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April 24, 2013

Artezanos, Inc.  
9455 S.W. 78<sup>th</sup> Street  
Miami, Florida 33173  
Att. Dan Arguelles

Re: State of Florida Approval #: FL16057

Dear Mr. Arguelles:

Pursuant to your request, we have conducted a cursory review of the documents available on the State of Florida Department of Business and Professional Regulation website that were submitted to obtain a State of Florida Product Approval for the Alhambra, clay, barrel, roof tile, State of Florida Approval #: FL16057.

Our comments are as follows:

1. The Florida Building Code, 2010, Section 1507.3.4 Clay Tile states: "Clay Tile shall comply with ASTM C 1167. Chapter 35 of the code identifies ASTM C1167-03.
2. On the website under Installation Instructions and Evaluation Reports is a Product Evaluation Report dated 2/15/13, signed and sealed by Jesus Gonzalez, P.E. that references an ASTM C1167-03 report prepared by IBA Consultants, Inc., Report #2354-198, Date 6/27/07. A copy of the report is not available on the website.
3. Most likely, the IBA report reference was conducted in compliance with the 2004 Florida Building Code whereby ASTM C 1167-96 was the required standard. There were significant changes to the standard between the 1996 version and the 2003 version, as related to Tolerances on Dimensions and Weight.
4. On the website under Evaluation Reports is a report identified as Quarterly Report, Lab Report No. 121066, dated 2/8/13, issued by Florida Tec, and signed and sealed by Alberto Cardona, P.E.
  - a. The report states that "The tiles submitted meet the Florida Building Code (TAS-112-95) & A.S.T.M. C67."
  - b. TAS 112-95 is the Standard Requirements for Concrete Roof Tiles.
  - c. ASTM C 67 is the Standard Test Method for Sampling and Testing Brick and Structural Clay Tile.

- d. Some of the methodologies provided in ASTM C 67 are referenced and utilized by ASTM C 1167, however; it is not the appropriate test method to evaluate clay roof tiles.
- e. Specifically on the test report: the average tile length and butt end width would not meet ASTM C 1167-03 whereby "the average dimensions measured shall not be less than the nominal dimensions specified by the supplier." (17.32" < 17.5" & 8.30" < 8.5").
- f. ASTM C 1167-03 requires 5 tiles to be tested for absorption. Only 3 results are reported.
- g. ASTM C 1167-03 requires the absorption to be calculated and reported as a percent not "(lb/ft)".
- h. ASTM C 1167-03 requires the tiles to be classified as Grade 1, 2, or 3 based on the 24 hour cold water absorption and saturation coefficient based a the 5 hour boil for Grades 2 & 3. In lieu of the absorption requirements, the manufacturer may test for freeze-thaw as a more realistic indicator of the durability of the tile. In any event, the evaluation criteria listed on the report "< 18-Average 3" is not an ASTM C 1167 criteria. Since, the northern sections of Florida are identified by ASTM C 1167-03 as Moderate Weathering Regions a Grade 1 or Grade 2 would be recommended in these areas.
- i. ASTM C 1167-03 requires the tile to be tested for efflorescence and reactive particulates. Neither test is reported.
- j. Page 5 of 5 of the report states "All tiles were suspended immersed in water to obtain weight of unit (TYPICAL)". This is not required by ASTM C 1167-03.
- k. Florida Tec Management Services, Inc. is listed on the State of Florida website FBC Organization #: TST9984 which provides Miami-Dade County Laboratory Certificate 12-0130.40 for Florida Tec Management Services, Inc. d/b/a Florida Tec whereby the laboratory is certified to perform TAS 112, however; ASTM C 1167 is not on the list.

The above review is related to the public record documents available as of 4/24/13, on the State of Florida Department of Business and Professional Regulation website and is not intended to provide opinion or bias concerning the product, testing laboratory, or the engineers associated with the approval of the product.

Respectfully submitted,

Tony Porcello, RRO  
Principal  
American Test Lab of South Florida