



# DIATHANE MORTAR

## *Water Based Urethane Cement Trowel Down Mortar*

### 1. Product Description

**a. Basic Use:** Diathane Mortar is a four-component water based urethane cement trowel down mortar that has exceptional wear performance and resistance to heat. Diathane Mortar is intended for indoor applications subjected to heavy foot traffic and hand cart traffic. The Diathane Mortar flooring system produces a seamless, slip-resistant surface while offering protection from abrasion and chemical attack.

**b. Features/Benefits:**

- Withstands thermal shock, impact, and abrasion.
- Stable in chemically aggressive environments.
- Excellent resistance to freeze-thaw cycles.
- Cures at temperatures as low as 45°F (7.2°C).
- Can be returned to service within 12 hours and will accommodate heavy foot traffic in 24 hours at 77°F (25°C).
- Withstands heat exposure up to 200°F (93.3°C).
- Slightly textured finish provides slip resistance in areas subjected to washdowns.
- Can be top coated to ensure surface uniformity.

**c. Typical Applications:** Food processing, chemical processing plants, water treatment plants, breweries, commercial kitchens, bottling plants, dairy processing, industrial bakeries, and penitentiaries.

**d. Limitations:** Do not apply this material outdoors or where direct sunlight is prevalent. Do not install over wet concrete. Base concrete must be cured for at least 15 days prior to Diathane Mortar application. Concrete substrate must be at least 5°F (-15°C) above dew point during application.

**e. Composition:** Diathane Mortar is a four-component water based urethane cement system.

**f. Color/Appearance:** Concrete gray, tile red, or natural tan color with a matte finished surface.

### 2. Packaging

Diathane Mortar is supplied in units, each containing proper proportions of liquid components, graded aggregate, and pigment. Shipping weight for one unit is approximately 63-LBS. (28.6-KG).

### 3. Estimating/Yield

Diathane Mortar formulation with the following proportions and yields:

	<i>Standard Unit</i>
<i>Activator Liquid</i>	<i>5-LBS. Packaged in a 1-GAL. (3.8-Liter) Can</i>
<i>Binder Liquid</i>	<i>5-LBS. Packaged in a 1-GAL. (3.8-Liter) Can</i>
<i>Graded Aggregate</i>	<i>1 x 52-LBS. (23.6-KG) Bag</i>
<i>Powder Pigment</i>	<i>1 x 1-LB. (454 Gram) Bag</i>
<i>Volume Yield</i>	<i>0.48 feet<sup>3</sup> (0.013 meter<sup>3</sup>)</i>
<i>Area Yield</i>	<i>23 feet<sup>2</sup> (2.1 meter<sup>2</sup>) at 1/4" (6.4 mm)</i>

### 4. Technical Data

**a. Compressive Strength:** ASTM C 579: 7,800 psi (53.8 MPa).

**b. Flexural Strength:** ASTM C 580: 1,900 psi (13.1 MPa).

**c. Tensile Strength:** ASTM C 307: 975 psi (6.7 MPa).

**d. Bond Strength:** ASTM D 4541: 100% Concrete Failure.

**e. Impact Resistance:** ASTM D 4226: 160 inch-pounds.

**f. Fungi Growth:** ASTM G 21: Passes rating 1.

**g. Hardness:** Shore D 80.

**h. Working Time:** 15 minutes after mixing at 77°F (25°C).

**i. Spot Testing:** ASTM D 1308: No physical damage on surface when exposed to mustard, ketchup, lactic acid, vinegar, and lemon juice.

**j. Chemical Resistance:**

<u>Chemical Name</u>	<u>24 Hour Immersion</u>
Acetic Acid 10%	Passed
Nitric Acid 30%	Passed
Sodium Hydroxide 50%	Passed
Sulfuric Acid 30%	Passed
Xylene	Passed

## 5. Directions for Use

**a. Preparation:** The surface to be treated must be physically sound, thoroughly clean, free of oil, wax, loose paint, rust, scale, and completely dry. New concrete must thoroughly cured for at least 15 days before starting surface preparation. Base concrete must be mechanically abraded by shotblasting or thoroughly etched with Bitesin. All acid-etched concrete surfaces must be rinsed and neutralized with potable water and allowed to completely dry. If the concrete substrate is saturated with fats, oils, or greases, applicator may consider utilizing an industrial degreasing agent prior to product application. Recommended surface profile should be CSP 5 or greater.

**b. Bonding:** No separate bonding agent is needed. The base concrete substrate should be clean and dry when Diathane Mortar is applied. To help mitigate the risk of lifting or delamination, keyways (minimum 5/16" wide by 5/16" deep) should be cut at all terminations, joints, columns, doorways, and drains.

**c. Ambient Conditions:** For best results, ambient temperature should be between 45°F (7°C) and 85°F (30°C). Humidity must be below 85%. Concrete substrate must be at least 5°F (-15°C) above dew point during Diathane Mortar application.

**d. Mixing:** For best results, do not modify factory packaged units. Use the entire pre-packaged kit as outlined on this technical data sheet. With the mobile batch mixer running, add the Activator Liquid to the mixing vessel along with one bag of Powder Pigment. Mix for about 15 seconds or until color is consistent throughout. Next, add the Binder Liquid into the mixing vessel and blend for 30 seconds at revolution speeds that will not entrap air bubbles into the freshly mixed Diathane Mortar liquids. Proper blending of the liquid components is critical to ensure proper and complete curing. Gradually add the aggregate component into the liquid mixture and blend thoroughly until all particles are thoroughly coated, about 2 minutes. It is very important to utilize a proper batch mixer and paddle to ensure a complete mix and to reduce the risk of introducing excessive air into the mixture.

**e. Application:** Immediately after mixing, distribute the mixed material onto the floor using a screed box or by hand trowel. Trowel the surface lightly, using a steel finish trowel to smooth the surface. Finish trowel strokes should all be in the same direction. Do not over trowel or overwork the mortar. Immediately roll the surface lightly in no more than two passes with a roller. Rolling will help achieve a uniform appearance on the surface of the floor. Excessive or late rolling may introduce pinholes to the surface. A "wet edge" installation is imperative during large applications to avoid lines and ridges in the finished floor.

**f. Top Coat Application:** Applying a top coat to Diathane Mortar is optional dependent on desired results. Follow the application instructions outlined on the Diathane Slurry TC technical data sheet.

**g. Cure Time:** At 77°F (25°C), Diathane Mortar will accommodate light foot traffic in 12 hours and heavy foot traffic in 24 hours. Diathane Mortar is fully cured in 7 days. Until the floor is fully cured, only subject the floor to light foot traffic and non-harsh chemical exposure. Keep the floor dry for the full cure cycle.

**h. Clean-Up:** Either DL Solvent or Waterzall Concentrate and warm water may be used for cleaning tools and equipment.

**i. Maintenance:** Diathane Mortar surfaces should be cleaned with an industrial detergent. Test the cleaner prior to application as some cleaners can effect surface color.

## 6. Availability

Diathane Mortar is normally available immediately from your local distributor or it will be shipped within 7 to 10 working days upon receipt of order. Please contact your local Metalcrete representative or call Metalcrete Industries directly for more information.

## 7. Warranty

Diathane Mortar 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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