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Mr. Clint Shimon
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Efflorescence Potential of Ceramic Tile Grout
CTLGroup Project No. 391642

Dear Mr. Shimon:

One sanded grout product was submitted by H.B. Fuller for efflorescence emittance tests. The grout product for evaluation was identified as Hydroment® Vivid™ - Bostik (Flash Walnut). Visual observations of any presence of efflorescence were recorded at different times of curing: 3 days, 7 days, and 28 days. Fabrication and testing of the specimens were performed at CTLGroup in a controlled environment of 73±3°F and 50±5% RH under your surveillance and direction.

CTLGroup prepared and applied the grout product to the provided tile boards according to the manufacturer's recommended instructions. For the referenced product, three specimens were prepared. No sealers were applied to the exposed surfaces of the grout. The fabrication procedure is detailed in Table 1.

Table 1. Fabrication Procedure of Test Specimens

Fabrication Procedure
1. Weigh liquid and dry component materials.
2. Add the dry mix to the mixing liquid in a small, clean bucket.
3. Use drill and paddle to mix thoroughly for approximately two minutes until the material is consistent.
4. Stop mixing and scrape down the sides and bottom of the bucket.
5. Allow grout mixture to slake for approximately three minutes.
6. Re-mix the grout briefly with drill and paddle for approximately 30 seconds.
7. Apply the grout mixture to tile board using a hard rubber float.
8. Allow tile grout board to set for 20 minutes.
9. Carefully remove excess grout from the board using a soft wet sponge without disturbing grout lines.
10. Allow tile grout board to cure in laboratory air [72 ^{0}F and 50% RH] for the duration of the test.

As requested, a 2-inch square silicone caulk dam was applied around the center of a grout line as shown in Figure 1. After the silicone had hardened, 2 ml. of deionized water were applied to the specimens at the specified age in the center of the tile within the silicone dam as shown in Figure 2. The water was allowed to pond over the specimens, and any presence of efflorescence was assessed after 24 hours.

Figure 1. Grout sample tile with silicone caulk dam around center

Figure 2. Grout sample specimen after 2 ml of deionized water have been applied in the center of grout lines

Efflorescence was observed on all the specimens prepared with Hydroment® Vivid™ - Bostik (Flash Walnut) at all test ages. Photos of the test results for the submitted sanded grout are presented in APPENDIX A.

We appreciate the opportunity to conduct specialized testing for you. Should you have any questions, please contact us.

Sincerely,

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APPENDIX A

Figure A-1. Hydroment® Vivid™ - Bostik in Flash Walnut grout sample at 3 days of curing during efflorescence emittance test

Figure A-2. Hydroment® Vivid™ - Bostik in Flash Walnut grout sample at 3 days of curing after efflorescence emittance test

Figure B-1. Hydroment® Vivid™ - Bostik in Flash Walnut grout sample at 7 days of curing before efflorescence emittance test

Figure B-2. Hydroment® Vivid™ - Bostik in Flash Walnut grout sample at 7 days of curing after efflorescence emittance test

Figure C-1. Hydroment® Vivid™ - Bostik in Flash Walnut grout sample at 28 days of curing before efflorescence emittance test

Figure C-2. Hydroment® Vivid™ - Bostik in Flash Walnut grout sample at 28 days of curing after efflorescence emittance test