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**To:** ICC-ES Evaluation Committee  
**From:** Yamil Moya, P.E.  
**Date:** January 28, 2010  
**Subject:** Proposed Revisions to the Acceptance Criteria for Building-integrated Photovoltaic Roof Panels, Subject AC365-0210-R2 (YM/CA)

**MEMO**

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Public comments have been received regarding the subject criteria. The comments are posted on our website and will be available at the Evaluation Committee meeting.

The following are staff responses to the letter dated January 14, 2010, from DuPont:

1. With regard to items 1 through 8 of the letter, and Section 3.2.5.4 of the proposed revisions to AC365 addressing UV exposure testing of BIPV roof modules, the writer recommends that the provisions of IBC Section 1504.6 (2000 hours of exposure) be applied to both low-slope and high-slope roof applications. The reason the proposed revisions to the criteria allow testing in accordance with the 1000-hour exposure per Section 25 of UL 746C for high-slope applications is that the BIPV roof module is only one layer of the complete roof covering system. As defined in Section 1.4.3 of AC365, the BIPV roof module will be self-adhered to either the top layer of single-ply membranes, to the top layer of built-up roofs or to metal roof panels. ICC-ES staff is seeking input from the public as to whether there is a need to conduct testing in accordance with IBC Section 1504.6 for BIPV roof modules where installation is limited to high-slope applications (roof slopes equal to or greater than 2:12).
2. Item 7 of the letter states that it is unclear whether Section 3.2.5.4 of AC365 is intended to test the individual polymeric films used in the construction of the BIPV roof module or the entire BIPV roof module. It is the understanding of ICC-ES staff that the laboratory tests the entire BIPV roof module and, if necessary, separately tests the thin-film materials used to construct the BIPV roof module. With regard to UV exposure testing in accordance with Section 3.2.5.4 (Section 25 of UL 746C), ICC-ES staff relies on the laboratory to determine whether testing of the thin-film materials is necessary for their evaluation under UL 1703. ICC-ES staff is seeking input from the public regarding the need to clarify, in Section 3.2.5.4, that the test specimen is to consist of the entire BIPV roof module and, if required by the laboratory, any thin-film materials used to construct the module.

3. In the editorial comment section of the letter, the writer requests that Section 3.1.4.2.2 of AC365 be revised to require that the BIPV roof modules be tested in the same manner as the BIPV roof panels. The durability requirements in Section 3.1.4.2.2 for the weather-exposed polymeric or elastomeric materials used in construction of the BIPV roof panels include the applicable requirements from Section 3.2 (plastic tiles and panels) of the ICC-ES Acceptance Criteria for Special Roofing Systems (AC07). Since the BIPV roof module is the top layer of the roof covering system incorporating either single-ply membranes, built-up roofs or metal roof panels, as defined in Section 1.4.3 of AC365, ICC-ES staff feels that the provisions of Section 3.2.5. adequately address durability of the BIPV roof modules. Therefore, ICC-ES staff does not support the proposed change requested in the editorial section of the letter. If future submittals of BIPV roof modules intend for the modules to be applied directly to the roof deck, or over code-complying underlayment applied directly to the roof deck, ICC-ES staff will require evidence of compliance with IBC Section 1504.6 for both low-slope and high-slope applications, and will revise Section 3.2.5.4 of AC365 accordingly.