

## ENDURABLE CONCRETE ARMOR

Endurable Concrete Armor is cutting edge epoxy technology that is engineered to bond to power troweled concrete at an unimaginable bond strength of over 1000 psi. The use of polymeric chips, quartz and sand, or the Endurable Concrete Stain creates durable and decorative surfaces. It is also extremely easy to apply, incredibly versatile, and amazingly hard. Additionally, impressive dry times are achieved to produce a great return-to-service application. Endurable Concrete Sealer should subsequently be applied in the recoat window to help provide superior chemical resistance.

### ADVANTAGES

- Easy application - apply with T-bar, magic trowel, or sprayer
- Unbelievable bond strength over 1000 psi (4 to 5 times stronger than most coatings)
- Works great as clear coat or material in which to broadcast or add color
- Pendulum hardness of over 320 (standard coatings are usually 30 - 120)
- Fast return to service - incredible dry speed for low VOC product
- Good working time - pot life of 50 - 60 minutes
- Dry time - 45 to 90 minutes depending on temperatures and porosity
- Walk on time - 2 - 3 hours at average temperatures
- Low VOC content
- Repairable
- Excellent cost-effectiveness for a high-performance product
- Gloss; 60 degrees - 158

### WHERE TO USE

Use on concrete and cementitious surfaces, masonry, and more.

### PACKAGING

Kit that makes 3 - 4 gallons

### TEST AREA

Performing a test area is advisable to make sure the product is suitable for the surface.

### COVERAGE RATES

150 - 500 s.f. is achieved from 1 gallon, depending on porosity and texture. Product may be used for broadcast or bonding primer coat underneath Endurable Concrete Sealer. The application can greatly affect the coverage rate.

### PRODUCT AVAILABILITY

Product is available at retail distributors around the world. Visit the Endurable website to find the nearest distributor.

### REGULATORY INFORMATION

#### VOC CONTENT - <50g/L

USDA - In accordance with USDA regulations 9 CFR, Section 416.4 and the Food Safety Inspection Service's "Sanitation Performance Compliance Guide," HDIP INC issues this statement of assurance: When properly applied, Endurable Concrete Armor contains no harmful compounds that will contaminate food and meat handling and processing equipment or facilities. In addition, Endurable Concrete Armor will make concrete floors and walls less porous and easier to clean, creating an environment that is less susceptible to the proliferation of harmful bacteria.

#### LEED

At < 50 g/L of VOC content, product contributes towards LEED certification.

## PREPARATION

Endurable Concrete Armor may be used on both interior and exterior concrete. Please follow application instruction for either interior or exterior use. Apply to dry, porous concrete. New concrete should be allowed to cure for at least 28 days. All surfaces need to be clean, dry, and free of bond-breaking contaminants. Endurable Surface Cleaner is the recommended product to use for surface preparation. Please refer to the technical data sheet for application instructions of the Endurable Surface Cleaner. **ACIDIC OR ALKALINE CLEANERS AND ETCHING PRODUCTS ARE NOT RECOMMENDED.**

### INTERIOR SURFACE PREPARATION

Before application of product, make sure surface is free from dirt, oils, carpet and tile glue, or previous sealers. Clean the surface with Endurable Surface Cleaner. Use per instruction on the Endurable website. Repair and grout cracks, pop-outs, and joints with suitable joint and patching compounds.

**Hardening:** Softer concrete may need to have 1 - 3 applications of Endurable Concrete Hardener depending on hardness of concrete.

**Grouting and Joint Repair:** Apply suitable joint and grout materials. Grind off excess materials before application of Endurable Concrete Armor.

### EXTERIOR SURFACE PREPARATION

Before application of sealer, make sure the surface is free from dirt, oils, and other sealers. Clean the surface with Endurable Surface Cleaner in conjunction with pressure washing. Use per instruction on the Endurable website. Allow the concrete to dry before application process.

## REMOVAL OF EXISTING SEALERS

It is advisable to remove all existing sealers with Endurable Power or Vertical Stripper. Follow instructions and videos about how to remove existing sealers on the Endurable website.

## COUNTERTOPS

Endurable Concrete Armor is an excellent choice for concrete countertops. Follow the interior surface preparation instructions.

## MOISTURE TESTING

Performing a moisture test is recommended to determine if the substrate is suitable for application of Endurable Concrete Armor. A Calcium Chloride test or an RH meter may help determine the moisture drive/content of the concrete. A piece 2 mil plastic may also be taped to the surface for approximately 24 hours if no testing equipment is available. A combination of two or more of these tests is recommended for comprehensive analysis.

A Calcium Chloride reading above 5 lbs can yield less than desirable results.

A reading of 75% on an RH meter can yield less than desirable results. Coring meters are much more reliable than surface RH meters.

Tape a piece of 2 mil plastic on all sides to the surface for 24 hours. If moisture is present after 24 hours, the concrete may have a moisture problem.

If it appears the concrete has a moisture issue, then the problem must be mitigated before the application of product. One option to mitigate moisture issues is to use Endurable Concrete Hardener. Spray a minimum of three heavy applications. Wait 24 hours and repeat moisture testing. If problem still exists, repeat application.

## pH TESTING

Before Endurable Concrete Armor is applied it is advisable to test the pH of the concrete. The pH of the concrete should be between 8 and 10. To test the pH of a concrete surface, use the Endurable pH Pencil. Please refer to the technical data sheet for the Endurable pH Pencil for application instructions.

Many concrete cleaners are acidic or alkaline and leave the surface acidic or alkaline. Improper pH levels in the concrete can prohibit sealers and coatings, including Endurable Concrete Armor, from curing properly.

## MIXING INSTRUCTIONS

Product is a two-component system. In a 5-gallon bucket add Component 1 into Component 2 and stir with a drill and paddle for 2 minutes. Add 1 gallon of water for thinner topcoat or coating application.

Do not add water for a broadcast application.

**IT IS NOT RECOMMENDED TO BREAK DOWN ENDURABLE CONCRETE ARMOR KITS. SAMPLE SIZES ARE AVAILABLE FOR SMALLER JOBS.**

## POT LIFE

Pot life is 45 - 90 minutes

**LOW OR HIGH TEMPERATURES CAN AFFECT POT LIFE. IMPROPER STORAGE CAN AFFECT POT LIFE OR RUIN PRODUCT.**

## APPLICATION TOOL OPTIONS

**EACH TOOL MAY YIELD DIFFERENT RESULTS**

- T-Bar floor coaters and coater refills
- Roller - ¼ nap roller cover for urethanes and epoxies
- Magic Trowel
- Pump up sprayer capable of spraying product with a .08 - .10 gpm conical tip at 40 psi

## APPLICATION INSTRUCTIONS

Apply product to stable surface. Test areas are always recommended to confirm suitability of substrate and to achieve comfort level with application procedure. Apply product with a T-bar applicator, roller, magic trowel, or sprayer. Apply between 45 and 90 degrees Fahrenheit. Avoid subjecting product to freezing temperatures or moisture for 12 - 36 hours depending on temperature and humidity levels.

### ADDING ENDURABLE CONCRETE STAIN

Endurable Concrete Stain may be added to Endurable Concrete Armor. Mix Endurable Concrete Armor as instructed and add stain concentrate. Add stain depending on desired look. Adding more stain can give a solid look, while adding less may give a more transparent look. This process can help to color fill material as a primary or final coat.

### INTERIOR CHIP BROADCAST APPLICATION

Apply to a small area, allowing installer to reach the entire area with broadcast material. Broadcast chips until rejection. After the product is dry enough to sustain light traffic, chips may be scraped and reclaimed. If coverage is not complete, it is up to the installer to decide whether a second application of Endurable Concrete Armor is needed. If so, repeat the previous process. If coverage is complete, a coat of Endurable Concrete Armor may be applied to encapsulate the chips. This may be achieved by roller or spray application. After the Endurable Concrete Armor is dry to the touch, a coat of Endurable Concrete Sealer should be applied, mixed at a product to water ratio of 1:1. Endurable Concrete Sealer should be applied no more than 4 hours after Endurable Concrete Armor is dry to the touch to form a good chemical bond. Waiting too long after Endurable Concrete Armor has dried to apply sealer can sacrifice the chemical bond and lengthen the dry time of the sealer.

### **INTERIOR SAND/QUARTZ BROADCAST APPLICATION**

Apply to a small area, allowing installer to reach the entire area with broadcast material. Broadcast sand/quartz until rejection. After the product is dry enough to sustain light traffic, fill materials may be scraped or reclaimed. If coverage is not complete, it is up to the installer to decide whether a second application of Endurable Concrete Armor is needed. If so, repeat the previous process. If coverage is complete, a coat of Endurable Concrete Armor may be applied to encapsulate the fill material. This may be achieved by roller or spray application.

After the Endurable Concrete Armor is dry to the touch, a coat of Endurable Concrete Sealer should be applied, mixed at product to water ratio of 1:1. Endurable Concrete Sealer should be applied no more than 4 hours after Endurable Concrete Armor is dry to the touch to form a good chemical bond.

Waiting too long after Endurable Concrete Armor has dried to apply sealer can sacrifice the chemical bond and lengthen the dry time of the sealer.

When quartz or sand are used, they may be stained with the Endurable Concrete Stain. Follow the application instructions on the Endurable website. After the Endurable Concrete Armor is dry to the touch, a coat of Endurable Concrete Sealer should be applied, mixed at product to water ratio of 1:1. Endurable Concrete Sealer should be applied no more than 4 hours after Endurable Concrete Armor is dry to the touch to form a good chemical bond. Waiting too long after Concrete Armor has dried to apply sealer can sacrifice the chemical bond and lengthen the dry time of the sealer.

### **INTERIOR CLEAR COAT APPLICATION**

Endurable Concrete Armor may be applied to interiors surfaces at a 3 or 4 gallon mix ratio using all application tools. Applicator should determine which tools work best for the application. When dry enough to walk on without leaving footprints, Endurable Concrete Armor should be sealed with a coat of Endurable Concrete Sealer, mixed at product to water ratio of 1:1. Refer to Endurable Concrete Sealer mixing and application instructions on the Endurable website.

### **SELF-LEVELING OVERLAYS**

One of the advantages of the Endurable Concrete Armor is the ability to bond to smooth surfaces without mechanical preparation. Endurable Concrete Armor may be applied to many self-leveling, polishable, or gypsum overlay systems without grinding or sanding the surface. Follow the interior surface preparation instructions within this document.

### **SPRAYING ENDURABLE CONCRETE ARMOR**

Endurable Concrete Armor may be sprayed as either a 3 or 4 gallon mixture. When spraying as a 3-gallon mixture it is recommended to use a .10 conical tip. When spraying as a 4-gallon mixture it is recommended to use a .08 - .10 conical tip. Testing sprayers and tips before application is recommended to achieve optimal results. As with any chemical, respirators, eye protection, and gloves are recommended.

## DRY TIMES

- Approximately 1 - 2 hours for initial dry-to-the-touch
- Approximately 3 - 6 hours for light traffic
- Approximately 8 - 12 hours for heavy traffic

Air temperatures, humidity, and porosity of surface may affect the dry times. Product will gain strength over the next several days and will reach full cure at 7 days. It is recommended to wait as many days as possible before driving over the product with vehicles or heavy equipment.

## LIMITATIONS

Product must be applied properly to achieve optimal results. Product should not be applied over unstable surfaces. Although Endurable Concrete Armor is 3 - 4 times more UV resistant than most epoxy systems, be aware product could yellow over many years on exterior applications. Therefore, it is recommended to use Endurable Concrete Stain and Endurable Concrete Sealer to avoid visible yellowing on exterior jobs.

## SLIP RESISTANCE AND CLEANABILITY

The profile of the concrete will dramatically affect the slip resistance. Aggressive finishes, such as broom-finished concrete, will yield the best coefficient of friction but will be slightly more challenging to clean. Smooth surfaces will yield a lower coefficient of friction but are easier to clean. For additional slip resistance, 60 to 100 mesh polypropylene, sand, or aluminum oxide should be broadcast into the Endurable Concrete Sealer. When slip-resistant additive is used, it is recommended to mix the Endurable Concrete Sealer at a product to water ratio of 1:1. It is recommended to apply an additional coat of sealer to completely encapsulate and protect the additive.

## MAINTENANCE

Use Endurable Surface Cleaner to clean as needed. Reseal with Endurable Concrete Sealer as necessary - 5 to 10 years depending on traffic and usage. Routine buffing with a light pad on a low-speed buffer or burnisher can help maintain an even sheen and a clean surface. The floor may be buffed/burnished with polish and cleaning pads.

Rougher pads with heavy machines can cause more wear on the sealer. 1500 grit pads or above may be used after the sealer has fully cured. If the floor has a non-slip additive, it is highly recommended to clean by spraying the Endurable Surface Cleaner and let it dwell. Do not let the cleaner dry before removal. Rinsing with water to the drains is recommended. Excessive floor cleaning with a floor scrubber can lead to faster degradation of the non-slip additive. Excessive abuse with highly caustic chemicals can lead to a premature degradation of the sealer or may change the look or decorative nature. If reapplication of the sealer is needed, the floor should be cleaned and scuffed before a new application of Endurable Concrete Sealer is applied.

## **WARRANTY**

Evaluate whether this product is suitable for the intended application. Conditions of product use are outside of HDIP's control and vary widely, the following is made in lieu of all express or implied warranties of merchantability: HDIP's only obligation and the customer's only remedy are replacement of product, at the option of HDIP INC. In no case will HDIP INC be liable for any direct, indirect, special, incidental, or consequential damages including lost profits, goodwill, or business opportunity.

## **TECHNICAL ASSISTANCE**

For technical questions or support, call 800-910-3120 ext. 1 between the hours of 8:30 am to 4:30 pm PST.

## **STORAGE AND SHELF LIFE**

Product has a shelf life of a minimum of 1 year in original containers. Store product between 40 and 80 degrees Fahrenheit. Keep product free from excessive heat, moisture, and freezing.

## **SAFETY**

Use with proper ventilation. May cause eye and skin irritation. If you experience headaches, dizziness, or watery eyes, you may wear an Organic Vapor Respirator during application. When spraying material, an Organic Vapor Respirator is recommended. As with any chemical, respirators, eye protection, and gloves are recommended.