



HIBOND®

Premium
rewettable
bonding agent for
plaster and
concrete
applications

Advantages:

- No VOC's
- Water based
- Easy to apply
- Ready to use
- Re-emulsifiable
- Strong durable bond

Coverage:

- Bonding Agent (straight) – 250-300 ft² per gal (6.1-7.4m²/liter)
- Admixture – 1-2 gal (3.8-7.6 liters) per 94 lbs (42.6kg) cement in mix

See Coverage
section for full
details

Packaging:

- 55 gal (208.2L) drum
- 5 gal (18.9L) pail
- 1 gal (3.8L) jug (4/case)



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publications

Product Description

HIBOND® is designed to be used as a "paint-on-type" bonding agent or as an admixture to grouts, mortars, stuccos, portland cement or gypsum based plasters and patching compounds. It is a thick milky white liquid available with a blue dye upon request. When used as a bonding agent, HIBOND forms a glue line type coating that helps create a chemical bond between a compatible substrate and a suitable top layer. When used as an admixture, HIBOND is blended with the raw ingredients to increase adhesion to the substrate, cohesion between components of the mixture, and to increase the physical characteristics (durability/curing) of the end product.

Synthetic latexes such as HIBOND® are made by dispersing polyvinyl acetate (PVA) polymer particles in water to form a polymer emulsion. When this emulsion is painted on the surface, it forms a glue line that adds adhesiveness to the critical bonding point when additional concrete or plaster mixes are applied. When this same emulsion is added to cement or plaster mixes, the spheres of polymer will coalesce or come together to form a film that coats the aggregate particles and the hydrating cement grains. The resulting mixture bonds better to existing concrete, develops higher strengths, reduces chloride moisture penetration, and is more resistant to chemical attack than untreated concrete.

HIBOND® is a latex adhesive specially formulated to create a strong bond at the glue line when used as a "painted-on" bonding agent, or to increase adhesion and cohesion of cementitious or gypsum plaster mixes when used as an admixture.

Basic Uses - Bonding Agent

When used as "paint on" coating on a suitable substrate, HIBOND® dries to a uniform film that retains plasticity and never becomes brittle. It re-wets when exposed to wet concrete or plaster mixes creating a 3-

way bond (chemical, mechanical, and adhesive). Chemical bond is formed as the wet cement mix is applied over the HIBOND® causing it to re-wet, forming a bond within the crystalline structure of the new material being applied. Mechanical bond is formed as the HIBOND® penetrates into the pores of the substrate forming a mechanical interlock or physical keying. Roughing or scarifying the substrate will give additional mechanical-physical keying. An adhesive bond is formed as the moisture evaporates from the HIBOND® developing adhesion within the surface pores of the base material.

Basic Uses - Admixture

When used as an admixture, part of the mixing water is replaced with HIBOND® that results in a mix that has greater adhesion, higher tensile strengths, and more cohesiveness. Portland cement type mixes become more impact resistant, less brittle, and have much greater adhesion especially when thin edging is required.

HIBOND® is a beneficial admixture when conventional cement mixes cannot be adequately cured. It establishes a superior curing characteristic that is very important to the complete hydration of thin applications of portland cement mixes. It forms a surface skin that reduces water evaporation along with its chemical ability as a polymer to attract and hold water for a complete cure.

Installation

Before using this product, please refer to the Material Safety Data Sheet for additional information. Proper handling precautions MUST be followed. The conditions of use, handling, and application of this product and information (whether verbal or written), including any suggested formulations and recommendations, are beyond Lambert Corporation's control. Therefore, it is imperative that testing be performed to determine satisfaction and suitability for intended use and health, safety, and environmental issues. The following

information is meant as a guideline of best industry practices. While Lambert Corporation does suggest adherence to these guidelines, unforeseeable variables and/or developed successful installer practices may cause variation in methods and/or results.

Surface Preparation

All spalling, scaling, crumbly material must be removed from surfaces and crevices, and the area rendered structurally sound. Dust, dirt, oil, wax, chalky or loose paint, mildew, rust and other foreign material must be removed for adequate bonding. New concrete must be allowed to cure according to industry standards.

Painted surfaces must be sound, washable, and firmly adhered to substrate. Do not apply HIBOND® over water-soluble calcimine paints or rusted surfaces. Wait 60 days before applying over newly painted surfaces. Glossy painted surfaces should be dulled or roughened with abrasive. When the surface causes water to bead like it does on wax paper, you will most likely have a problem with bonding. These areas need to be sandblasted, scarified, bush hammered, or acid etched to produce an acceptable open surface for bonding. If surface is questionable, apply a test patch with the product/system specified.

Never apply cement plaster or toppings where efflorescence is present. Efflorescence is a white soluble salt that breaks down the bond of any cement-based product. These areas need to be sandblasted to produce an acceptable sound, and open substrate for bonding.

Mixing and Application Instructions

Used as a Bonding Agent Only

Stir HIBOND® well prior to use, make sure no settling has occurred. HIBOND® should be used straight from container with no dilution for maximum bond strength. If concrete substrate is very porous, presoaking with clean water will prevent rapid water absorption from HIBOND®. Apply uniformly like a coat of lacquer using spray, brush, or roller. Form a continuous thin film over the entire surface to be bonded and allow to penetrate (15-20 minutes). Check to be sure there is no peeling or curling before applying wet plaster or cement. Film can be tacky or dry at time of application. Fresh films of HIBOND® are water sensitive as the product must re-emulsify upon application of the cement plaster.

Caution

On toppings of 1/2-inch (13 mm) or more use HIBOND® as a bonding grout mixed with portland cement as outlined in "Used as a Bonding Grout". On toppings of 1/2-inch (13 mm) or less, maximum adhesion and performance can be obtained by using HIBOND® as an admix in the new concrete, as well as a bonding agent at the glue line.

HIBOND® films lose much of their water sensitivity on aging and may not redisperse. If too much time passes between applying HIBOND® and placing a succeeding layer, the film could act more like a bond breaker. Maximum permissible open time is unpredictable and can vary from 1 to 4 weeks. Should the HIBOND® film lose its water sensitivity prior to application of cement plaster, a fresh coat of HIBOND® must be applied before plastering. If surface is questionable, apply a test patch with the product/system specified.

Used as a Bonding Agent For Cement Plaster Stucco

HIBOND® should be applied as described above. Prior to application of cement plaster inspect bonding agent application to assure a continuous film is over entire bonding surface. Re-apply over areas not satisfactorily covered. Protect film from dirt and debris until cement plaster finish is in place. For two-coat application of cement plaster/stucco, apply scratch coat a minimum of 3/8-inch (9.6 mm), allow to dry, then apply finish coat a minimum of 1/8-inch (3.2). Where two coats of cement plaster are necessary, only the first coat is bonded by HIBOND®. The first coat should be a minimum of 3/8-inch (9.6 mm) thick and permitted to dry before second coat application. If drying is not allowed, moisture in the finish coat will penetrate the scratch coat and flood the HIBOND® film (which has not had time to cure) resulting in a possible bond failure.

Used as an Admixture - Cement Mixes

Recommended levels of use for concrete admixture applications range from 5-10% polymer by weight, based on the Portland cement content of the mix. For every 94-pound (42.6kg) bag of cement used in a mix, 1 gallon (3.8L) of HIBOND® is required to obtain the minimum 5% concentration level, 2 gallons (7.6L) for maximum of 10% concentration.

Used as a Bonding Grout

Mix 1 gallon (3.8L) HIBOND® with 20-lbs (9.1kg) cement. Mix to a creamy consistency. Scrub grout onto prepared surface to be bonded. Mix only that quantity that can be used in 15 minutes. Place concrete before grout dries. Caution - If the concrete is manipulated after the HIBOND® has coalesced, cracking may occur on drying. Due to the short working time, steel-trowelled finishes are difficult if not impossible to produce without surface cracking.

Curing Procedures

A HIBOND® polymer film formed as the latex coalesces helps to maintain high levels of internal moisture in the concrete. Because of this, prolonged curing is neither necessary nor recommended.

Solvent-based sealers (and cure-and-seals) may have a slight softening effect on HIBOND® modified cement mixes if applied prior to full cure.

Limitations

Do not use where long-term exposure to constant water is possible. Polyvinyl acetate latexes (HIBOND®) require air curing and become less effective in very moist environments. HIBOND® provides excellent results with intermittent water exposure, but is not recommended for use in areas of continuous water exposure, such as swimming pools or water tanks. Use a non-rewettable product such as Lambert's liquid acrylic resin concrete admixture for areas of continuous water exposures.

Do not use where hydrostatic pressure is present in the substrate, on concrete that is frozen, or over efflorescence. Not recommended for use with anti-freeze agents, accelerators, or air entraining admixtures. HIBOND® latex emulsions have a minimum temperature below which the polymer spheres will not coalesce to form a tough durable film. This placement temperature is 45°F (7.2°C). Placing of concrete products at temperatures below 45°F (7.2°C) is not recommended

because of poor cement hydration and polymer coalescence. Placement at substrate temperatures above 85°F (29.4°C) is cautioned because the working time is generally too short. Pre-wetting concrete will lower substrate temperatures and improve working times.

FAST SET PATCHING CEMENTS MUST BE APPLIED WHILE HIBOND® FILM IS STILL TACKY.

Do not store HIBOND® below freezing temperatures. Prolonged freezing may damage contents. Frozen material should immediately be placed in a warm environment to gradually thaw. Direct heat should not be applied. If product can be stirred easily after thawing, bonding qualities most likely have not been lost. Apply a test patch with the system specified to determine bonding qualities of frozen HIBOND®.

Technical Data

Applicable Standards

- ASTM C 631
- ASTM C 1059, Type I
- MIL B - 19235C (Docks)
- CORPS OF ENG - CE 240.01

PHYSICAL DATA

Solids, % By Weight	50.0% -55.0%
Weight Per Gallon	9.4 lbs (1.1kg/L)
Shelf Life	6 months
Freeze - Thaw Stability	5 cycles
Odor	Very low
Specific Gravity	1.08

PROPERTY

TEST METHOD

Tensile Bond Strength

ASTM C – 190
Pulling apart neat portland cement briquette halves bonded together.

RESULT: 380 PSI (2.6MPa), average 28 days. In all cases failure occurred in the cementitious material - not within the bond

Flexural Bond Strength

ASTM C-78
Concrete beams laminated with bonding agent

RESULT: 500 PSI (3.4MPa)

Shear Bond Strength

ASTM C-39
Slant shear cylinder test

RESULT: 460 PSI (3.2MPa), average 28 days

Flammability

Laboratory tests for fire resistance

RESULT: Non-flammable, meets MIL-B-19235C

(42.6 kg) bag of cement used in a mix, 1 gallon (3.8 liter) of HIBOND is required to obtain the minimum 5% concentration level, 2 gallons (7.6 liters) for maximum 10% concentration.

Clean-Up & First Aid

Clean-Up

In case of spills, flush area with large amounts of water, place into appropriate container, and dispose of in accordance with applicable local regulations. Uncured HIBOND® can be removed with water. Cured HIBOND® can be softened with lacquer thinner.

First Aid

Inhalation - Remove to fresh air.

Eye and Skin Contact - Promptly wash eyes with plenty of water for 15 minutes. Consult a physician if irritation persists. Wash skin with soap and water.

Ingestion - Drink plenty of water, may cause irritation of the mouth, throat, or stomach. Do not induce vomiting. Seek medical attention for all over exposures.

*KEEP OUT OF REACH OF CHILDREN.
FOR INDUSTRIAL USE ONLY.*

Coverage

- Used straight as a "paint-on" bonding agent - 250 to 300 square feet per gallon (6.1-7.4 m²/L)
- Used as admixture to cement mixes - For every 94-pound