

1. Product Name

Ashford Formula

2. Manufacturer

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3. Product Description

BASIC USE

Ashford Formula, a leader in concrete densification since 1949, is a transparent, chemically reactive, water-based treatment that penetrates concrete and masonry building materials, protecting, preserving and strengthening them permanently by:

- **Curing:** Ashford Formula reduces crazing, enhances 28-day compressive strength, and provides surface abrasion resistance. All of these are evidence of a good cure. When applied to properly placed, structurally sound freshly finished concrete, Ashford Formula will uniformly cure the concrete through a combined chemical/moisture retention reaction vital to the hydration process.
- **Densification:** Ashford Formula penetrates into the concrete surface, forming a chemical reaction of crystalline growth that fills in the natural pores and voids in the concrete surface.
- **Hardening:** Ashford Formula solidifies the component parts of the concrete into one solid mass, increasing the density, toughness, hardness and substantially increasing the abrasion resistance and durability of the concrete surface. Smooth steel-troweled surfaces develop a marble-like finish and sheen.
- **Dustproofing:** Ashford Formula chemically reacts with the salts in the concrete, permanently eliminating the release of concrete dust through the surface pores.
- **Neutralizing Alkali:** As the Ashford Formula progressively penetrates the concrete, it neutralizes the alkalis, forcing them to the surface where they can be washed away during the application.
- **Bonding:** Ashford Formula prepares the treated surface for paints, caulking compounds, adhesives and floor coverings by eliminating the surface concrete salts that are detrimental to proper bonding. Ashford Formula contains no silicone and is coatable and compatible with any type of covering when standard surface preparation guidelines are followed.

Distribution Center, Brighton, CO, USA



- **Tire Marking:** The Ashford Formula reduces the incidence of tire marking. Take necessary precaution with new tires sitting on the surface for prolonged periods of time.

With proper and sufficient application of Ashford Formula, concrete or other masonry is cured and permanently densified, creating a robust barrier that makes it more difficult for oils, greases, and other surface contaminants to penetrate. The internal components of the concrete are transformed into a cohesive, solid mass that significantly toughens, hardens, and increases its density. As a result, this significantly reduces dusting and surface alkali migration under typical conditions. However, in the absence of a vapor barrier or under conditions of high hydrostatic pressure, heavy laitance and alkali deposits may still form on the surface over time.

Treatable materials include concrete, heavyweight concrete block, mortar, plaster, stucco, terrazzo, exposed aggregate and any sand-aggregate-portland cement combination. Applications include warehouses, distribution facilities, aviation hangars, manufacturing plants, food processing and distribution buildings, pulp and paper mills or other types of facilities with large exposed concrete floors.

COMPOSITION AND MATERIALS

Ashford Formula complies with all USDA regulations and is nontoxic, noncombustible and nonflammable. It is not harmful to lungs or hands and contains no volatile organic compounds (VOCs).

SIZES

Ashford Formula is available in 55 gallon (208 L) drums and 5 gallon (19 L) pails.

COLOR, FINISH

Ashford Formula is clear and will not change the natural

appearance of masonry or concrete. Where alkali, lime and other impurities are forced to the surface and the natural appearance is to be preserved, all treated surfaces must be flushed clean with clear water in accordance with manufacturer's instructions.

On smooth steel-troweled concrete surfaces, a natural wax-like sheen appears between 6-12 months after treatment and can be accelerated by burnishing after curing. The sheen is produced by the hardening and densifying properties of Ashford Formula, along with the gentle abrasion from routine cleaning and use. Water from cleaning can also accelerate the crystalline densification of the concrete surface. Frequent maintenance is recommended to enhance and preserve the sheen. With proper maintenance and care, a durable sheen will develop and the total benefits of Ashford Formula are typically achieved after 6-12 months.

BENEFITS

- Reduces crazing in new concrete.
- Only one application creates a permanent, dense surface that is more solid than untreated concrete.
- Hardens and strengthens within the concrete mass, protecting against deterioration and producing a floor that is resistant to traffic. Rather than eroding, the floor surface actually self-polishes with use.
- The treated surface can help minimize the impact of dust, oils, greases, and other contaminants, such as tire marks, making it easier to clean. With regular maintenance, oil and grease stains may gradually lighten over time.
- Effective in assisting with curing when applied immediately after the finishing operation - helping to stabilize the surface, minimize crazing, and increase abrasion resistance.
- Prepares the treated surface for paints, caulking compounds, adhesives and floor coverings.
- Covers approximately 200 ft²/gal (5 m²/L), depending on ambient conditions and surface porosity.
- Compatible with any type of covering when standard surface preparation guidelines are followed.
- Thinners not required. Equipment is cleaned using water only.

LIMITATIONS

- On concrete where high volumes of de-icers/road salts are allowed to accumulate, or in other salty environments, additional protection is required, such as Curecrete's Salt Slayer™.
- The Ashford Formula is not for application over areas previously treated with curing or sealing agents unless these coatings have been removed by chemical or mechanical means.
- The Ashford Formula should not be used as a curing agent when Type K shrinkage compensating cement is used or when shrinkage reducing admixtures with hydrophobic properties are used.
- On concrete that is abnormally porous or soft, additional applications of the Ashford Formula may be required. This also applies to surfaces with open finishes, such as broom finished or scarified floors.

- At standard coverage rates, the Ashford Formula cannot resolve dusting or erosion problems related to over-troweling, carbonation or poor surface water-to-cement ratio. Additional material can, but will not always, resolve these problems.
- Non-chloride admixtures are recommended as calcium chloride can cause heavy salt deposits on the surface and produce unpredictable effects on the concrete color.
- Concrete mix designs with over 15% total combined pozzolanic materials (fly ash, granulated blast furnace slag, silica fume, etc.) of the total cementitious material will be warranted for hardening and dustproofing only.
- In cases of excessive moisture and/or extreme hydrostatic pressure from beneath the slab, Ashford Formula's densification reaction may not prevent excessive salt migration.
- The Ashford Formula is not to be used to treat lightweight block or other extremely porous masonry that contains actual holes and air pockets.
- The Ashford Formula may not prevent or reduce tire marking on the floor if the concrete surface has been roughened, subjected to grinding before or after application, or exhibits extreme porosity. A profiled surface will cause the tire to transfer more material from the tire to the floor.
- For low-carbon (Type 1L, etc.) concrete mix designs, conduct thorough performance testing. The use of Curecrete's PowerPrep LC™ as a preconditioner, followed by a full treatment of the Ashford Formula, may be necessary for optimal performance.

4. Technical Data

APPLICABLE STANDARDS

American Society for Testing and Materials (ASTM)

- **ASTM C779** Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces
- **ASTM C805** Standard Test Method for Rebound Number of Hardened Concrete
- **ASTM C1028** Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
- **ASTM D3359** Standard Test Methods for Measuring Adhesion by Tape Test
- **ASTM F150(06) 2018** Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring
- **ASTM G23** Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials (Withdrawn 2000)

National Floor Safety Institute (NFSI)

- **NSFI B101.1** Test Method for Measuring Wet SCOF of Common Hard-Surface Floors
- **NSFI B101.3** Test Method for Measuring Wet DCOF of Common Hard-Surface Floors

- Certified as High Traction by the National Floor Safety Institute (NFSI), Phase 2 testing

USGBC LEED Version 4

- Indoor VOC Emission Test; California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017

Health Product Declaration Collaborative (HPD)

- **HPD v2.3**

PHYSICAL/CHEMICAL PROPERTIES

See Table 1 (*last page*).

5. Installation & Disposal of Effluent

PREPARATORY WORK

Product should be in the manufacturer's original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer. If the Ashford Formula freezes in transit, or from outdoor storage in freezing conditions, allow the material to thaw out, then agitate the container. The material remains suitable for use. Storage life is indefinite. Agitate before use if product is more than one year old.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

On existing concrete remove all surface coatings. To remove dust, dirt and contamination from areas to be treated, sweep the surface using a fine-bristled broom or hose off with water and allow to dry. Ashford Formula can be applied to damp surfaces as long as all puddled areas are swept away. This prevents the Ashford Formula from becoming diluted before it is able to penetrate the surface.

METHODS

Ashford Formula may be applied on new concrete by owners, contractors, or qualified applicators. If owners or their contractors apply the material, Curecrete recommends that a field technician be on hand to provide assistance and ensure the application is done correctly. On existing concrete, Curecrete recommends that only qualified applicators prepare the surface and apply the material. Outside of the United States, the Ashford Formula can be applied only by certified applicators.

COVERAGE RATE

The coverage rate is ultimately determined by the contractor based on the concrete's porosity and ambient conditions. The key factor is ensuring the product remains wet and continues penetrating for at least 30 minutes. Coverage rate is approximately 200 ft²/gal (5 m²/L).

New Concrete

When using the product to assist curing, apply immediately following the finishing operation. Application is recommended using a low-pressure, high-volume pump. Keep the entire surface wet with Ashford Formula for 30 minutes, working it into the concrete surface with a soft-bristled broom.

As the Ashford Formula becomes slippery underfoot, lightly mist the surface with water. As it again becomes slippery underfoot, thoroughly flush the entire surface with water and squeegee it completely dry to remove all surface alkalis and/or Ashford

Formula residue.

On exterior broom-finished surfaces, no flushing is required, but any remaining Ashford Formula must be squeegeed or broom-swept from the surface after 30-40 minutes.

Newly placed concrete requires the normal hardening period. Allow 30 days for proper curing before applying paint or coverings.

Old Concrete/All Cured Surfaces

Spray product with a low-pressure sprayer or pour and brush with a soft-bristled broom to saturate the entire surface with Ashford Formula. Keep the surface wet with the product for 30 minutes.

- **Option 1:** If the majority of the Ashford Formula has been absorbed into the surface after 30-40 minutes, broom or squeegee any excess material from all low spots and puddles so that all remaining Ashford Formula is entirely absorbed into the concrete, or is totally removed from the surface.
- **Option 2:** If after 30-40 minutes the majority of the Ashford Formula is still on the surface, wait until it becomes slippery underfoot, then thoroughly flush the entire surface with clear water. Squeegee the surface completely dry to remove all Ashford Formula residue.

The surface can be used as soon as it is dry to the touch and the application is complete. Allow 3-7 days before applying paint or coverings.

Instructions for tilt-wall applications and vertical surface applications are available upon request. Contact Curecrete for details.

PRECAUTIONS

Application Considerations

- Apply the product with a low-pressure sprayer only. Do not use airless sprayers, as they atomize the material, allowing inhalation which may pose a health hazard and/or result in wasted material.
- Diaper all construction equipment components that might drip oil, hydraulic fluid or other liquids.
- Apply Ashford Formula to colored concrete only after the slab is fully cured.
- Prevent Ashford Formula from getting on glass, aluminum stainless steel or other finished surfaces. If contact occurs, wipe it off with a damp cloth or flush the affected surface with water immediately while the material is still wet. Do not let the Ashford Formula dry on these surfaces, as it can cause etching. Mask all finished surfaces to prevent contact.
- Do not apply Ashford Formula when the surface temperature of the slab (as measured by a surface thermometer) falls below 35°F (1.7°C). In extreme conditions, refer to the [Ashford Formula Application Instructions](#) for further details.
- Protect new concrete from freezing for a period of six days.
- If the Ashford Formula becomes frozen, thaw and agitate before using.

Safety

- If ingested, do not induce vomiting. Drink large amounts of milk or water and consult a physician immediately.
- May cause eye and mucous membrane damage. Avoid contact with eyes and mucous membranes. If contact occurs, flush with water for 15 minutes.
- Surfaces treated with the Ashford Formula temporarily become slippery during application. Exercise care and caution to avoid slipping and falling.

BUILDING CODES

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

DISPOSAL OF EFFLUENT

Effluent from flushing the Ashford Formula should be disposed of properly to prevent environmental contamination. Avoid directing runoff into storm drains. Instead, use designated wash-out pits or sanitary sewer drains. To reduce the pH level of the effluent, dilute with copious amounts of water before disposal. Comply with all local regulations for proper disposal.

6. Availability and Cost

AVAILABILITY

Curecrete Distribution, Inc. has warehouses throughout the United States, allowing for next day delivery to more than 95% of all zip codes, as well as same day service in some areas. Contact the manufacturer for local availability information.

COST

Ashford Formula is competitively priced. For specific price information, contact Curecrete Distribution, Inc.

7. Warranty

Curecrete Distribution, Inc. warrants that a properly prepared and structurally sound concrete or masonry surface treated with the Ashford Formula, according to the manufacturer's

application directions will remain dustproof, hardened and water resistant for 20 years. If the treated surface does not remain dustproof, hardened and water resistant after the specified densification period, Curecrete Distribution, Inc. will supply, at its own expense, sufficient Ashford Formula to re-treat any defective area. This warranty does not apply if the Ashford Formula is improperly applied or if structural faults occur due to faulty workmanship, improper design or failure of materials other than the Ashford Formula. Complete warranty terms and conditions are available from the manufacturer. For details, consult Curecrete Distribution, Inc.

8. Maintenance

Scrub the floor often. The abrasion polishes the floor and enhances the shine. Ample water used with routine detergent scrubbing will accelerate the densification process. Curecrete Distribution, Inc. recommends using a detergent void of acids, sulphates and hydroxides, such as CreteClean Plus with Scar Guard™, with a pH of 9-10 (diluted for use) to clean the floor. Acidic cleaners or sweeping compounds will dull the surface appearance.

Clean spills quickly, especially acidic substances, which must be neutralized immediately to prevent etching. Neutralize acids as they will continue to react with the surface until properly treated.

Keep a good oil emulsifier on hand to clean oil, grease or fats. Waxing or coating with other products is unnecessary and is not recommended.

9. Technical Services

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting Curecrete.

10. Filing Systems

Additional product information is available from the manufacturer upon request.

Table 1 - Physical/Chemical Properties	
Abrasion resistance (ASTM C779)	32.5% increase at 30 minutes
Surface adhesion (ASTM D3359)	22% increase in epoxy adhesion; no change for polyurethane adhesion
Curing	93% greater moisture retention during the initial critical 24 hr curing period compared to untreated samples
Impact resistance (ASTM C805)	13.3% increase in impact resistance compared to untreated samples
Permeability	0.00073 oz (0.022 cc)/hr seepage rate using a 7 ft (2.13 m) head of water and a 4.91 in ² (3168 mm ²) treated area
Coefficient of friction (ASTM C1028)	0.86 dry; 0.69 wet
Coefficient of friction (ANSI 101.1)	Average SCOF 0.67
Coefficient of friction (ANSI 101.3)	Average DCOF 0.54
High Traction	High Traction - NFSI Phase 2 Certified
Weathering (ASTM G23)	Ultraviolet light and water spray exposure had no adverse effect on treated samples
Electrical resistance	Virtually equal to the existing concrete (ASTM F150: 10 ⁸ Ω)
CDPH/EHLB/Standard Method Version 1.2, 2017	Indoor Air Quality Certified Compliant according to California Department of Public Health