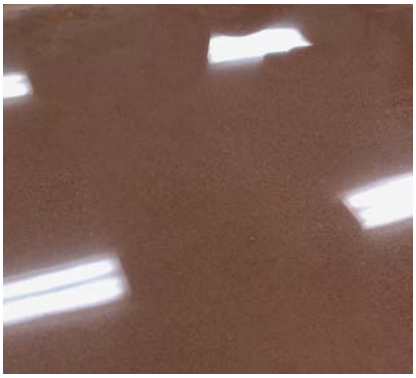
ENDURABLE

CONCRETE HARDENER™



- Does not leave discoloring salt deposits
- Compatible with ENDURABLE dyes and stains
- Works well with overlay products typically low in lime
- Lower PH than silicates
- Fast reaction times – typically under 1 hour
- No overnight curing process
- Concentrated to lower shipping costs
- May be applied to new concrete 2-3 days after pour
- Silica particle size below 8 nanometers
- Colloidal silica is able to bond to silica present in concrete
- Product has the ability to bond to itself, unlike silicates
- Increases abrasion resistance
- Increases moisture resistance
- Enables polishing process
- Reduces dusting
- Reduces efflorescence
- Water-based
- Zero VOC content
- Non-toxic
- Safe to handle
- Does not require agitation
- Does not require hazardous disposal
- Improves performance of concrete
- Improves appearance of concrete
- Extends life of concrete
- Increases surface hardness
- Increases compressive strength

ENDURABLE CONCRETE HARDENER is nearly 100% pure silica at a size between 3 & 8 nanometers. The proprietary solution in which it is suspended, provides low surface tension, resulting in excellent penetration of the silica into the concrete. The reaction of the silica with the remaining unreacted calcium hydroxide in the concrete, forms calcium silica hydrate. When concrete is poured, calcium silica hydrate is formed as the concrete cures. This process only continues, as the concrete remains wet. After the concrete is dry, no additional calcium silica hydrate is formed and the top surface of the concrete is usually left with unreacted calcium hydroxide, also known as lime. Obviously, the first part of the concrete to dry is the surface, therefore leaving a substantial amount of unreacted calcium hydroxide. This unreacted calcium hydroxide is akin to an epoxy with only the first component used. The hardener acts like the second component of the epoxy to actually create the chemical reaction, leaving the concrete harder and more abrasion-resistant. Colloidal Silica is distinctive in its ability to bond to the silica already present in concrete and it can also bond to itself. This allows for a much greater density than can be found with any silicates. The families of silicates include sodiums, potassiums, and lithiums. None of these products can match the abilities of colloidal silica to bond with the silica in the concrete, nor can they bond to themselves. Now that the superiority of colloidal silica over the silicate families has been established, one last question remains: What is the difference between colloidal silicas? The size of particle should be considered. The smaller the particle size, the better the results as there are more reaction points and the product can travel farther into the concrete at the smaller size.
ENDURABLE CONCRETE HARDENER is a colloidal silica with the a very small particle size of 3 to 8 nanometers. It is an excellent choice for a concrete hardener.

COVERAGE RATES: 300-700 square feet per gallon depending on porosity of concrete. High porosity concrete will be on the lower end and polished low porosity concrete will be on the higher end.

PACKAGING: Concentrate that makes 4 gallons & concentrate that makes 20 gallons.

SHELF LIFE AND STORAGE: Store product in temperatures between 40 and 100 degrees Fahrenheit. Do not freeze. Product has a shelf life of 2 years from date of purchase when stored in original unopened container.

WHERE TO USE: Use on any concrete surface or cementitious overlay product.

APPLICATION INSTRUCTIONS: This product is concentrated and should be mixed 3 parts water to 1 part product.
1. Shake product before mixing with water.
2. Stir the concentrate and water together for 30 seconds with a mixing drill and paddle. It may also be shaken for 1 minute.
3. Before application, be sure that concrete is clean and structurally sound. It must be free of any sealers, curing membranes, oils, dust, etc. Product must be able to achieve full contact with concrete to be fully effective. Do not use acidic cleaners. Use a PH neutral cleaner.
4. Use a low-pressure pump sprayer. Be sure to shake product right before putting into sprayer. Use a conical tip that sprays .05 to .15 gallons per minute. Spray with the tip1 to 2 feet above the surface and use a circular motion to achieve an even application. Spray enough product to achieve an even look of saturation. Keep the surface wet for a minimum of 15 minutes, applying additional product when necessary to keep surface wet.
5. Allow surface to dry completely. This usually takes less than one hour. If concrete seemed porous on the first application, you may wish to apply a second application to achieve optimum formation of calcium silica hydrate.
6. When using product in conjunction with polishing, it is best to apply the product at 200 or 400 grit. If desired, ENDURABLE CONCRETE DYE should be applied prior to the application of hardener. A second application of ENDURABLE CONCRETE DYE may be used to achieve a richer color in the concrete after the ENDURABLE CONCRETE HARDENER has been applied and is completely dry.

TEST DATA:

ABRASION RESISTANCE (ASTM C779)	**33% increase at 30 minutes**
COMPRESSIVE STRENGTH (ASTM C39)	**40% increase at full concrete cure**
IMPACT RESISTANCE (ASTM C805)	**14% increase at full concrete cure**

LIMITATIONS: Product should not be cleaned with citric or abrasive cleaners. PH neutral cleaners should be used for long-term maintenance. This product is not a "sealer" and will not prevent staining. Use another ENDURABLE product if you wish to seal and protect from staining.
PRODUCT AVAILABILITY: Product is available through retail distributors around the world. Go to www.endurableproducts.com to find the nearest distributor.
DISPOSAL: Product is safe, biodegradable, and environmentally friendly.
WARNINGS: Use with proper ventilation. May cause eye and skin irritation. If you experience headaches, dizziness, or watery eyes, you may wear a NIOSH TC-84 respirator during application. Use extreme caution when walking on wet product, as the product is slippery when wet.
WARRANTY: HDIP INC. warrants that properly prepared and structurally stable concrete treated with ENDURABLE CONCRETE HARDENER, according to the manufacturer's instructions will remain dustproof and hardened for a minimum of 20 years. This warranty does not apply if product is not applied properly or if structural faults occur due to faulty workmanship, improper design, or failure of materials other than ENDURABLE CONCRETE HARDENER. Remedy of failure is sufficient ENDURABLE CONCRETE HARDENER, supplied at the manufacturer's expense, to reapply to defective area.

All products are labeled with full instructions. Additional information may be found on technical data sheets available at our website: www.endurableproducts.com. You may also view helpful instructional videos available on the website.

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The website provides additional tips and techniques for the individual products. Color selections are also available on website.

www.endurableproducts.com

800-910-3120