

# ZeraFloor™

## Versatile Epoxy Primer & Binder

### DESCRIPTION

ZeraFloor™ is an economical multi-purpose, 100% solids, two-component epoxy binder. Due to its low viscosity, a highly filled self-leveling floor can be made in combination with the ZeraFloor SL filler (Part C). This system is used to level corroded or damaged floor in order to accept the epoxy floor coating.

ZeraFloor™ is also recommended in combination with the ZeraFloor Trowel Aggregate (Part C) floor topping, 6.4 mm (1/4") in thickness, on horizontal surfaces by hand or by power trowel technique. This three-part system produces a monolithic tough flooring system. An epoxy sealer and topcoat is used to generate an attractive colored floor topping.

ZeraFloor™ may also be used as a low viscosity primer for deep penetration into the concrete to seal it off from outgassing. The product is offered in Oyster Grey and in clear. The latter can be tinted with Zeraus' color additive.

### WHERE TO USE

As an epoxy floor topping, it provides an excellent wearing surface to industrial fork lift traffic and general production areas such as food processing plants, commercial kitchens, automotive plants, pulp and paper mills, steel mills, airplane hangars, chemical and cosmetic manufacturing areas, dairies, breweries, laboratories and pharmaceutical plants. This epoxy floor topping is also suitable as a protective overlay for new concrete floors or to restore worn concrete floors. It can also be used to protect concrete from exposure to moderate splash and spillage of mild chemicals.

### BENEFITS

- 100% solids, low odor, zero VOC's.
- Very low viscosity.
- Superior adhesion to concrete.
- As a trowel system, it has very good abrasion and impact resistance.
- High compressive and mechanical strength.

- Easily cleaned and maintained; provides a more sanitary work environment.
- Excellent penetration into concrete to minimize outgassing.

### HANDLING PROPERTIES

|   |   |
|---|---|
| <b>Resin &amp; Hardener Only @ 23°C (74°F)</b>              |   |
| Mixing Ratio, by volume .....                               | 2 parts A: 1 part B                           |
| Viscosity (Mixed) .....                                     | 460 cps                                       |
| Mixed Weight (Density).....                                 | 1.07 kg/litre (8.9 lb./US gal)                |
| Pot Life (working time) .....                               | 20 minutes                                    |
| Initial Set.....  | 6-8 hours                                     |
| Foot Traffic .....  | 12-16 hours                                   |
| Light Traffic .....   | 24 hours                                      |
| Full Cure and Maximum Resistance .....                      | 7 days  |
| <b>Data, Cured System 28 days</b>                           |   |
| Compressive Strength .....                                  | 82 MPa (12,000 psi)<br>(ASTM C-579)           |
| Tensile Strength .....                                      | 6 MPa (870 psi)<br>(ASTM C-307)               |
| Abrasion Resistance.....                                    | 0.18 gm loss<br>(ASTM 4060)                   |
| H22 Wheel, 1000 cycles with grout coat ( <b>as trowel</b> ) |   |
| Impact Resistance .....                                     | Pass 160 lb./inch<br>(ASTM D-2794), No Cracks |
| Water Absorption .....                                      | 0.08%<br>(ASTM C67-78)                        |

### SURFACE PREPARATION

ZeraFloor™ should be applied over clean, sound, dust free surfaces. For best results, the surface should be prepared as follows:

#### Concrete (New):

Shot blasting or equivalent to remove surface laitance, curing compounds or form oils. Concrete should be a minimum of **28** days old or have 3% or less moisture content. Moisture content can be determined using the test method ASTM D 4263.

### **Concrete (Old):**

Remove oil, grease, dirt and any unsound concrete using a combination of commercial degreasers, alkaline wash and shot blasting. A combination of acid-etching and power washing can also be used. Cracks and surface defects should be repaired prior to the application of coating.

### **Steel:**

Remove greases, oils and contaminants from surfaces and sandblast to white metals.

## **APPLICATION**

### **System 1: Trowel Applied Mortar Screed**

#### **Mixing ratio: one 22.6kg bag to 2.85L of liquid.**

The mixing equipment used to mix the epoxy topping must be clean and free of any contaminants that may be present in the equipment from previously used products. Mix Part A first to eliminate the possibility of settlement. Pour all of the liquid from Part A and Part B into the mixing container and mix for approximately one minute. Transfer the mixed binder (A +B) into a suitable Kol type motor driven mixer. Gradually add the **ZeraFloor Trowel Aggregate** to the mixed binder (A+B) to avoid excessive air entrapment. Once all of the ingredients are combined, mix continuously and thoroughly for 2 minutes to ensure complete mixing. During the mixing, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure a uniform mixing.

#### **Placement**

Primer Coat: Apply a prime coat of **ZeraFloor Resin** at 5 mils film thickness to seal off the concrete and minimize outgassing. The epoxy mortar must be placed on the wet epoxy primer; if the primer becomes tack-free, re-prime the concrete substrate.

Screed Mortar: Maintain all control joints through the screed where movement is expected. Place the epoxy mortar onto the wet primer surface using a steel trowel or a screed box to the desired thickness of 4.8 mm - 6.4 mm (3/16" to 1/4"). Allow the loose epoxy topping to stand for a few minutes to permit the entrapped air to escape. Areas with pits or depressions should first be filled with a

thin troweled coat, carefully working the material into the voids, prior to the final application of the desired thickness. After achieving the desired thickness, the epoxy topping should be mechanically troweled to a smooth dense finish. Do not feather edge.

Grout Coat: When the epoxy topping has sufficiently cured to sustain foot traffic, apply an epoxy grout coat. Apply using a squeegee or trowel to force the epoxy into surface pores and back-roll immediately to remove the ridges.

Topcoat: A topcoat may be needed for aesthetics and for further protection against chemical and abrasive traffic. A slip-resistant sand texture can be achieved by lightly seeding the wet topcoat with 32 mesh aggregate. Immediately back-roll the seeded coating to encapsulate the aggregate.

### **System 2: Self-Leveling Flooring**

#### **Mixing ratio: one 21kg bag to 10L of liquid.**

- Apply a prime coat of **ZeraFloor Resin** at 5 mils film thickness to seal off the concrete and minimize outgassing. Allow it to fully dry overnight
- Pour all of the liquid from Part B into a Part A plastic pail. Use a paddle, mud or mechanical mixer to mix thoroughly for 1-2 minutes until the color is uniform.
- Very slowly, add **Zeraus SL Filler** (powder) slowly into the mixed material while mixing to ensure wetting the aggregate fully. Keep the mixing blade closer to the bottom at the point to prevent dust clouds. Once all of the powder is mixed, keep moving the mixing blade up and down while scraping the sides to ensure a complete mix. Ensure no powder or dry spots are present and the mixture is fully uniform.
- Immediately pour the mixed material onto the edges of the floor and spread evenly with a lightly notched squeegee to 2 mm (1/4") film thickness to level the material evenly.
- Allow for **ZeraFloor SL** to level to a smoother finish. Wait approximately 15 minutes, wear spike shoes, and walk over the applied area, then apply a spike roller over the entire wet surface to help eliminate any air

bubbles. This step allows for breaking up large bubbles as they form to ensure a smooth floor.

- **ZeraFloor SL** can also be extended with a clean 1/4" pea gravel for the patching of deeper areas (greater than 12 mm/½" up to 25 mm/1").
- Depending on the concrete condition, sometimes large bubbles may be formed from outgassing. These large bubbles must be ground (after it dries), filled with **ZeraBond Type 3** and sanded to a smooth surface prior to the application of an epoxy primer or coating.

### LIMITATIONS

- Minimum/maximum substrate temperature is 10°C/30°C (50°F/86°F).
- Do not apply to porous surfaces where moisture vapor transmission will occur during application.
- Do not use as exterior application.
- Protect from dampness, condensation and water contact during the initial 24-hour cure period.

### THEORETICAL COVERAGE

#### As a Primer:

Based on 5 mils thickness per coat:  
7.5 m<sup>2</sup>/litre (300 ft<sup>2</sup>/U.S. gallon)

#### As a Matrix:

Approximate coverage per unit is:  
2.9 m<sup>2</sup> @ 4.8 mm (31 sq.ft<sup>2</sup> @ 3/16")  
2.1 m<sup>2</sup> @ 6.4 mm (23 sq.ft<sup>2</sup> @ 1/4")  
(Yield is 0.48 ft<sup>3</sup>)

#### Matrix Unit:

2.52 L (0.66 U.S. Gal) Resin, Part A  
1.26 L (0.33 U.S. Gal) Hardener, Part B  
22.7 kg (50 lb.) of **Trowel Grade Base Sand**

Note: The matrix unit of the Epoxy Resin/Hardener and the Trowel Grade Base Sand will depend on the application. These are Zeraus' suggested ratios only.

#### As a Self-Leveling:

Approximate coverage per 32 kg unit is (10L liquid plus 21kg bag):

6.6 m<sup>2</sup> (71 ft.<sup>2</sup>) @ 3 mm (1/8")

Yield: 0.74 cubic feet per unit

*The coverage varies greatly from floor to floor depending on the depth of concrete erosion to fill and the thickness required.*

### PACKAGING

**ZeraFloor™** is packaged in:

2.85 Litre (0.75 U.S. gal) units

10 Litre (2.6 U.S. gal) units

56.7 Litre (15 U.S. gal) units

**Trowel Grade Base Sand** is packaged in:

22.7 Kg (50 lb.) bags

**Self-Leveling Sand** is packaged in:

21 Kg (46 lb.) bags

### CLEAN UP

Clean all equipment and installation tools immediately with xylene.

### SAFETY PRECAUTION

Uncured epoxy resins and hardeners represent some hazards. Avoid contact with skin and ensure adequate ventilation. Consult Material Safety Data Sheet (MSDS) for specific instruction.

### MAINTENANCE

Mop or wash coatings using warm water and commercial detergents on a regular basis. Stem cleaning of coating should not be employed.

### STORAGE

Store in a heated warehouse. Do not freeze.

### SHELF LIFE

2 year from the date of manufacture if kept in original unopened containers.

### WARRANTY

"The recommendations made and the information herein is the result of accurate laboratory and field tests under controlled conditions. We guarantee that the quality and properties of the materials supplied conform to our standards. Zeraus Products Inc. makes no warranties, expressed or implied, as uses and applications are beyond our control. Zeraus Products Inc. shall not be liable for any injury, loss, or damage (direct or consequential) arising from use or inability to use the products. Before using, the user is urged to pre-test the products in his/her own environment to determine the suitability of the products for their intended use, and the user assumes all risk and liability whatsoever in connection therewith.

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