



# TerraSeal

## Application Instructions

### System Description

This document outlines the standard application guidelines for installation of the American Industrial's line of industrial floor coatings. The coatings are applied at 12-65 mils using the following components.

**TerraPrime:** a 100% solids epoxy cured with a polyamide; used as a basecoat or primer

**TerraSeal:** a 100% solids epoxy cured with a cycloaliphatic amine; used as a basecoat or finish coat

**TerraSeal OP:** a 100% solids epoxy cured with a cycloaliphatic amine; provides an orange peel surface as a finish coat

**Broadcast Aggregate:** 30-40 mesh rounded silica; Wedron 480 or equal; available locally

**TerraGrip:** a polymer aggregate add to TerraSeal to provide slip resistance.

### Application Details

## 1. Concrete Condition

### 1.1 General

Concrete must be structurally sound and free of oil, grease, and other contaminants. New concrete must be thoroughly cured to prevent shrinkage cracks. Typically, 14 days at 70°F is sufficient.

### 1.2 Cracks, Sawcuts, Expansion Joints

Cracks, sawcuts, and expansion joints must be identified and characterized prior to installation. Cracks must be evaluated to determine if they are stable or moving. The method of crack treatment is dependent on the type of crack. Sawcuts and expansion joints should not be covered when the surface will experience changing temperatures.

### 1.3 Moisture

Excess moisture emissions can cause coating delamination. All concrete surfaces should be tested for moisture prior to applying a seamless coating. There are several methods available. ASTM D-4263 is a qualitative test using a plastic sheet. The calcium chloride test provides quantitative results. If moisture emissions exceed 3 lbs./1000 sq. ft./ 24 hrs, TerraPrime MM may need to be installed prior to application of TerraSeal system. Contact applicator for details.

## 2. Environmental Conditions

### 2.1 General

Store materials in clean, dry conditions at temperatures between 65°F and 90°F. Surface, air, and material temperatures must be between 65°F and 90°F during application. The temperature must remain within this range for a minimum of 24 hours after application. The surface temperature also be at least 5° above the dew point.

### 2.2 Rising Temperatures

Concrete will release air during periods of rising temperatures. This can result in bubbles in the coating even in apparently well sealed concrete. To prevent bubbling, always apply coatings when the application and cure temperatures will be constant or decreasing.

## 3. Surface Preparation

### 3.1 Cleaning

Oil, grease, and other contaminants will inhibit bonding. Remove by first scraping any thick, caked deposits, then by scrubbing with an appropriate cleaner. Always finish with a warm water rinse. Test the treated area with a 1:2 mix of muriatic acid and water. (Always add acid to water.) A white haze of bubbles indicates a clean concrete surface.

### 3.2 Surface Profile

Surface laitance and loose concrete must be removed. A surface profile equal to 40-60 grit sandpaper is required for proper bonding. Mechanical methods (abrasive blasting, scarifying) are preferred, although acid etching is acceptable on new concrete. Mechanical preparation is the only acceptable method for old concrete and for new concrete if curing agents, hardeners, or sealers are present.

### 3.3 Surface Repairs

**Voids, Popouts:** Remove all loose concrete from the damaged area. Fill with TerraRich or Patch Filler.

**Stable Cracks:** Minor shrinkage cracks can be bridged without special treatment. For wider cracks, route the crack in a "V" cut to a width of 1/2" and a depth of at least 1/4". Clean the area and fill with an epoxy grout.

**Moving Cracks:** Cracks less than 1/8" : Apply 8-10 mils of TerraFlex 16-24 inches wide centered on the crack.

For larger cracks, saw cut the crack to a width of 1/2" and a depth of at least 1". Clean the area and insert closed cell backer rod leaving an opening 1/2" deep. Fill the crack with TerraFlex and apply 8-10 mils of TerraFlex 16-24 inches wide centered on the crack.

**Expansion Joints:** Remove all material from the joint and insert closed cell backer rod. Leave the backer rod protruding from the joint during application to prevent the joint from being filled. Install the flooring up to the backer rod. After installation, depress the backer rod to a depth of 1/2". Lightly sand the edges of the flooring system adjacent to the joint. Depress the backer rod, clean the joint, and install an appropriate sealant.

**Drains:** If a drain is surrounded by a joint, treat as outlined above. Seal all drain openings prior to application.

## 4. Mixing

### 4.1 Two Component Products

Premix Part A (resin) for 30 seconds with a drill and Jiffler or Hansen mixer. Slowly add Part B (catalyst) and continue mixing for 2 minutes. Mix at medium speed with the mixer immersed in the material to minimize air entrainment. Do not thin products.

## 5. Application

### 5.1.1 Broadcast Anti-Skid system

#### BaseCoat

TerraPrime or TerraSeal may be used as the basecoat for the aggregate. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee or drywall blade. Spread the coating according to the desired thickness. Standard thickness is 100 square feet/gallon for a 55 mil system. Backroll with good quality 3/8" nap non-shedding roller.

#### Aggregate

Broadcast aggregate into the wet slurry. Broadcast in an upward motion to allow the aggregate to rain onto the surface evenly from above. Applying the aggregate at an angle will cause ridges in the finish. Aggregate may be broadcast by hand or with a spray pot. Always keep the broadcast aggregate at least five feet away from the wet edge of the applied slurry. The seeding should leave no visible wet spots in the slurry. Use about 50 pounds of aggregate per 100 square feet into a 16 mil basecoat. Allow the surface to cure before continuing. Once the surface has cured, the excess aggregate must be removed. Sweep or vacuum the surface.

## **Sealer**

TerraSeal is used as the finish coat. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee or drywall blade. The texture of the system can be varied by adjusting the spread rate of the coating. Spreading the coating at 100 square feet/gallon will leave an aggressive texture; spreading the coating at 65 square feet/gallon will leave a moderate texture. Backroll with good quality 3/8" nap non-shedding roller.

## **System Thickness**

<b>BaseCoat Coverage</b>	<b>Aggregate Use</b>	<b>Sealer Coverage</b>	<b>Build</b>	<b>Texture</b>
80 square feet/gallon	60 pounds/100 square feet	65 square feet/gallon	65 mils	Moderate
80 square feet/gallon	60 pounds/100 square feet	100 square feet/gallon	55 mils	Aggressive
100 square feet/gallon	50 pounds/100 square feet	65 square feet/gallon	55 mils	Moderate
100 square feet/gallon	50 pounds/100 square feet	100 square feet/gallon	45 mils	Aggressive
150 square feet/gallon	40 pounds/100 square feet	65 square feet/gallon	45 mils	Moderate
150 square feet/gallon	40 pounds/100 square feet	100 square feet/gallon	35 mils	Aggressive

## **5.1.2 TerraGrip Anti-Skid System**

### **Primer**

TerraPrime or TerraSeal may be used as the primer for the TerraGrip finish system. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee. Pull the material with the squeegee pressed firmly to the concrete surface to seal the concrete completely. Apply as thin as the surface profile allows. Typical application rates are 150-200 square feet/gallon. Backroll with good quality 3/8" nap non-shedding roller.

### **Sealer**

TerraSeal is used as the finish coat. Mix the coating as described in 4.1, but add 1-2 pints of TerraGrip aggregate per 3 gallon mix of activated material. Immediately pour the material onto the floor and spread with a squeegee at a rate of about 200 square feet/gallon. Backroll with good quality 3/8" nap non-shedding roller.

### **System Thickness**

The TerraGrip Anti-Skid system typically yields 14-18 mils.

## **5.2 Orange Peel Finish**

### **Primer**

TerraPrime or TerraSeal may be used as the primer for the orange peel finish system. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee. Pull the material with the squeegee pressed firmly to the concrete surface to seal the concrete completely. Apply as thin as the surface profile allows. Typical application rates are 150-200 square feet/gallon. Backroll with good quality 3/8" nap non-shedding roller.

### **Sealer**

TerraSeal OP is the finish coat for the orange peel system. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee or drywall blade. TerraSeal OP is typically spread at 200-300 square feet/gallon. A thinner coating will provide a more pronounced orange peel finish. Backroll with good quality 3/8" nap non-shedding roller.

### **System Thickness**

The orange peel finish system typically yields 12-16 mils.

## **5.3 Smooth Finish**

### **Primer**

TerraPrime or TerraSeal may be used as the primer for the smooth finish system. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee. Pull the material with the squeegee pressed firmly to the concrete surface to seal the concrete completely. Apply as thin as the surface profile allows. Typical application rates are 150-200 square feet/gallon. Backroll with good quality 3/8" nap non-shedding roller.

## **Sealer**

TerraSeal is used as smooth finish coat. Mix the coating as described in 4.1. Immediately pour the material onto the floor and spread with a squeegee or drywall blade. Spread the coating according to the desired thickness. TerraSeal is typically spread at 100 - 150 square feet/gallon. Backroll with good quality 3/8" nap non-shedding roller.

## **System Thickness**

The smooth finish system typically yields 18-24 mils.

# **6. Cleanup**

## **6.1 Two Component Products**

Clean all equipment immediately after use with isopropanol (rubbing alcohol) or xylene. Read the MSDS and follow all safety procedures for any cleaning material.

# **7. Cure Time**

## **7.1 Recoat**

All coatings can be recoated as soon as they accept foot traffic. Following are typical times at 70°F.

TerraPrime: 6 hours

TerraSeal: 10 hours

TerraSeal OP: 10 hours

All coatings must be recoated within 24 hours. After 24 hours, sanding is required before recoating.

## **7.2 Return to Service**

	55°F	70°F	85°F
Foot Traffic	20 hours	12 hours	8 hours
Wheel Traffic	30 hours	24 hours	16 hours

# **8. Safety**

## **8.1 Storage and Handling**

Store products in a cool, dry area away from flames and sparks. Separate resins from hardeners. Material Safety Data Sheets are available and should be read before handling any material. Avoid contact with all materials to prevent irritation. Wear rubber gloves, protective clothing, and safety glasses. Use only with adequate ventilation.

## **8.2 Composition**

TerraPrime, TerraSeal, and TerraSeal OP contain epoxy and amine resins. TerraGrip is a polymer aggregate.

# **9. Floor Maintenance**

## **9.1 Cleaning**

Do not wash the floor within 5 days of installation. Exposure to water before the floor is completely cured may dull the finish. Avoid harsh chemical cleaning for ten days. To maintain the appearance and maximize the service life of the coating, clean regularly with a mild detergent and a floor scrubber with non-abrasive pads or brushes.

# **10. Technical Assistance**

## **10.1 American Industrial**

1218 W. 41st Street  
Suite B  
Tulsa, OK 74107

918-445-0627  
800-535-5053 (24 hour safety and medical help)  
[www.aiflooring.com](http://www.aiflooring.com)