



KEY #635-MVT

MOISTURE VAPOR TREATMENT

DESCRIPTION

KEY #635-MVT is a two component, modified epoxy system designed to seal concrete and reduce moisture vapor transmission prior to applying finished flooring. **KEY #635-MVT** has proven to reduce moisture vapor emissions and be resistant to damage from high alkalinity, it is an environmentally friendly material containing no hydrocarbons or other solvents making it zero (0) VOC. **KEY #635-MVT** meets USGBC LEED certification requirements.

KEY ADVANTAGES

- Reduces moisture vapor emission rate through concrete
- Resistance up to 10 lbs MVER on the Calcium Chloride Test (ASTM F-1869-11)
- Resistance up to 90% RH on the RH Probe Test (ASTM F-2170-11)
- Provides excellent resistance to highly alkaline conditions
- Excellent bond to properly prepared concrete
- Convenient 2:1 mixing ratio
- High physical properties
- Can be rapidly surfaced with a variety of finished flooring materials

KEY CONSIDERATIONS

- Substrate temperature must be a minimum of 55°F before, during and 72 hours after installation.
- Must have effective vapor barrier directly under substrate.
- For use only on properly prepared shot blasted surfaces with a minimum surface profile of CSP-3; substrate must be free of dirt, waxes, curing agents, densifiers, hardeners, fiber reinforcement, ASR byproducts, and other foreign materials. Prepared substrate must pass water absorption test, contact Key Resin for details.
- Do not use on lightweight concrete slabs unless approved by Key Resin Technical Service.
- Does not function as a crack reflective membrane.
- Does not prevent damage or disbondment caused by ASR (Alkali Silica Reaction), high levels of unreacted silicates (metasilicates), metallic shake-on hardener treated concrete, or hydrocarbon contamination.

TYPICAL USES

- **KEY #635-MVT** is designed as a negative side moisture vapor retarder to reduce moisture vapor transmission through concrete as required by moisture vapor sensitive floor coverings.
- **KEY #635-MVT** can also be an effective primer for fast recoat under Key Resin flooring systems.

COMPOSITION

KEY #635-MVT is a highly cross-linked, alkaline resistant epoxy composition.



TYPICAL PROPERTIES & PERFORMANCE DATA

Tensile Strength	ASTM-D-638	10,400 psi
Tensile Elongation	ASTM-D-638	2 - 4%
Modulus of Elasticity	ASTM-D-638	2500 psi
Bond Strength to Concrete	ASTM-D-4541	400-500 psi (varies by concrete strength) 100% Concrete Failure
Permeability	ASTM E-96	1 Coat (10-12 mils WFT) - 0.09 Perms 2 Coats (20 mils total WFT) - 0.04 Perms
Water Vapor Transmission Grams/hr/sq. meter	ASTM-E-96	1 coat - 0.023 2 coats - 0.012
Alkaline Resistance	7 day Immersion 14 day Immersion ASTM-D-1308	10% Sodium Hydroxide - unaffected 50% Sodium Hydroxide - unaffected 10% Sodium Hydroxide - unaffected 50% Sodium Hydroxide - unaffected
Hardness Shore D	ASTM-D-2240	85
VOC		Zero
Water Absorption	ASTM-D-570	Nil
Mix Ratio		2:1 by Volume
Pot Life/Working Time		25-35 Minutes
Recoat Time (of 1 st Coat only*), Minimum		4-6 Hrs. at 75 degrees F.
Maximum		24 Hrs.

*2nd coat requires aggregate broadcast or thorough sanding prior to floor system installation

APPLICATION

SURFACE PREPARATION

Surface preparation is the most critical portion of any successful resinous flooring system. All substrates must be properly prepared with shot blasting ONLY (unless other method is approved by Key Resin) to achieve a minimum CSP-3 surface profile. Prepared substrate must pass water droplet absorption test, contact Key Resin for details. Work must be performed by trained or experienced contractors or maintenance personnel. **KEY #635-MVT** is a moisture vapor suppressant for concrete substrates. Surface and air temperature must be a minimum of 55°F during installation and cure.

Concrete surface must be free of dirt, waxes, curing agents, any other foreign materials, and must be structurally sound. Surfaces must be vacuum shot blasted to "open" surface porosity, grinding or acid etching are not permitted. Surface profile must be a minimum CSP-3 to CSP-5 profile according to International Concrete Repair Institute (ICRI) Guideline 310.2R-2013. Verification must be confirmed at the discretion of Key Resin Company using ICRI surface profile comparator chips (available from icri.org) and/or according to ASTM D-7682 using test putty supplied by OTB Technologies, test samples sent to Key Resin Company. Slabs that have been treated with silicate based densifiers or metallic shake-on hardeners or liquid hardeners may not be suitable for **KEY #635-MVT**, consult with Key Resin for further details. Core sample testing should be considered to verify the presence of these contaminants.

Concrete slabs must be tested for moisture content according to ASTM-F-2170-11 (Relative Humidity in Concrete Floor Slabs Using in situ Probes) and optionally at Key Resin's discretion according to ASTM-F-1869-11 (Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride). Standards are available for purchase at www.astm.org.

KEY #635-MVT must be applied a minimum of 12-14 mils above the highest points of the surface profile for readings up to 10 lbs on the calcium chloride test and readings up to 90% on the relative humidity probe test. This may require a total of 20-24 mils of resin divided between two applications. For higher readings consult with **Key Resin Technical Service** regarding alternate moisture vapor control materials. It is optional to lightly mist the prepared concrete substrate with water to achieve a "saturated surface dry" (SSD) condition, which may help to reduce concrete outgassing. Do not puddle water or leave a glistening wet surface. Refer to the detailed Installation Instructions document for important additional requirements.

Fill all cracks and non-moving joints with **KEY #635-MVT**. If material continues to disappear into the void, add fumed silica (Cab-o-Sil, Aerosil) to get a gel consistency and "putty" into the void to completely seal. Detailing with **KEY #580** crack isolation membrane and fiberglass scrim is done after the **KEY #635-MVT** application. If joint is to be exposed through the finished flooring system and filled with flexible joint filler, the bottom and sides of joint should be coated with **KEY #635-MVT**.

MIXING & SPREADING

Stir resin and hardener separately prior to mixing. Mix ratio is 2 parts resin Part A to one part hardener Part B. Pour together and mix thoroughly for 60-90 seconds. To best ensure a pinhole-free application, **KEY #635-MVT** should be installed in a two coat application, both resin coats together totaling 20+ mils of neat resin, factor the coverage rates per coat accordingly. Apply first coat at the rate of 250 ft²/gallon. Apply extra material to areas showing penetration and soaking into the concrete. Allow to cure. Apply second coat at the rate of 80-100 ft²/gallon, immediately followed with a full broadcast of 30 mesh or 40-60 mesh silica sand. Smooth finish option allows for application in two coats totaling 20+ mils of neat resin: Cured surface must be *thoroughly* sanded to remove surface gloss prior to installation of floor system. *All areas should be pinhole free and a uniform 12-14 mils minimum thickness above the highest points of the surface profile.*

Maximum recoat time for the first of two coats of **KEY #635-MVT** (neat resin) is 24 hours. The second application will have texture from the broadcast aggregate or will be sanded and has an extended recoat time as long as surface is clean before application of the floor covering system. Refer to detailed Installation Instructions document for important additional requirements.

For areas showing moisture vapor greater than 10 lbs/1000 ft²/24 hours or relative humidity probe readings greater than 90% consult with **Key Resin Technical Services** for alternate moisture mitigation materials.

AVAILABILITY

Key Resin materials are available throughout the United States, Canada, and a number of other countries. Contact the **Key Resin Sales Representative** in your area for details.

TECHNICAL SERVICE

Key Resin Company provides services and consultations on material selection, specification, troubleshooting, and other information on the proper repair and protection of concrete surfaces. **Key Resin Sales/Technical Representatives** and **Key Resin Technical Service** are available to assist you. Telephone 888.943.4532 or visit www.keyresin.com.

WARRANTY

Key Resin Company ("Key") warrants for a period of one (1) year that its products will be free of manufacturing defects and will be in conformity with published specifications when handled, stored, mixed and applied in accordance with recommendations of **Key**. If any product fails to meet this warranty, the liability of **Key** will be limited to replacement of any non-conforming material if notice of such non-conformity is given to **Key** within (1) one year of delivery of materials. **Key** may in its discretion refund the price received by **Key** in lieu of replacing the material. No customer, distributor, or representative of **Key** is authorized to change or modify the published specifications of this warranty in any way. No one is authorized to make oral warranties on behalf of **Key**. In order to obtain replacement or refund the customer must provide written notice containing full details of the non-conformity. **Key** reserves the right to inspect the non-conforming material prior to replacement. EXCEPT FOR THE EXPRESSED WARRANTY STATED ABOVE, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE. **KEY'S OBLIGATION SHALL NOT EXTEND BEYOND THE OBLIGATIONS EXPRESSLY UNDERTAKEN ABOVE AND KEY SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO THE PURCHASER OR ANY THIRD PARTY FOR ANY LOSS, COST, EXPENSE, DAMAGE OR LIABILITY, WHETHER DIRECT OR INDIRECT, OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.**