



# DIAMITE VINYL ESTER

*Vinyl Ester Mortar for Severe Chemical Attack*

## 1. Product Description

a. **Basic Use:** Diamite Vinyl Ester is a vinyl ester resin combined with natural aggregate used to protect horizontal or vertical surfaces against abrasion and severe chemical attack. Diamite Vinyl Ester may be used in both interior and exterior applications.

b. **Features/Benefits:**

- Unique thermal properties permit use in environments up to 260°F (125°C).
- Formulation of vinyl ester resins and specially graded natural silica aggregate permit use as a trowelable repair mortar.
- Mortar consistency may be used on ramps and sloped floors.
- Excellent adhesive properties permit bonding to most substrates.
- Versatile product formulation permits use as total floor overlay or for small floor or joint repairs.
- Quick setting times and very high early age strengths allow floor to be placed into service 24 hours after application when applied at 72°F (21°C).
- Variable application rates permit use from a slurry coat to a 1/4 inch trowelable floor overlay.
- Completely immune to the corrosive action of solvents, acids and caustics in concentrations normally found in contact with floor surfaces.
- Clean-up with commonly found solvents.

c. **Typical Applications:** Concrete repair/restoration, chemical processing plants, containment tanks, acid pits, solvent splash areas.

d. **Limitations:** Diamite Vinyl Ester should not be used at temperatures above 260°F (125°C). Do not use outside as an overlay material.

e. **Composition:** Diamite Vinyl Ester is a multi-component system consisting of vinyl ester resins and a prepackaged, specially graded and selected natural silica aggregate.

f. **Color/Appearance:** Diamite Vinyl Ester is available in natural amber color.

## 2. Packaging

Diamite Vinyl Ester is supplied in one standard 65-lb. (29.5 Kg) unit containing the proper proportions of liquid components and silica aggregate.

## 3. Estimating/Coverage

The recommended application rate is 1/4 in. (6.4 mm) in thickness as an overlay. Estimating information is shown below:

Unit Size	Coverage at 1/4 in. (6.4 mm)	Yield
65 Lbs. (29.5 Kg.)	25 sq. ft. 2.3 (sq. m)	0.51 cu. ft. (0.014 cu. m)

## 4. Technical Data

a. **Chemical Resistance:**

Resistance to Solvents and Chemicals	
-ACIDS-	-SOLVENTS-
Acetic 50% -----A	Acetone -----S
Acetic Glacial -----S	Cellosolve -----S
Chromic -----A	Ethyl Alcohol -----A
Citric 10% -----A	Methyl Ethyl Ketone -----S
Hydrochloric 10% -----A	Mineral Spirits -----A
Hydrochloric Conc. -----S	Toluene -----A
Hydrochloric Vapor -----A	Xylene -----A
Fatty Acid -----A	-PETROLEUM DERIVATIVES-
Lactic 10% -----A	Aircraft Hydraulic Fluid -----A
Muriatic -----A	Brake Fluid -----A
Nitric Below 30% -----A	Fuel Oil -----A
Nitric Above 30% -----S	Gasoline -----A
Oleic -----A	Transmission Fluid -----A
Phosphoric 50% -----A	-MISCELLANEOUS-
Sulphuric 10% -----A	Animal Fats -----A
Sulphuric 50% -----A	Calcium Chloride -----A
Sulphuric Conc. -----S	Detergent Solutions -----A
-ALKALIS-	Formaldehyde 37% -----S
Ammonium Hydroxide 20% --A	Glycerine -----A
Calcium Hypochlorite -----A	Salt Solutions -----A
Caustic Cleaners -----A	Urine -----A
Sodium Hydroxide 20% ----A	Vegetable Oil -----A
Sodium Hypochlorite 5% ----A	Water -----A
Key: A-Unaffected, S - Short Term Exposure, NR-Not Recommended	

b. Tensile Strength: ASTM D 638, 28 days; 1800 psi (12.4 MPa).

c. Compressive Strength: ASTM C 109, 2 in. (50 mm) cubes.

<i>Age</i>	<i>Strength</i>
<i>12 hours</i>	<i>1,000 psi (6.9 MPa)</i>
<i>1 day</i>	<i>3,000 psi (20.7 MPa)</i>
<i>7 days</i>	<i>5,500 psi (37.9 MPa)</i>
<i>28 days</i>	<i>7,500 psi (51.7MPa)</i>

d. Ultimate Elongation: ASTM D 638; 3.5%.

## 5. Directions for Use

a. Preparation: The surface to be patched or overlaid must be physically and structurally sound, thoroughly clean, free of oil, curing compounds or other deleterious materials that may prevent adhesion. New concrete must be thoroughly cured for at least 28 days before starting surface preparation. Concrete should be mechanically roughened or abraded by shot-blasting or scabbling equipment. An exposed aggregate surface is required for good bonding. All loose particles must be removed by vacuuming or flushing with compressed air and water.

b. Mixing: Thorough blending of all components is essential. Use a power drill with a Metco Jiffy mixing paddle. First, mix the binder separately; then, mix the activator separately. Next, add the mixed activator to the mixed binder and thoroughly blend for at least two minutes at revolution speeds that will not entrap air bubbles into the freshly mixed vinyl ester liquid.

c. Priming: Apply a small amount of the mixed vinyl ester liquid (no aggregate) to the base concrete as a primer.

d. Silica Aggregate and Liquid Mixing: After the binder and activator are completely mixed, add all the aggregate to the liquid compound and mix until all the aggregate is thoroughly coated. The Metco Batch Mixer, which utilizes a 5-gal. (18.9 liter) pail, is ideal for efficient mixing of the aggregate with the vinyl ester resin.

e. Application: After the substrate has been primed, distribute the mixed vinyl ester mortar onto the area to be overlaid. At the normal thickness of about 1/4 in. (6.4 mm), the mortar may be placed with a trowel or float. For thicker applications, it is good practice to use screed bars or rails for a uniform finished surface free of high and low areas. Extreme care should be exercised to leave the surface free of trowel marks, ridges, and other imperfections. A power trowel may be used to finish large areas.

f. Cure Time: Diamite Vinyl Ester will begin to harden in 30 minutes after mixing depending upon ambient temperatures. Repaired areas may be exposed to light traffic in 24 hours.

g. Clean-Up: Any commonly found commercial solvent may be used for cleaning tools and equipment.

h. Maintenance: Diamite Vinyl Ester may be reapplied to itself.

## 6. Availability

Diamite Vinyl Ester is normally available from your local distributor or will be shipped within 5 working days upon receipt of order. Please contact your local Metalcrete representative or call Metalcrete directly for more information.

## 7. Warranty

Diamite Vinyl Ester is manufactured in strict accordance with the quality control standards of Metalcrete Industries. It is guaranteed to perform as indicated on this data sheet when applied by competent applicators.

## 8. Technical Service

Metalcrete technical service representatives are available to provide on-site assistance with a minimum three day notice.



**Metalcrete Industries**

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