



# TECHNICAL BULLETIN

## TUFF-POXY PRIMER VRP-111 Vapor Reducing Epoxy Primer (Clear)

### **PRODUCT DESCRIPTION:**

TUFF-POXY PRIMER VRP-111 Vapor Reducing Epoxy Primer is a fluid-applied, uniquely modified, epoxy moisture mitigating primer. It is designed to be used as an above grade and below grade vapor retarder that is placed on the negative side of the concrete substrate. As a vapor emission suppressor, one application of TUFF-POXY PRIMER VRP-111 will withstand moisture vapor emission rates of up to 10 lbs./1000 square feet/24 hrs. Two (2) applications will withstand moisture vapor emission rates of up to 15 lbs./1000 square feet/24 hrs. It is recommended for use under impervious non-breathing epoxy flooring systems or traffic-bearing waterproofing systems that cannot withstand high levels of moisture vapor transmission.

TUFF-POXY PRIMER VRP-111 is ideal for use under TUFFLEX non-breathing flooring systems and traffic-bearing waterproofing systems.

As a general rule, most flooring and deck coating manufacturers do not recommend installing their products on concrete surfaces having moisture vapor emissions rate levels in excess of 3.0 lbs. of moisture emission when measured over a 1,000 square foot area during a 24 hour time period as measured by an anhydrous Calcium Chloride Test Procedure tested in accordance with ASTM F1869.

TUFF-POXY PRIMER VRP-111 is applied in either single applications of 8 mils wet/dry film thickness or two applications at 8 mils wet/dry film thickness per each coat. TUFFLEX POLYMERS resinous flooring systems and waterproofing coatings may be applied directly to the TUFF-POXY PRIMER VRP-111. Consult TUFFLEX POLYMERS for recommendations regarding potential intermediate coating products for non-TUFFLEX POLYMERS products.

Formulated with environmental requirements in mind, TUFF-POXY PRIMER VRP-111 contains no hydrocarbon solvents and thus meets all volatile organic substance regulations. TUFF-POXY PRIMER VRP-111 has no significant odor during installation.

### **ADVANTAGES:**

- Reduces or eliminates effects of moisture vapor emissions.
- Excellent adhesion to concrete.
- Convenient 3 to 2 by volume mix ratio.
- High compressive, flexural and tensile strengths.
- Installed only by TUFFLEX POLYMERS Factory Qualified Applicators.
- Available through TUFFLEX POLYMERS distributors or international sales representatives.

### **COVERAGE RATES:**

200 square feet/gal. @ 8 mils WFT per coat.

### **PACKAGING AND COLORS:**

Kit sizes: 1 gallon unit, 2-1/2 gallon kit  
Color: Clear

### **MIX RATIO:**

One and one half (1-1/2) parts by volume of Base Resin "Part A" to one (1) part by volume Curing Agent "Part B".

### **SHELF LIFE AND STORAGE:**

Shelf life will be one year from the date of manufacture as long as containers remain unopened and when material is stored in a protected environment that is free from moisture, excessive heat and freezing temperatures, and direct sunlight.

### **WHERE TO USE:**

TUFF-POXY PRIMER VRP-111 is placed directly on strong and durable concrete substrates after proper mechanical surface preparation. The day after placement, the intended (impervious non-breathing) flooring or waterproofing system can be placed.

**Caution:** Concrete must be a minimum of 14 days old at time of application. Contact TUFFLEX POLYMERS for recommendations if fully cured concrete displays a moisture emissivity greater than 15 lbs./1000 square feet/24 hrs. per ASTM F1869.

### **TYPICAL PHYSICAL PROPERTIES @ 75° F (24° C):**

<b>PHYSICAL PROPERTY</b>	<b>TYPICAL VALUE</b>	<b>TEST METHOD</b>
Adhesion	>400 psi (100% failure in concrete exposed to moisture vapor emission rate at 15 lbs./1000 sq. ft./24 hr. per ASTM F1869)	ASTM D4541
Compressive Strength	12,000 psi	ASTM D695
Tensile Strength	4,200 psi	ASTM D638
Tensile Elongation	3%	ASTM D638, percent
Pot Life	25 Minutes @ 76° F (24° C)	----
Alkali Resistance	Resistant	ASTM D1308

### **FOR BEST RESULTS:**

Install a minimum of 4' by 4' test area job site mock-up for approval of acceptable color, texture, finish, adhesion, and any other critical requirement acceptable to the owner prior to proceeding with the installation of the entire project.

Verify current versions of product technical data sheets, Safety Data Sheets (SDS), and installation guidelines by contacting the TUFFLEX POLYMERS factory.

Protect materials from excessive heat and cold and regularly check wet film thickness with mil gauge and monitor per square feet material consumption to ensure correct application thicknesses and rate are obtained.

### **OVERVIEW OF INSTALLATION STEPS:**

- Apply TUFF-POXY PRIMER VRP-111 to prepared dry substrate with a CSP 3 – 5 surface preparation. Apply at a coverage rate of 200 square feet (18.6 sq. m.) per gallon.
- Allow to dry between coats (8 – 10 hours cure time at 75° F / 50% RH.)
- For moisture mitigation up to 15 lbs./1000 square feet/24 hrs., a second application of TUFF-POXY PRIMER VRP-111 is required, applied at 200 square feet per gallon.
- Allow to cure a minimum of 8 – 10 hours prior to placement of surfacing material.

### **LIMITATIONS:**

- Minimum ambient and surface temperatures of 55° F (7° C) required during installation.
- If sub-surface cracks, TUFF-POXY PRIMER VRP-111 may reflect those cracks to some degree.
- TUFF-POXY PRIMER VRP-111 is not a substitute for a functioning vapor barrier beneath slabs.
- Prior to placement of third-party flooring systems on top of TUFF-POXY PRIMER VRP-111, check to make sure adhesive bond strength

can be developed and obtain third-party flooring system manufacturer approval.

- TUFF-POXY PRIMER VRP-111 is a topical treatment; therefore, it is not a remedy for the causes of ASR (alkali silica reaction).

Moisture vapor transmission (MVT) in excess of 3.0 lbs./1000 square feet per 24 hr. period of per ASTM F1869 may result in delamination, discoloration or improper curing. Use TUFF-POXY PRIMER VRP-111 vapor control membrane over substrates which have MVT emissions that exceed these limits. Consult with TUFFLEX POLYMERS prior to using TUFF-POXY PRIMER VRP-111 if moisture vapor transmission exceeds 15 lbs./1000 square feet per 24 hr. period per ASTM F1869.

**PRODUCT AVAILABILITY:**

TUFFLEX POLYMERS products are available for purchase through select distributors in the building trades. For the name and number of the nearest local representative, please call TUFFLEX POLYMERS at 1-888-TUFFLEX.

**SPECIFICATION ASSISTANCE:**

Contact TUFFLEX POLYMERS for specification assistance, detailing, etc. This consultation is highly recommended prior to the generation of specifications.

**CHEMICAL RESISTANCE:**

Contact TUFFLEX POLYMERS for Guidelines for individual products or systems, as well as the types of tests which should be performed:

- ASTM C868 Standard Test Method for Chemical Resistance of Protective Lining.
- ASTM C267 Standard Test Method for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes.
- ASTM D1308 Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
- TUFFLEX POLYMERS Proprietary Testing.

**Note:** Chemical resistance is a functional test, usually limited to changes in weight or thickness measured as a loss or gain and does not evaluate subject aesthetic issues. To determine aesthetic issues, TUFFLEX POLYMERS recommends testing the products or system in accordance with the intended end use parameters.

**TESTING:**

The technical data contained herein is the result of evaluations made in TUFFLEX POLYMERS' laboratories or in independent laboratories using small-scale test equipment following generally accepted trade practices. Although this information is believed to be true and accurate, the use of different equipment for testing under dissimilar conditions or the testing of samples produced under dissimilar conditions may develop substantially different results.

**PRODUCT GUARANTEE / WARRANTY:**

TUFFLEX POLYMERS (TUFFLEX) warrants these TUFFLEX materials to be free of defects and manufactured to meet published physical properties for a period of one year following the date of shipment, provided that the product has been applied according to the manufacturer's instructions. Under this warranty, TUFFLEX will provide, at no charge, product in containers to replace any product proved to be defective in applications recommended by us as suitable for this product. All claims concerning the product's defects must be made within twelve months of shipment and within thirty days of discovery. Absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product. THIS WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A SPECIFIC PURPOSE.

**CAUTION: ALWAYS KEEP OUT OF THE REACH OF CHILDREN.**

VRP-111 (15)