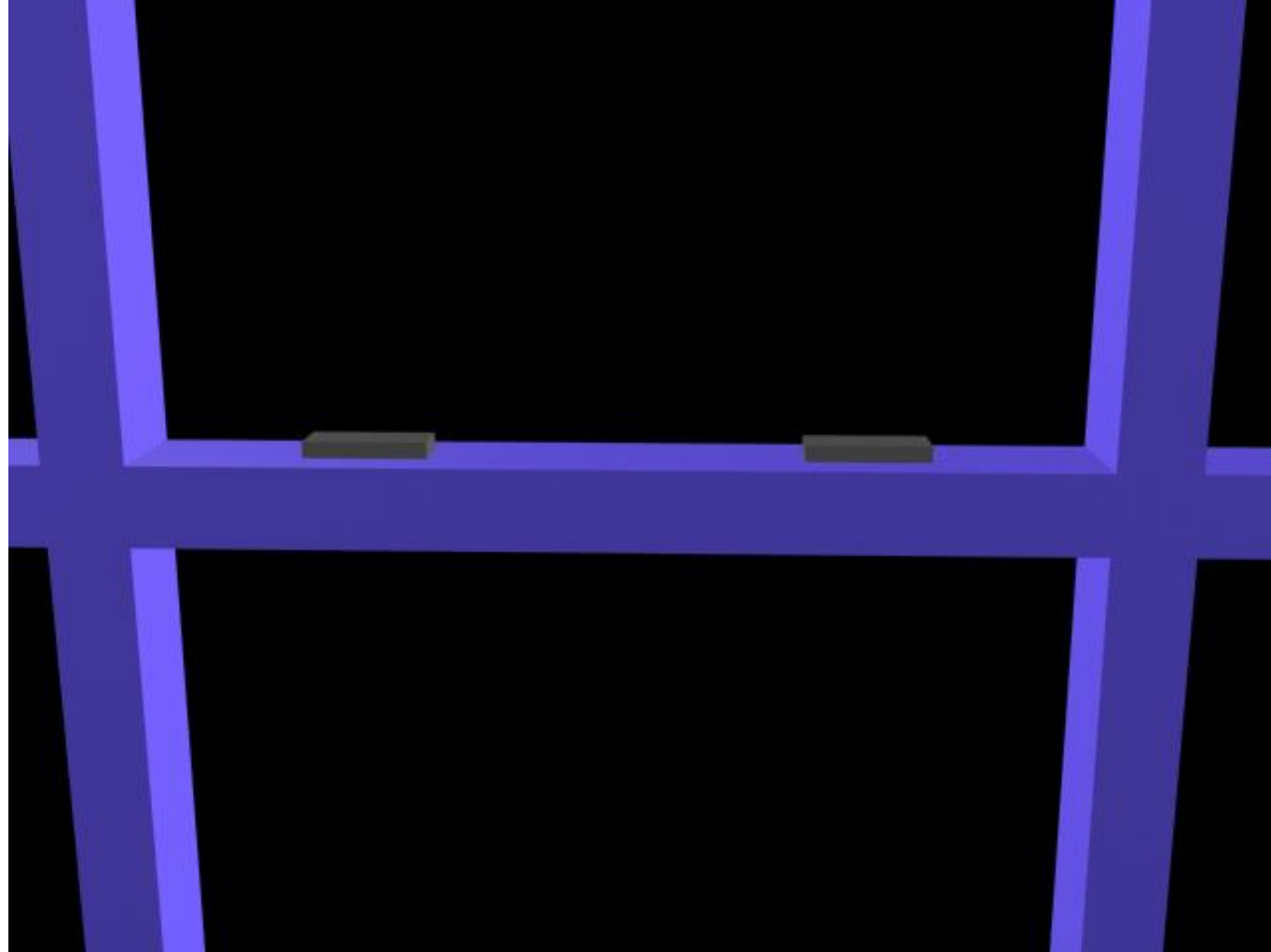
Gasket Shrinkage



SETTING BLOCKS

- Typically Installed at 1/4 Points
- 4” Long
- Blocks May Be Moved to 1/6 or 1/8 Points to
Limit Deflection
- Consult Glass Manufacturer

SETTING BLOCKS



SETTING BLOCKS ?



SETTING BLOCKS ?



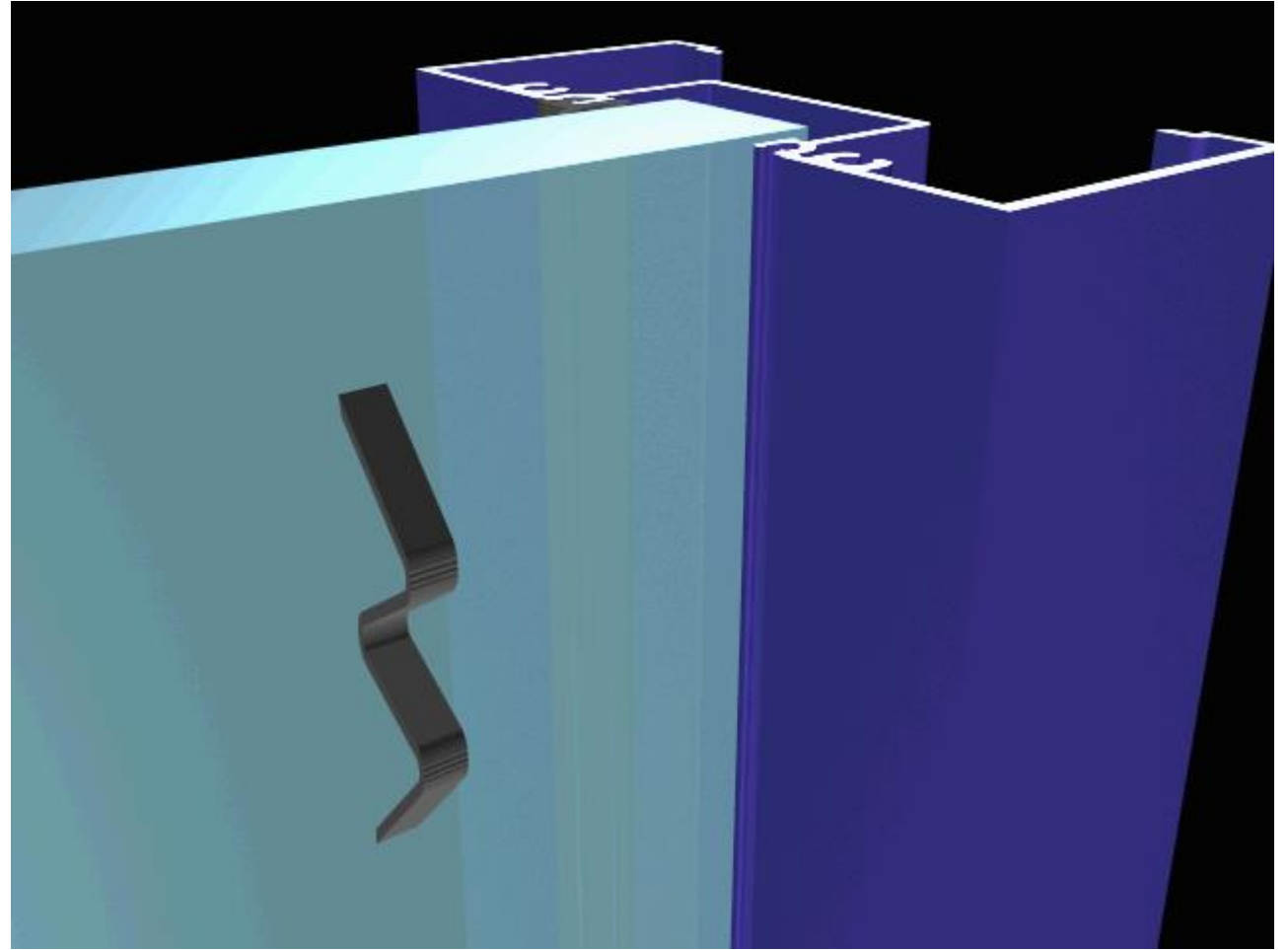
SETTING BLOCKS ?



01/09/

SIDE BLOCKS

- Keep Glass from Shifting
- Used for Dry/Dry Glazed Systems



SIDE BLOCKS ?



CONDENSATION

Many Factors Contribute to Condensation

- **New Construction Natural Moisture**
 - **Uncured Cement**
 - **Plaster**
 - **Painting**
- **Inadequate Airflow Across System**
- **Window Coverings**
- **Outside Cold Temp / Interior Temp**
- **Excess RH etc. etc.**

Condensation Resistance ?

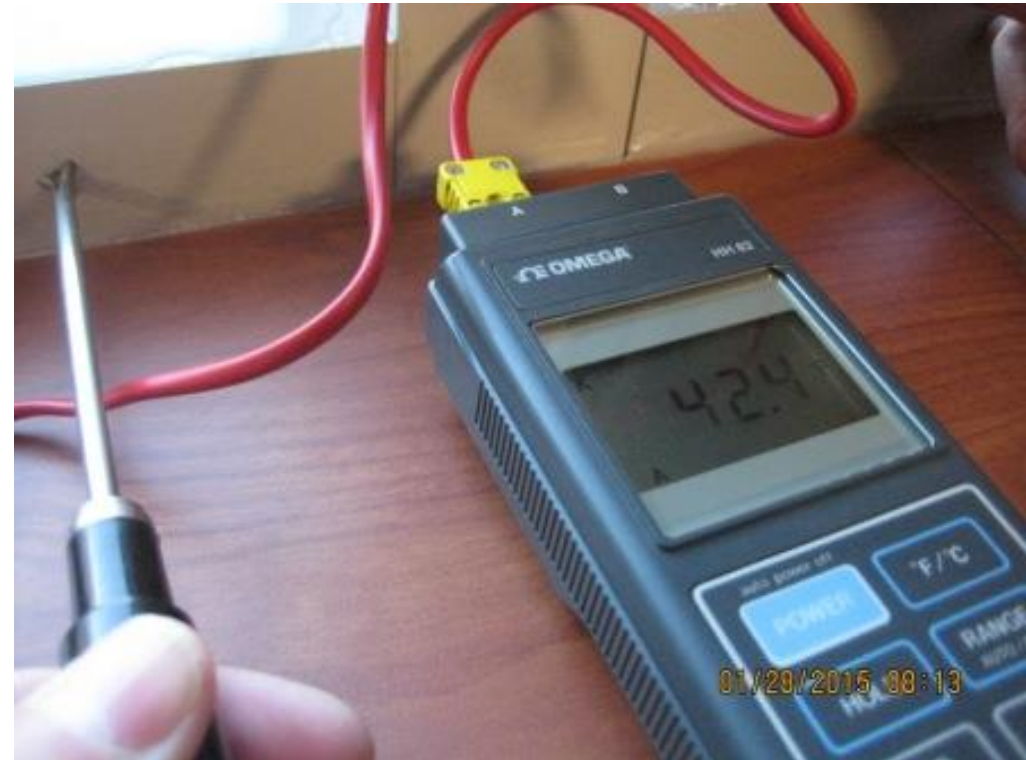


Condensation Resistance



Relative
Humidity (RH)

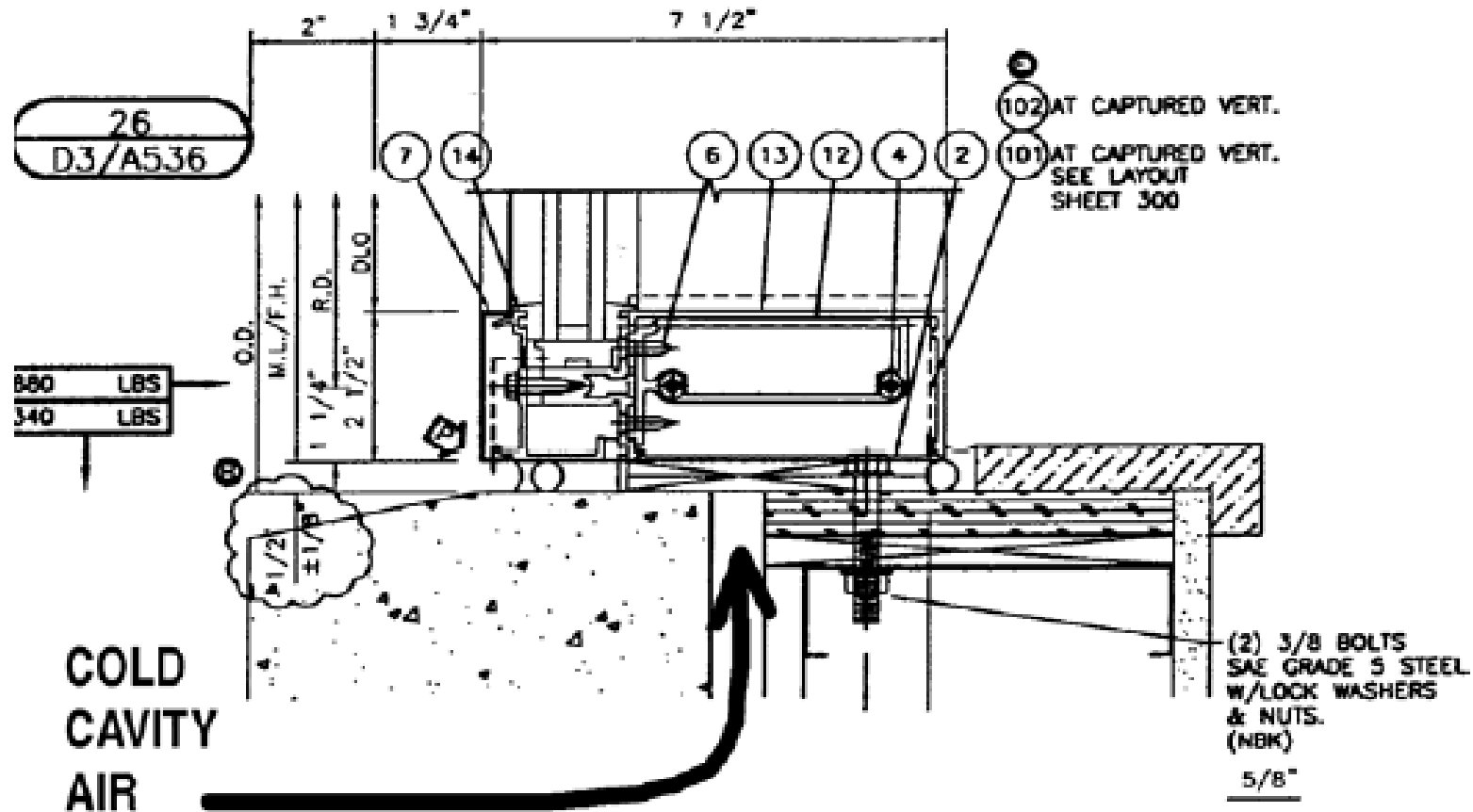
Surface
Temperatures



Condensation Resistance



Condensation Resistance



Condensation Resistance



PERIMETER SEAL

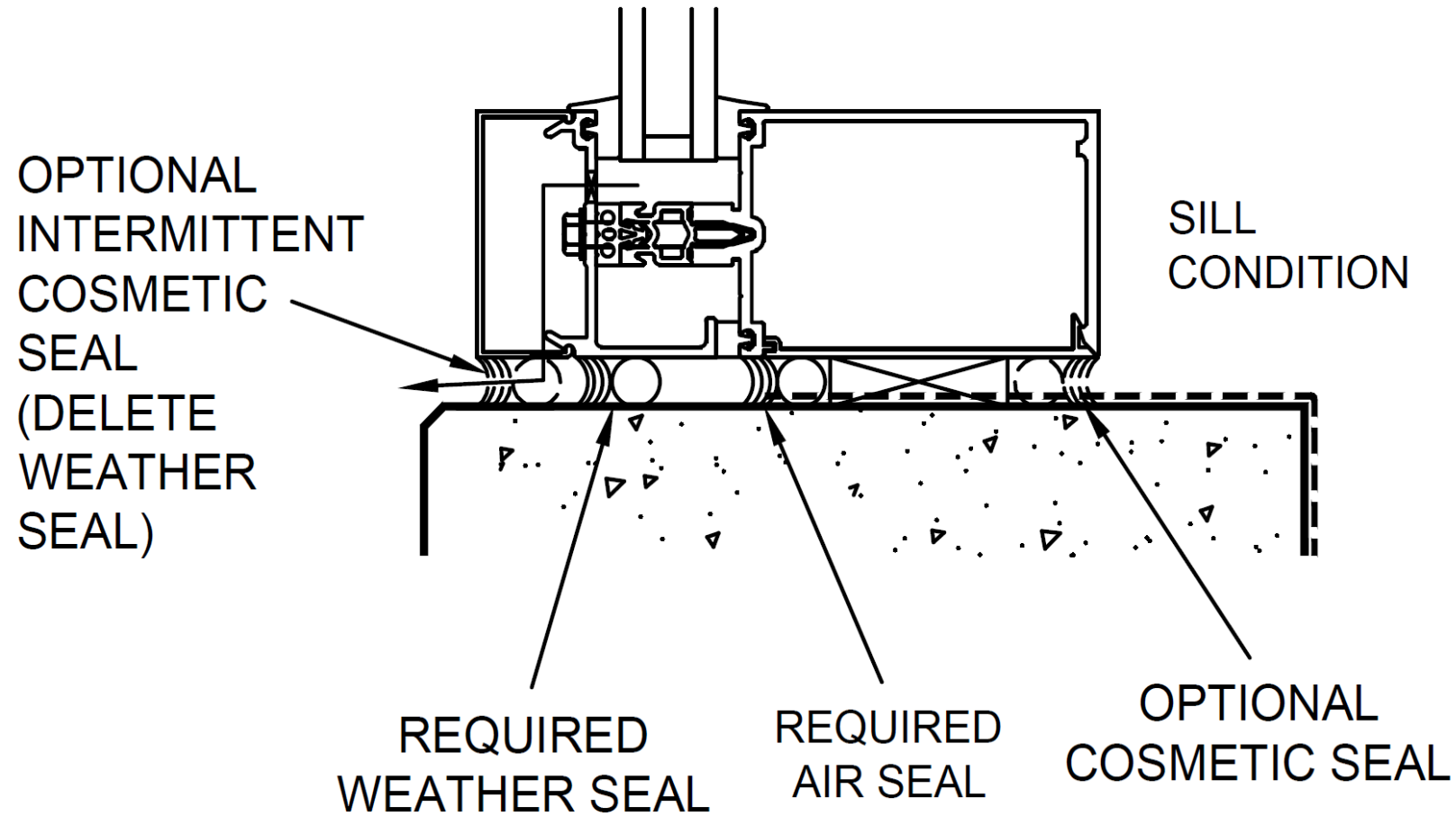
- **Use Backer Rod to Fill Void and Support Sealant**
- **Apply Sealant and Tool It**
- **Interior & Exterior Seals**
- **Sealant Must Be Compatible with All Surfaces,**
- **1/4" Nominal at Storefront**
- **1/2" Nominal at Curtainwall**
- **Provides Adequate Space for Proper Sealant Joint**
- **Isolates Framing From Surrounding Conditions or**

Perimeter Seals



Where is the shim clearance?

PERIMETER SEALS



STRUCTURAL SILICONE GLAZING

A METHOD OF BONDING THE GLASS TO THE FRAMING

- **Two-Sided Structural Silicone Glazing**
 - Typically Done in the Field
- **Four-Sided Structural Silicone Glazing**
 - Best When Done in a Controlled Environment

STRUCTURAL SILICONE GLAZING

- **Sealant Type May Vary Per Application Depending on Material, Temperature, & Substrate**
- **Cure Time**
- **All Spacers, Blocks, and Tapes Must Be Compatible with the Structural Seal**

STRUCTURAL SEALANT

- **Application is Critical**
- **Ambient Air Temperature**
- **Surface Preparation - Primer if Necessary**
 - **Mask Glass and Aluminum**
 - **Apply Sealant and Tool**
 - **Sealant Must Cure Before Removing Glazing Temporaries**
 - **Cure Time Will Vary Depending on Joint Design**

STRUCTURAL SILICONE APPLICATION ?



PROTECT ALUMINUM & FINISH FROM OTHER MATERIALS

B – KEEP MATERIAL AWAY FROM WATER, MUD AND SPRAY – PREVENT CEMENT, PLASTER AND OTHER MATERIALS FROM DAMAGING THE FINISH.

C – PROTECT THE MATERIALS AFTER ERECTION, BY WRAPPING WITH KRAFT PAPER – OR BY ERECTING VISQUEEN/CANVAS SPLATTER SCREENS. CEMENT, PLASTER, TERRAZZO AND OTHER ALKALINE MATERIALS ARE VERY HARMFUL TO THE FINISH AND SHOULD BE REMOVED WITH WATER AND MILD SOAP BEFORE SETTING OCCURS. UNDER NO CIRCUMSTANCES ALLOW THESE MATERIALS TO TO DRY OR PERMANENT STAINING WILL OCCUR.

Finish Care & Regular Maintenance



Aluminum staining?

Finish Care & Regular Maintenance



Finish Care & Regular Maintenance



BEFORE



AFTER

Finish Care & Regular Maintenance





?'s

Thank You
