

## Technical Bulletin #16 Key Epocon SL Preferred Moisture Mitigation System

### Concrete Moisture Vapor Emission Rate (MVER) Limit and Moisture Content Limit

#### Key Epocon SL - Preferred Moisture Mitigation System

The following information pertains to all Key Resin Flooring Systems, Key Epoxy Terrazzo and Key Resin Coating Systems that are inherently moisture sensitive. Calcium Chloride moisture testing (ASTM F-1869-11) which exceeds the maximum limit of 3 pounds of moisture vapor per 1000 square feet per 24 hours is considered excessive as referenced in Key Resin Technical Bulletin #1. Relative Humidity In Situ Probe moisture testing (ASTM F-2170-11) readings of 80% or greater are considered excessive as referenced in Key Resin Technical Bulletin #1. With the assumption that either test will be performed under the conditions stipulated in the ASTM standards (including the requirement to perform the test while the building space is climatized to “at use” conditions), if either test method or any individual test result confirms excessive moisture, a moisture mitigation treatment is recommended to reduce the risk of moisture related blister formations. Recommendations for the entire concrete slab are based on the highest individual test result for either test method, test results are not averaged.

It is Key Resin Company’s position (and general resinous flooring industry consensus) that if test results are less than 80% RH and less than or equal to 3 lbs. that the likelihood of a moisture related failure is very low. If the floor is installed with moisture test readings higher than these limits, there is greater risk to have moisture related disbondment (blister formations). Historical project reports since Key Resin’s founding in 1993 confirms this to be accurate. Therefore, Key Resin advises that these maximum moisture conditions be met prior to the installation of Key Resin materials. Keep in mind that pre-installation moisture testing is a measurement at a specific point in time and moisture levels may change in the future. For this reason, moisture mitigation should always be considered if added protection is desired by the building owner, regardless of test results.

It is important to clarify material warranties: Key Resin’s Standard Limited Material Warranty is provided with *all* materials manufactured and sold by Key Resin, regardless of whether or not a moisture mitigation system is used. This warranty covers material failures that are a result of defective manufacturing, refer to the Key Resin Standard Limited Material Warranty document for further information. There are various exclusions in the Standard Limited Material Warranty, one exclusion is loss of bond due to excess moisture in the concrete or anything that would not be determined to be a material defect, e.g., adequate surface preparation, hydrocarbon contaminants, etc. Key Resin will *only* warranty a floor against moisture related bond failure if the proper/approved Key Resin moisture mitigation system is used under the flooring system that is specified, regardless of pre-installation moisture test results. This is general industry practice with most if not all floor covering material manufacturers and flooring adhesive manufacturers of moisture sensitive materials.

**Key Epocon SL** is the preferred treatment for any level of excessive moisture due to superior performance as a “reservoir” system and the ability to tolerate unlimited moisture levels. Regardless of pre-installation moisture test data, moisture levels may increase in the future with concrete slabs on grade if there is a damaged or nonexistent moisture vapor retarder. Key Epocon SL consists of a unique water-based epoxy that has microscopic porosity which serves as a buffer layer to diffuse the moisture drive and/or eliminates the osmotic cell reaction that leads to the potential formation of blisters in the floor covering. Key Epocon SL must be applied over concrete that has a minimum of 5 days cure at 70°F. It is

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advisable to wait a minimum of 30 days to reduce the possibility of excessive joint contraction caused by shrinkage of the concrete. Required surface preparation is mechanical removal of laitance and profiling to a minimum CSP-3 surface profile following Key Resin recommendations. Key Resin moisture mitigation warranties require pre-approval which includes a detailed review of site conditions and installation requirements.

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