BBRS Official Interpretation No. 2012_09

Date: January 8, 2013
Subject: 8th Edition 780 CMR, Base Volume, Requirements for replacement windows.

Background/Discussion:
When code guidance is sought for replacement windows there are at least four code sections in the Base Volume that deal with this topic:

- *International Building Code* (IBC), Section **2401.2 Glazing Replacement**, which reads, *'The installation of replacement glass shall be as required for new installation.'*
- *International Existing Building Code* (IEBC), Alteration – Level 1 Section **403.1 Scope**, which reads, *'Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements equipment of fixtures that serve the same purpose.'* and Section **306 Glass Replacement**, which reads, *'The installation or replacement of glass shall be as required for new installations.'*
- *International Energy Conservation Code* (IECC), Section **101.4.3 Additions, alterations, renovations or repairs**, which in part reads, *'Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction…'*

This official interpretation is provided to address the apparent overlap of these requirements and considers the absence of evidence that hurricanes cause widespread damage of building fenestration in MA.

QUESTION 1
For buildings in wind borne debris regions do replacement windows need to comply with ***both*** wind borne debris protection ***and*** energy conservation requirements?

ANSWER 1
When the project involves mainly removal and replacement of the existing windows, that is a Level 1 Alteration;

- Wind borne debris protection: *No*
- Energy conservation: *Yes*

Replacing windows is a typical existing building project so the code that applies is the IEBC and not Chapter 24 of the IBC. This is considered a Level 1 alteration, which is defined as *'the removal and replacement or covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose* (emphasis added here)'. So, for example compliance to the IECC, section 101.4.3 would dictate energy conservation requirements, since a 'purpose' of the original windows was energy conservation. The original windows had other functions as well but in general, the replacement windows need not comply with the wind borne debris requirements since this was not likely a 'purpose' of the original windows.

If an existing building project is 'significant' whereby it is essentially considered 'new' construction which will likely include an analysis of the structure of the building, then the IBC applies and not the IEBC. So, it may be reasonable for the building official to invoke wind borne debris protection of openings. In this case, an analysis of the structure of the building, using an assumption of either a 'closed', 'open', or 'partially enclosed' building per ASCE-7, will help the owner decide if adding opening protection is a cost effective option.

This official interpretation only applies to the energy conservation and opening protection requirements for the replacement of exterior *windows.* If other systems which contain glass (like interior doors or rail guards) are being replaced then the code for new construction likely applies to those items.