



MAF CODE TALK

Openings in Masonry Walls for Residential Construction – What's New for the Mason

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The Florida Building Code, 2007 Edition, contains several new items related to the openings in masonry walls for fenestration openings. New provisions to the Florida Building Code, Building (FBCB) and Residential (FBCR) mandate inspectors verify the dimensions of rough openings and specify rough opening tolerances. The mason can expect increased scrutiny of rough opening dimensions during framing inspections where the inspector is required to verify the dimensions are within tolerances. A question has arisen regarding the reason the industry sponsored the code changes.

Background. To understand the reasons for placing the ACI 530 rough opening tolerances directly into the code, it is necessary to discuss the hurricanes of 2004 and the attendant water intrusion damage. Florida was hit by five hurricanes in 2004, three of which followed similar paths. Structural damage was limited and the touted reason was the "new Florida Building Code". In addition some have opined the structural damage was low primarily because the storms, with the exception of Charlie at landfall, were below the basic wind speed for building design. Regardless of the level of structural damage, tremendous water intrusion damage occurred in many parts of the state. The worst water intrusion damage occurred on the path of Frances, a slow moving very wet storm. Frances reportedly produced "horizontal rain" for four to seven hours and more in numerous locations. Water intrusion damage occurred in houses constructed of concrete masonry and wood frame with stucco. While many reports were written on the causes of the water intrusion, this article will focus on action taken by the fenestration industry addressing windows in masonry wall systems.

The fenestration industry proposed a code change requiring, among a myriad of other things, the application of a nine inch band of liquid flashing around all openings in masonry walls. Their belief was that the water passed through the masonry at the window. The masonry industry via the code consultant opposed the provision at the Florida Building Commission stating it was ineffective, had the potential to worsen the problem by causing delaminating of stucco, and that materials did not exist that would not cause a bond break for stucco finishes. The Commission agreed with the masonry industry and directed the masonry and fenestration industries to work together to propose a solution to the problem. Otherwise the state would devise a solution.

Meetings, discussion, and study revealed there were several prevalent aspects to the problem of water intrusion at the juncture of windows in masonry walls: 1. Openings were improperly sized. 2. Windows were not properly sized. 3. Proper sealants were not being used. The masonry industry decided to address problems 1 and 3.



Solution. The code consultant working with masonry and fenestration industry representatives proposed language to improve the specification of rough opening sizes and to verify the dimensions are in accordance with the approved plans. This was accomplished by placing the ACI 530 tolerances within the residential code and referring to the approved plans. The ACI 530 provisions are not actually new requirements in residential construction. Previously, the tolerances should have been observed because ACI 530 is adopted by reference within the Florida Building Code. Placing the requirements directly into the code should result in a greater awareness by the designer, the builder, the masonry contractor, and the mason. Accordingly, the following new section was added to the Florida Building Code, Residential (FBCR):

FBCR “§R606.13 Masonry Opening Tolerances. Masonry rough openings may vary in the cross section dimension or elevation dimension specified on the approved plans from – ¼ inches (6.4 mm) to + ½ inches (12.7 mm). For exterior window and door installation provisions see Sections R613.7 and R613.8.”

In addition, language was added to provide for a window perimeter sealant joint a maximum of ¼ inches in width and to provide for standards for sealants used.

FBCR “§R613.8 Flashing, sealants and weather-stripping. Flashing and sealants for exterior windows and doors shall comply with Section R703.8.

§R613.8.1 All exterior fenestration products shall be sealed at the juncture with the building wall with a sealant complying with AAMA 800 and ASTM C 920 Class 25 Grade NS or greater for proper joint expansion and contraction, ASTM C 1281, AAMA 812, or other approved standard as appropriate for the type of sealant.

§R613.8.2 Masonry rough openings. Masonry rough opening dimensions shall be within the tolerances specified at Section R606.12 and in addition shall provide for a window perimeter sealant joint a maximum of ¼ inches in width.”

Finally, language was added to the Florida Building Code, Building requiring verification of the rough opening dimensions during the framing inspection.

FBCB “§109.3 Required inspections. The building official upon notification from the permit holder or his or her agent, shall make the following inspections, and shall either release that portion of the construction or shall notify the permit holder or his or her agent of any violations which must be corrected in order to comply with the technical codes. The building official shall determine the timing and sequencing of when inspections occur and what elements are inspected at each inspection.



Building. Framing inspection. To be made after the roof, all framing, fireblocking and bracing is in place, all concealed wiring, all pipes, chimneys, ducts and vents are complete and shall at a minimum include the following building components:

- Window/door framing
- Vertical cells/columns
- Lintel/tie beams
- Framing/trusses/bracing/connectors
- Draft stopping/fire blocking
- Curtain wall framing
- Energy insulation
- Accessibility.
- **Verify rough opening dimensions are within tolerances.**

So, how has all this benefited the industry, the masonry contractor, and the mason? Without masonry industry involvement in the code development process, masons would now be required to comply with provisions too numerous to list here developed by parties neither intimate with nor clearly understanding masonry. In addition to the liquid flashing requirement, the fenestration industry proposal attempted to specify requirements for sills, attachment, and a myriad of other topics. Working with the fenestration industry the modifications offered by the masonry industry should result in fewer problems with window installations in masonry structures. Masons may expect greater scrutiny of the dimensions of rough openings on framing inspections in residential and commercial construction. Masonry contractors and masons should make a point of verifying that the "approved" plans contain adequate and proper information depicting the location and size of rough openings. The end result will be better masonry buildings, reduced problems for the mason, and a satisfied customer.