

ECM

(FL BPE CA #8419)

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To: Paul Shamblin

From: John H. Elamad, MS, PE, SI, CGC, DFE *JHE*

Date: 1/23/2023

Re: Balcony Tile Installation
Majestic Beach Resort Condominiums
Panama City Beach; Bay County, FL

As requested, I am providing recommended tile installation specifications for condominium unit balconies. The purpose of the inspection was to address the Building HOA Board's concern that installing tiles on your balconies could cause long-term deterioration of the structural concrete slab. Based on my inspection and review, the following is a summary of my comments, findings, and recommendations:

1. Although exposed concrete balconies are not always the most attractive, unless a properly specified foot traffic coating or a floor covering material is professionally installed according to manufacturer's instructions, premature deterioration of the concrete and reinforcing steel can occur. Such concrete deterioration is the result of corrosion of the reinforcing steel, which creates internal pressures within the concrete causing spalling.
2. Coverings, such as glued indoor/outdoor carpeting, cracked or deteriorated ceramic tiles, and inappropriate concrete paint can trap water against the concrete surface. This prolonged exposure to moisture causes scaling of the concrete reducing the concrete cover of the reinforcing steel which will allow moisture to reach and corrode the reinforcing steel.
3. It is important to ensure a properly finished surface positive slope to prevent ponding and allow water to freely drain away from the inner surface of the balcony to the edges.
4. It is my understanding that the entire building envelope was coated and sealed. Furthermore, waterproofing traffic bearing membranes specifically designed and applied on all vertical and horizontal elements (walls, floors and balcony slabs..etc.) to protect them. These membranes form a waterproofing coating that prevents moisture from penetrating the surface of concrete to corrode the reinforcing steel bars.
5. After balconies surfaces are properly prepared by vacuuming, washing, and drying all surfaces, Bostik Dimension RapidCure Glass-Filled, Pre-Mixed, Urethane Grout Binder should be installed as a grout bed, over the previously sealed/coated/waterproofed surfaces by the HOA

in order to create or ensure the required positive slopes to drain the top surface of balconies prior to installing any tile.

6. Recommendation is that an impervious porcelain tile be installed rather than a ceramic tile. Bostik NeverSeal commercial grade pre-mixed grout should be used to grout joints between the tiles. Bostik NeverSeal grout is a recommended and approved good product, since it is water-based, water resistant, and provides protection against staining and cracking. This product is a fast setting/curing grout and never needs to be sealed.
7. It should be noted that impervious porcelain tiles have a moisture absorption rate of less than 0.5%. A vitreous porcelain tile has a moisture absorption rate of 0.5%-3%. A ceramic tile has a moisture absorption rate of 3%-7% and are not recommended for installation on exposed concrete balcony surfaces. A schluter edge should be installed along the balcony edge to provide a clean and sealed edge.
8. Based on the methods and products recommended to prepare balcony surfaces to receive the porcelain tile, it is our professional opinion that the structural integrity of the reinforced concrete floor/balcony slabs will not be adversely impacted not structurally compromised by the presence of impervious porcelain tiles. Properly installing and using the correct applications coupled with creating a positive surface slope on the balconies should help minimize the commonly noted concrete deterioration problems of coated or covered other slab surfaces.
9. Finally, to increase the life span of the balcony tiles, it is highly recommended to implement the Tile Manufacturer's care and maintenance protocols.

If you have any questions or require additional information, please contact me.

Sincerely,

ECM

(FBPR CA 8419)

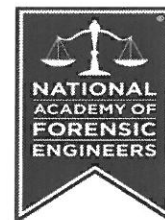
John H. Elamad

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Digitally signed
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Senior Member