



FLORIDA LATH & PLASTER BUREAU

Portland Cement-based plaster (Stucco) is one of the most versatile building claddings. Concrete block is an excellent base for stucco. Stucco applied to concrete block is one of the most successful and popular building systems in Florida. This bulletin provides a global perspective on stucco construction around masonry window openings.



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Technical Bulletin

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Stucco Around Residential Masonry Window Openings – A Global Perspective

A Guide for Improved Construction:

Masonry construction is prevalent in Florida. Attention is often drawn to the proper installation methods of stucco around various window profiles used in masonry framed walls. At first glance it seems simple, but a review of the Florida Building Code (FBC), the Florida Residential Code (FRC), and their referenced standards, quickly reveals that the perimeter of a window is likely the most complex interaction of building materials, and sub-contractor responsibilities, that exists in the building envelope.

The focus of this bulletin is a global perspective of the various code requirements of typical residential stucco construction per FRC with the intent of minimizing/eliminating water intrusion around window openings. Commercial or Threshold buildings will likely have additional or more stringent requirements and are not considered here.

Due to complexity, this technical bulletin is for general educational purposes and the designer, building owner, contractor, and building official must work together in facilitating a functional building envelope.

FL&PB has decided to develop this Technical Bulletin to illustrate the complex nature of stucco construction around a window opening. This global perspective is intended to be a roadmap for the Architectural/Engineering community (A/E) and will cite Code, Standards, and Guidelines (CSG's). The codes are ever changing, and the challenge for the industry is to keep up with the CSG's.

Codes, referenced Standards and industry Guidelines:

The reader is reminded to reference the latest applicable CSG's for their project. It can't be emphasized enough that the devil is in the details. With changes in CSG's, products, and the lines becoming blurred between building envelope related trades, understanding the project details becomes more important. Most Florida construction professionals are familiar with the Florida Building Code (FBC) or Florida Residential Code (FRC), but there are other industry guidelines such as those from the American Architectural Manufacturers Association (AAMA), for window installation that impact the building envelope installation. AAMA and other similar associations have a large influence on industry practice as it relates to the building envelope. The A/E would be wise to carefully review all CSG's and construction documents related to the building envelope to determine how those documents affect the stucco application scope of work. Finally, the reader is reminded that some prescriptive portions of the code don't apply to certain Florida locations due to high wind conditions.

Below are CSG's in order of the typical construction sequence (use current code referenced versions or most recently publish versions):

The nomenclature used below is:

Underline = Florida Residential Code (FRC)

Italics = FRC Referenced Standards

Blue = Industry Guidelines/Practices

- **General Masonry Construction:**

- FRC Chapter 6 – Wall Construction—R606
- *ACI 530 & 530.1, "Building Code Requirements & Specifications for Masonry Structures"*

- **Fenestration:**

- FRC Chapter 6 – Section R609 – Exterior Windows and Doors
- *AAMA 100, "Standard Practice for the Installation of Windows with Flanges or Mounting Fins in Wood Frame Construction for Extreme Wind/Water Conditions "*
- *AAMA 200, "Standard Practice for the Installation of Windows with Frontal Flanges for Surface Barrier*

Masonry Construction for Extreme Wind/Water Conditions"

- *AAMA 250, "Standard Practice for the Installation of Non-Frontal Flange Windows with Mounting Flanges for Surface Barrier Masonry for Extreme Wind/Water Conditions"*
- *ASTM E2112, "Installation of Exterior Windows, Doors and Skylights."*
- *FMA/AAMA 500, "Standard Practice for the Installation of Mounting Flange Windows into Walls Utilizing Foam Plastic Insulated Sheathing (FPIS) with a Separate Water-Resistive Barrier (WRB)."*
- **Waterproofing:**
 - *FRC R703.4: AAMA 711, "Voluntary Specification for Self-Adhering Flashing Used for Installation of Exterior Wall Fenestration Products."*
 - *AAMA 800, "Voluntary Specifications and Test Methods for Sealants"*
 - *ASTM C920, "Standard Specification for Elastomeric Joint Sealants"*
 - *AAMA 714, "Voluntary Specification for Liquid Applied Flashing Used to Create a Water-resistive Seal around Exterior Wall Openings in Buildings "*
 - *AAMA 712, "Voluntary Specification for Mechanically Attached Flexible Flashing "*
- **Stucco:**
 - FRC Chapter 7 – Wall Covering, R703
 - *ASTM C-926, "Specification for Application of Portland Cement-based Plaster."*
 - *ASTM C-1063, "Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-based Plaster."*
 - *ASTM C-1861, "Standard Specification for Lathing and Furring Accessories, and Fasteners, for Interior and Exterior Portland Cement-Based Plaster."*
 - *ACI 524R, "Guide to Portland Cement-Based Plaster"*
 - *FL&PB TB-ST 05-14, "Choosing the Right Materials for Stucco in Florida"*
 - *FL&PB TB-ST 01-12, "Choosing the Right Block for Stucco"*
 - *FL&PB TB-ST 02-12, "Stucco on Block"*
 - *FL&PB TB-ST 03-12, "Tolerances: Concrete Masonry Infill & Stucco Exterior with Concrete Frame Buildings"*

- **Caulking / Painting:**

- AAMA 800, "Voluntary Specifications and Test Methods for Sealants."
- ASTM C-920, "Standard Specification for Elastomeric Joint Sealants."
- [ASTM C-1193, "Standard Guide for Use of Joint Sealants."](#)

Minimize your risk, know your part:

The primary purpose of this bulletin is to remind the reader that the industry is rapidly changing and that CSG's are becoming more complex with respect to construction and integration of the building envelope. Therefore, it is more critical than ever that the A/E know their scope of work and applicable CSG's to minimize risk.

Some of the questions below will assist in understanding your part in the project.

- What is the construction sequence?
 - Will the sequence inhibit proper installation of your scope?
- Construction plans and details: Who is the designer and are project specific construction details provided?
 - If there are no specific details, are you willing to assume responsibility for performance outside your control (i.e. if you provide the detailing, you are taking on the role of designer)?
- Rough opening and substrate construction quality and tolerances.
 - Accept or Reject?
- Flashing and/or sealant installation.
 - In scope or out of scope?
 - Accept or Reject?
- Attachment of accessories and how that affects the flashing and/or sealant.
- Final inspection of the building envelope to assure paint (where applicable) and sealant have been properly applied and complement the stucco installation.

As Code, Standards, and Guidelines change, new products are developed, buildings become tighter, and risks increase. Stucco has, and can continue to provide an aesthetically pleasing and durable building cladding, with proper construction and integration in a masonry wall assembly.

Even with a ideally detailed and constructed stucco clad building, maintenance is vital to post construction performance.

Maintenance:

No discussion on stucco would be complete without considering the importance of maintenance. The best construction materials and practices are wasted when proper and regular maintenance is lacking. This topic is so important that FL&PB has developed a separate Technical Bulletin TB-ST-04-12 "Stucco and Building Exterior Maintenance" available for review at www.flapb.com.

More to follow:

Due to the complexity of stucco construction around masonry openings, future bulletin(s) are needed to further outline the construction requirements specific to the various components of the building envelope integration with the stucco. FL&PB intends to develop future bulletin(s) to address the following:

- Conceptual design approaches for stucco construction.
- Proper flashing /sealant selection and installation.
- Stucco to window frame interface details.