

# “I Want to Cover My Concrete Balcony.”

Your attempt to cover the surface of your concrete balcony may be causing more harm than good. Exposed concrete balconies are not always the most attractive, however, certain types of balcony coverings can contribute to premature deterioration of the concrete and reinforcing steel.

Concrete deterioration is the result of corrosion of the reinforcing steel, which creates internal pressures within the concrete causing spalling. Coverings, such as glued indoor/outdoor carpeting, cracked or deteriorated tiles, and inappropriate concrete paints 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. The reduced cover will allow moisture to reach and corrode the reinforcing steel.

We do not recommend the use of glued or loose laid carpets as they typically stay wet for an extended period of time, trapping moisture against the balcony slab surface, increasing the chance of surface scaling.

Now that we have identified the problem, what makes for an appropriate concrete balcony covering?



*Figure 1: Surface Scaling*



*Figure 2: Surface Spalling*



## Selecting a Covering

The three main considerations to keep in mind when selecting a balcony covering are:

1. Does the covering form a waterproof barrier preventing moisture from reaching the concrete?
2. Does the covering promote free drainage beneath allowing water to drain from the surface of the balcony?
3. Can the covering be easily removed during the winter?
4. Is the covering breathable, allowing drying of the balcony surface?

Let's examine some appropriate coverings.

## Traffic Bearing Membranes

Traffic bearing membranes are coatings which are specifically designed to be applied on horizontal concrete surfaces such as balcony slabs. These membranes form a waterproofing coating that prevents moisture from penetrating the surface of concrete. They're abrasive and require touch ups every 15 years, but do an excellent job protecting the slab.

## Permanent Tiles

It's important to know that not all types of tiles are appropriate for the use on a balcony surface. Certain materials, such as ceramic, can absorb moisture leading to cracking during freeze thaw cycles. Therefore, proper selection of low absorption materials is critical to the long-term maintenance of the tile. Tile sealers are also available in the market that will help to prevent moisture absorption. Tile sealers typically require reapplication every 4 to 6 years.

Failure of the grout, either by deteriorated or cracking, will allow moisture to penetrate beneath the tile where it will be trapped against the balcony slab. Freeze thaw action will cause further deterioration of the tile. Proper maintenance of the tile and grout is important.

We recommend that the installation of tile be incorporated with either a concrete sealer or membrane to provide added protection in the event the grout joints in the tile fail.

## Removable Tiles

Removable tiles typically consist of a plastic base with a finished surface of composite, wood, or stone. They come in a variety of colours and sizes and are easy to install. The tiles are loose laid onto the surface of the balcony and snap together to form a continuous flooring cover. The plastic base elevates the tile away from the surface of the



balcony allowing moisture to drain. Removable tiles can be left in place all year round.



*Figure 3: Removable Balcony Tile with Wood Finish*

For a condominium owner, it's important to consider that the balcony of your unit is commonly an exclusive use common element. Modifications to the balcony or application of coverings may require Board approval. Make sure to speak with your Board or Property Manager prior to completing any modifications to your balcony.

For more information, other resources or to discover what Keller Engineering can do for you, visit [kellerengineering.com](http://kellerengineering.com).