Silicoseal 2000F

Liquid Bonding Admixture

Description

In contrast to most conventional cure and bondbreakers, Silcoseal 2000F does not contain any wax or hydrocarbon resins and, as a result, does not depend on a physical barrier deposited on top of the casting slab to prevent bonding. Instead, Silcoseal 2000F consists of a special formulation of chemically reactive organic compounds in a predominately water based solvent system which chemically react with calcium hydroxide, a byproduct of the cement hydration reaction, present in the concrete surface pores. The reaction products are amorphous gels which, in conjunction with other combined special organic compounds in Silcoseal 2000F, effectively seal concrete surface pores. Moisture entry or exit is restricted, allowing good retention of concrete mixing water to assist in providing proper cement hydration and concrete curing, minimizing concrete surface cracking and crazing.

Properly applied, Silcoseal 2000F positively prevents the bonding of tilt wall panels to casting slab floor surfaces.

Primary Applications

- Use as a cure and bondbreaker in tilt-up, lift slab and precast concrete construction.
- Use to cure the top side of tilt wall panels to prevent the formation of shrinkage cracks.
- Use as a cure only on all types of interior, smooth troweled concrete flatwork where the use of conventional resin based curing compounds is impractical.

Features & Benefits

- Resistant to the “osmotic effect” by restricting the natural tendency for water to migrate from freshly placed panel concrete through the bondbreaker film and into the less moist casting slab. Reducing the “osmotic effect” greatly improves panel concrete surface appearance resulting in a smooth, uniform surface profile, color and appearance.
- Achieves exceptional wall panel surface appearance.
- Leaves no residue or resulting staining on wall panel or casting slab floor surfaces when properly applied.
- Achieves a crisp, positive release that minimizes panel surface defects and reduces panel resurfacing/ patching costs.
- Does not contain any wax or hydrocarbon resins like many conventional bondbreakers which often leave a difficult-to-remove residue on wall panel and casting slab surfaces. When this residue is not properly removed, it often causes floor and exterior wall panel paint and coating adhesion problems.
- Meets the modified moisture retention properties of ASTM C-309 when applied to a steel-troweled surface.
- Special blend of fast-drying solvents significantly reduces drying time.
- Improved emulsion stability means Silcoseal 2000F stays mixed longer than conventional water based bondbreakers.
- Resists washoff from normal rain showers and dew once dry.
- Dust, dirt and mud can be easily removed from casting slab floor surfaces by washing with low pressure water when Silcoseal 2000F is used as both the cure and bondbreaker.
- Resistant to sunlight induced oxidation damage that can necessitate the reapplication of competitive bondbreakers even when panel concrete placement is delayed a few days.
- Green Engineered™ – better for health and the environment.
- Meets all current federal and most state* VOC requirements for tilt-up bondbreakers and curing compounds. * Does not comply with OTC states and California VOC regulations for use as a cure or bondbreaker. Does not comply with VOC regulations for use as a cure in Maricopa County, Arizona. precautions
- Not recommended for use as a bondbreaker on broom finished or rough finished concrete surfaces.
- Not recommended for application over any other manufacturer’s inorganic silicate based floor sealer, hardener or organic resin based curing, sealing or

Continued on reverse side

combination cure and seal product. Failure to follow this recommendation can result in panel surface defects or panel sticking.

- If a delay of more than 2 weeks occurs between the final bondbreaker application coat and panel concrete placement, it will be necessary to check for a sufficient bondbreaker film on the casting slab. If the bondbreaker film is determined to be insufficient, additional bondbreaker coat(s) must be reapplied as necessary before concrete placement.
- Protect from freezing. If allowed to freeze, product packaging may rupture and the emulsion stability of this product may be affected, making it difficult to keep product mixed during application.
- Product which is suspected of freezing should not be used.
- Verify that product is within the "USE BY" date stated on product packaging. Do not use expired product. The use of expired product may result in poor product performance or failure.
- Carefully inspect all casting slab surfaces prior to panel concrete placement to ensure an adequate film of bondbreaker is uniformly present. Not recommended for application over or in conjunction with any other manufacturer's tilt-up bondbreaker.
- Not recommended for application in the rain or if rain is anticipated within 12 hours of application. Surfaces exposed to rain or running water within this time period will require reapplication. Not recommended for bondbreaker application to casting slab surfaces previously cured with polyethylene or curing blankets without first removing all salt deposits. Failure to remove all salt deposits can result in panel surface blemishes or defects.
- Not recommended for application to casting slab surfaces which are frozen or when ambient temperatures are below 400 F (40 C) or expected to drop below 400 F (40 C) within 12 hours following application.
- Not recommended for application without the proper sprayer and correct spray tip. See USE INSTRUCTIONS for specific sprayer and tip size recommendations.
- Not recommended for cure coat application prior to saw cutting crack control joints. Best results are obtained when Silcoseal 2000F cure coat is applied immediately after final finishing and joint saw cutting has been completed.Not recommended for use in tilt-up applications where casting slab or panel concrete mix design incorporates pozzolans such as fly ash without first contacting CMCCS for specific recommendations regarding application procedures and rates. Failure to do so may result in panel surface blemishes and/or panel sticking.

Directions For Use

- Request current product literature, labels and material safety data sheets from manufacturer and read thoroughly before product use.
- Site environmental conditions, substrate conditions and construction have a major effect on product selection, application methods, procedures and rates, appearance and performance. Product literature provides general information applicable to some conditions. However, an adequate site test application by the purchaser or installer in advance of field scale use is mandatory (irrespective of any other verbal or written representations) to verify that product and quantities purchased can be satisfactorily applied and will achieve desired appearance and performance under intended use conditions.
- Apply using NOX-CRETE'S PERFECT FORM AND CONCRETE SPRAYER or IDEAL SILCOSEAL CURE AND BONDBREAKER SPRAYER. Recommended spray tip sizes are 8003-LP, 8004-LP and 8005-LP. The coarser (8005-LP) spray tip should be used on porous casting slab surfaces where additional bondbreaker is necessary to ensure sufficient film holdout. Use the less coarse (8003-LP) spray tip for application on less porous casting slab surfaces. The use of an improper sprayer and/or incorrect spray tip generally results in either over or under application.
- Silcoseal 2000F should be applied in accordance with recommended procedures to achieve even and

Continued on reverse side

uniform coverage. Equipment should be clean and dry prior to use.

- Typical drying time is 30 minutes to 3 hours, but varies with the presence or absence of a moisture barrier beneath the casting slab, climatic conditions and application rate. Extended drying times in excess of 24 hours are possible in cure coat applications when product is applied heavily during cool weather and a moisture barrier is present. Reducing the application rate and applying in multiple thin coats in lieu of one heavy coat will greatly reduce drying time.
- Avoid scouring the casting slab surface during panel concrete placement by using a deflection board.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE THE VARIOUS CONDITIONS ON EACH PROJECT AND TO DETERMINE THE CORRECT APPLICATION RATE OF THE SILCOSEAL 2000F CURE COAT. IF UNSURE, CONTACT CMCCS FOR SPECIFIC RECOMMENDATIONS.
- WHEN CLIMATIC CONDITIONS ARE EXCESSIVELY HOT, DRY AND/OR WINDY DURING CONCRETE PLACEMENT OR CURING AS DEFINED BY THE AMERICAN CONCRETE INSTITUTE'S REPORT ACI 305, THE USE OF CMCCSCURE & SEAL ??? AS A CURING MATERIAL OR A WET CURE CONSISTING OF BURLAP AND POLYETHYLENE IS RECOMMENDED IN LIEU OF SILCOSEAL 2000F TO PROVIDE ADDITIONAL PROTECTION FROM SLAB OR PANEL MOISTURE LOSS.

Bondbreaker Application

- Casting slab areas should be well cured, smooth and dense.
- Remove all dust, dirt, saw cut residue, standing water and other contaminants prior to applying bondbreaker coats.
- The number of bondbreaker coats and related application rate required to achieve complete, uniform coverage of casting slab varies with concrete mix design, placing and finishing procedures, weather conditions, etc. Because of this, it is not possible to prescribe application rates or procedures inclusive of all site variables.
- Best results are obtained when successive coats of Silcoseal 2000F are applied at right angles (perpendicular) to each other.
- An adequate application is indicated by the presence of a dry soap-like feel uniformly apparent to touch over the entire treated area with no indication of greater accumulations in low spots or depressions. Following bondbreaker application and immediately prior to panel concrete placement, be certain casting slab surfaces evidence the dry soap-like feel, but do not evidence over application of Silcoseal 2000F as indicated by a slippery or grease-like feel to the touch. Over application may result in retardation of panel skin or dusting, surface irregularities and/or discoloration as well as unreacted bondbreaker residue on panel and floor surfaces.
- Typically, casting slab surfaces which are more porous resulting from such conditions as improper curing, the addition of pozzolans such as fly ash or which received a more open or less tight finish will require more Silcoseal 2000F than slab surfaces which are less porous.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE THE VARIOUS CONDITIONS ON EACH PROJECT AND TO DETERMINE THE CORRECT APPLICATION RATE OF THE SILCOSEAL 2000F BONDBREAKER COATS. IF UNSURE, CONTACT NOX-CRETE FOR SPECIFIC RECOMMENDATIONS.
- CAUTION: THE PRIMARY REASON FOR PANELS STICKING TO CASTING SLABS IS AN INADEQUATE FILM OF BONDBREAKER ON THE CASTING SLAB SURFACE AT THE TIME OF PANEL CONCRETE PLACEMENT. IT IS YOUR RESPONSIBILITY TO VERIFY A CONTINUOUS FILM OF BONDBREAKER CAN BE FELT ON THE CASTING SLAB SURFACE AS PREVIOUSLY DESCRIBED IMMEDIATELY PRIOR TO PLACEMENT OF PANEL CONCRETE.
- Rain occurring prior to product drying will necessitate reapplication of bondbreaker.
- Do not apply to reinforcing steel or lifting inserts.
- Avoid spray drifts, runs or puddles. Promptly wipe up any material excesses which can lead to subsequent adhesive failure of floor coatings and wall paints.

Continued on reverse side

- When using Silcoseal 2000F for sand bed casting, contact CMCCS for specific written recommendations.
- To avoid wood sugar related concrete retardation and dusting at panel edges and feature strip locations, use CMCCS Pre-form to seal all wood that may contact panel concrete, including edge forms, blockout forms and chamfer and feature strips prior to bondbreaker application.

Casting Slabs Cured With Silcoseal 2000F

- Apply successive coats of Silcoseal 2000F until the casting slab surface appears uniformly dark in appearance for at least 2-3 hours following the last coat. If the treated slab appears light in color either generally or in spots within 2-3 hours of last application, excessive slab porosity is indicated. Reapply Silcoseal 2000F to all light-colored areas. If areas of light color or dry appearance persist, thoroughly wet affected areas with water to fill concrete surface pores, squeegee off excess water and then immediately re-apply Silcoseal 2000F.
- The typical effective coverage rate for all combined bondbreaker coats applied to new casting slabs previously cured with Silcoseal 2000F is 200-400 sf/gal (5-10 sm/l). The application rate can vary widely depending upon the specific conditions. Do not over or under apply.

Casting Slabs Previously Cured And Sealed With Cure & Seal 1200 E Or Duro-Nox

- Casting slabs previously cured or sealed with CURE & SEAL 1200 E or DURO-NOX will require a lesser amount of SILCOSEAL 2000F to perform the bondbreaker function. Over application of SILCOSEAL 2000F can result in panel surface dusting, surface irregularities and/or discoloration.
- Application of Silcoseal 2000F to CURE & SEAL 1200 E or DURO-NOX sealed casting slab surfaces interferes with the normal chemical reaction of Silcoseal 2000F and the casting slab surface. As a result, under these circumstances, Silcoseal 2000F may be subject to removal by rainfall or contact with water. Verify the presence of an adequate bondbreaker film as indicated by a dry, soap-like feel uniformly apparent to the touch over the entire treated area with no indication of greater accumulations in low spots or depressions as described above before placing panel concrete.
- The typical effective coverage rate for all combined bondbreaker coats of Silcoseal 2000F applied to casting slabs sealed with CURE & SEAL 1200 E or DURO-NOX is 300-500 sf/gal (10-12.5 sm/l). The application rate can vary widely depending upon the specific conditions. Do not over or under apply.

Existing Casting Slabs

- Verify concrete surface is free of substances that could adversely affect product performance.
- If a curing or sealing compound other than CURE & SEAL 1200 E or DURO-NOX was used, it will be necessary to remove the coating from the casting slab surface prior to applying bondbreaker. Use NOXCRETE'S BIO-CLEAN or BIO-STRIP to chemically remove all coating residue.
- Apply successive coats of Silcoseal 2000F until the casting slab surface appears uniformly dark in appearance for at least 2-3 hours following the last coat. If the treated slab appears light in color either generally or in spots within 2-3 hours of last application, excessive slab porosity is indicated. Reapply Silcoseal 2000F to all light-colored areas. If areas of light color or dry appearance persist, thoroughly wet affected areas with water to fill concrete surface pores, squeegee off excess water and then immediately re-apply Silcoseal 2000F.
- The typical effective coverage rate for all combined bondbreaker coats applied to an existing, clean and unsealed casting slab is 200-400 sf/gal (5-10 sm/l). The application rate can vary widely depending upon the specific conditions. Do not over or under apply.

Continued on reverse side

Cleaning

- To remove residual bondbreaker from casting slab floor surfaces resulting from over application of the bondbreaker, pretreat the areas to be cleaned with NOX-CRETE'S BIO-CLEAN. Scrub the treated surfaces using a floor scrubbing machine equipped with nylogrit scrub brushes. Squeegee off the excess BIO-CLEAN residue and rinse thoroughly with water and squeegee dry.
- To clean panel surfaces, pretreat the areas to be cleaned with a detergent solution consisting of 0.5 lbs (225 gms) of trisodium phosphate in 1 gal (3.8 l) of water. Rinse the detergent solution off with water using a minimum 4,000 psi power washer.
- Determine adequacy of the surface preparation of panels and casting slabs with appropriate site test to verify acceptable adhesion, appearance and performance of paints, coatings, adhesives, sealers, sealants, grouts, etc. prior to application. See ACI 551 for specific recommendations.

Technial Data

Color .....White Liquid
Clarity.....Opaque Emulsion
Bulk Density.....8.0 lbs./gal. (960 g/l)
VOC .....<600 g/l
Viscosity.....28 Sec. @ 100°F (37°C)
Vapor Pressure.....<16 mmHg @ 20°C
Flash Point.....95°F (350 C) PMCC

Packaging

Product is packaged in lined steel 5 gal (19 l) pails, 55 gal (208 l) drums and 275 gal (1,047 l) bulk tanks. Drums are equipped with a 2-inch center port opening for use with CMCCS DRUM AGITATOR.

Shelf Life

Shelf life is nine months. Use before the "USE BY" date stated on product packaging.

Handling/Storage

Product is a combustible liquid. Store in a dry location within a temperature range between 400 F (40 C) and 1000F (380 C). Following each liquid removal, tightly reseal all container bungs or caps to include mixer port cap that seals opening for drum agitator handle promptly to prevent loss of necessary volatile solvents. CAUTION: FAILURE TO PROPERLY STORE PRODUCT CAN RENDER IT UNSUITABLE FOR USE.

Availability and Technical Services

In addition to corporate offices in Omaha, Nebraska, CMCCS Products Group maintains regional offices and distribution centers in principal markets throughout the world. For source or technical information, phone (800) 669-2738 or (402) 341-1976.