

### 1. Product:

Li-IR  
Reflectance

### 2. Coverage Rates:

250 - 500 sq ft/gal  
6.14 -12.58 sq meter/litre

Actual coverage rates determined by the absorbency rates of concrete elements and desired finish appearance.

### 3. Recommendations:

Typical precast concrete with 18-20 MPa 14 hour strength having water to cement ratios of .40 or lower should work well with this stain. Once the patching has been completed the stain can be applied within hours of demolding. Any excess residue of the form release agent should be removed. Any dust accumulation from storage in the yard should be removed. The principle strength of silicate stain is its petrification within the substrate. This results in a solid mineral and insoluble compound of stain on the surface and inside substrate (concrete natural stone, marble, etc). When applied to materials containing Portland cement, the silicate reacts with incompletely hydrated cement particles, converting unreacted calcium hydroxide (CaOH<sub>2</sub> or hydrated lime) to harder calcium silicate hydrates. This reaction will result in a very strong bond between the stain, the pigments and fillers in the stain and the concrete surface. This, along with other film forming agents, will create a strong abrasion resistant surface on the panel. These chemical bond locks the stain into the subsurface as opposed to organic coatings that sit on the surface. These stains are alkaline and therefore inhibit microbial

growth and will not contribute to the growth of mold, algae or mildew.

Due to its crystalline nature the stain will have high water vapor permeability, which ensures that humidity present in the concrete can freely pass from the substrate. Thus water cannot build up between the stain and the substrate. This can cause traditional stains and paints to crack, bubble and peel and is also the factor that prevents the other stains on the market from being able to be applied to very young, freshly cast concrete that still has a high moisture content.

In addition to using infrared Reflecting technology, the stain's binder forms a micro-crystalline structure, which itself reflects light and heat. In hot climates this reflective property can help reduce the thermal stress of the structure due to day/night temperature fluctuation, reducing the amount of cracking the substrate would normally undergo. Reduced cracking of the concrete will in turn help protect the steel reinforcement in the concrete from external factors that break it down, such as salts or carbonic acid, extending the life of the structure itself.

