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To: ICC-ES Evaluation Committee
From: Yamil Moya, P.E.
Date: January 26, 2010
Subject: Proposed ICC-ES Acceptance Criteria for a Low-profile, Raised-deck System Installed over a Roof Assembly or Exterior Structural Floor Substrate, Subject AC423-0210-R1 (YM/BG)

MEMO

The following correspondence responding to AC423 has been received and is posted on the ICC-ES website:

1. Letter from Rick Olson of the Tile Roofing Institute, dated January 17, 2010
2. Letter from Ted Devit of Devit Consulting, dated January 19, 2010.

Staff would like to present the following responses to the correspondence:

1. **Letter from Mr. Olson.** Staff agrees with Mr. Olson's suggestion that the provisions found in TAS 108 are not applicable as written to the raised-deck system for evaluating wind resistance. Staff would like to seek input from the public regarding specific test guidelines to evaluate wind resistance of the raised-deck system.
2. **Letter from Mr. Devit.**
 - a. Item 1 of the letter indicates that the area under the deck panels will not be used for storage or as a plenum. Staff agrees that the area under the raised-deck system should not be used for storage or as a plenum. Staff would also like to seek input from the public as to whether the concealed space requirements of Section 717 of the IBC, should be applicable for exterior installations.
 - b. Item 2a of the letter indicates that testing was conducted in accordance with ASTM E 330, and it was found that the capacity of the test equipment was reached before sufficient pressure was applied to pull up the deck panels. It is staff's opinion that the ASTM E 330 test procedure does not effectively simulate wind load conditions that may be created when the raised-deck system is installed on a roof. As indicated in item 1 of this memo, staff believes that the prescriptive provisions found in TAS 108 are not applicable. A wind tunnel test procedure needs to be developed to address the wind test scenario, test specimen configuration, and instructions

indicating how the generated test data will be analyzed to establish design pressure complying with the provisions found in Section 1609 of the IBC.

- c. Item 3 of the letter states that the criteria should be limited to Seismic Design Category (SDC) A. Section 6.4 of the proposed criteria states that recognition is limited to SDC A. Staff would like to seek input as to whether the pedestal and deck panels of the raised-deck system need to be positively attached when recognition is limited to low seismic (SDC A) regions.
- d. Staff would like to clarify item 4 of our December 29, 2009, letter. The letter states that the scope of the criteria does not include recognition for Occupancies where there is a concentrated load, as shown in Table 1607.1 of the IBC. However, staff would like to point out that in some cases, the raised-deck system may be utilized where there is a concentrated load requirement. This may be achieved provided the load effects created by the concentrated load are not greater than the uniform live load. No change to the proposed criteria is needed as a result of this clarification.
- e. Item 5a of the letter states that ASTM E 108 spread of flame and burning brand tests have shown that the raised deck system achieves a Class A roof classification. ASTM E 108 indicates that spread of flame tests are only required when installation is limited to noncombustible decks. For combustible decks, the spread of flame, burning brand and intermittent tests are required. It is staff's opinion that the roof classification tests should be conducted on a complete roof assembly, including the roof covering and raised deck system, for which recognition is sought. It is staff's opinion that the installation of the raised-deck system above an approved roof covering may affect the roof classification, and therefore a complete assembly should be tested.
- f. Item 6 of the letter states that the primary function of the perimeter containment is to resist seismic loading. Staff agrees that the perimeter containment will serve to resist seismic forces. However, it is not clear how the seismic forces will be effectively transferred to the perimeter if the pedestals and deck panels are not positively attached to the supporting structure. In addition to resisting seismic forces, staff believes that the perimeter containment is crucial for laterally supporting the raised deck. However, there is no information in the code to determine what this lateral load should be. The response of the perimeter containment, in relation to wind loading, needs also to be addressed.
- g. Item 7 of the letter states that the maximum roof slope should be $\frac{1}{2}$:12. Staff would like to seek input from the public, as to whether this would be an acceptable limit.