



DENSIFIER & XL

Concentrate & Ready-to-Use Formula

*Subject to change. Contact Solomon Colors/Brickform for most up-to-date information

001: Product Description

Lythic Densifier and **Lythic XL Densifier** with reactive colloidal silica are densifiers/hardeners for concrete, used to improve the performance and appearance of concrete floors. They increase surface hardness, compressive strength, abrasion-resistance, and liquid penetration-resistance.

Lythic Densifier and **Lythic XL Densifier** are 99.5% pure silica of nano-particles, suspended in an ultra-low surface tension liquid using a proprietary, "green" manufacturing process. It reacts with calcium hydroxide (*aka free lime*) in the concrete matrix to create additional calcium silicate hydrates (*C-S-H*), the active binder in cement paste which becomes a permanent part of the concrete.

Lythic Densifier and **Lythic XL Densifier** reduce dusting, efflorescence, and ASR. It is a zero-VOC, non-toxic, safe-to-handle liquid that does not require scrubbing in, removal, or hazardous residue disposal and does not leave discoloring mineral salt deposits on concrete.

Lythic Densifier works extremely well on all concrete types. Particles are approximately 5 nanometers (*5nm*) ensuring superior penetration.

Lythic XL Densifier is specifically designed to work with more porous concrete with a larger average 50 nanometer (*50nm*) particle size.

002: Features & Advantages

- Simple spray application
- Prevents dusting
- Hardens surface
- Increases impact resistance
- Improves abrasion resistance, long term durability
- Reduces capillary size to make the surface less porous
- Increasing resistance to liquid penetration
- Increases resistance to staining
- Bonds to silica in concrete
- Extends service life of older slabs
- Works with low-lime decorative cementitious overlays
- Does not yellow or whiten concrete
- Safe to handle – lower pH than silicates
- Fast reacting – one hour or less

003: Sustainability

Lythic Densifiers increase the durability and performance of a concrete surface, extending its service life and minimizing materials and energy consumption for its replacement.

- South Coast Air Quality Management District compliant
- Zero-VOC formula
- Ships as concentrate to lower environmental impacts
- Reduced shipping and storage costs
- No hazardous waste created
- Qualifies for LEED credits

004: Materials Packaging

Lythic Densifiers Concentrate 4:1 (*Red Lythic Logo*)

- 1 gallon / 3.78 liter jug
- 5 gallon / 19 liter pail
- 55 gallon / 208 liter drum
- 270 gallon / 1021 liter tote (*IBC*)



**Note the concentrated product will yield 5 times the volume when mixed 4:1 with clean potable water.*

Lythic Densifiers Ready-to-Use (*Green Lythic Logo*)

- 1 gallon / 3.78 liter jug
- 5 gallon / 19 liter pail
- 55 gallon / 208 liter drum
- 270 gallon / 1021 liter tote (*IBC*)



005: Coverage Rates

Lythic Densifiers will yield different coverage rates depending on the porosity of the floor. Test on a small sample area to determine appropriate application rate and technique before applying to entire project area.

**(See Section 009: Project Testing)*

Use these coverage rates as a starting point to determine necessary application rate. Coverage rates are based on a mixed ready-to-use (*RTU*) gallon of **Lythic Densifier & XL Densifier**

Concrete Condition	Coverage Rate (US, per gallon)	Coverage Rate (Metric, per liter)
High Porosity Concrete	250 - 400 ft ²	6.1 - 9.8 m ²
Medium Density Concrete	300 - 500 ft ²	7.4 - 12.3 m ²
Hard Concrete	400 - 600 ft ²	9.8 - 14.7 m ²
High Density Concrete	500 - 700 ft ²	12.3 - 17.2 m ²



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006: Storage & Shelf Life

Lythic Densifiers should be kept in the original container when possible with the lid fastened tightly. Lythic Densifier & XL has an optimized shelf life of 24 months from the date of manufacture.

- Keep in a dry place
- Temp range of 40-100°F or 4-38°C
- Do not allow to freeze

MIXING & APPLICATION

007: Mixing & Dilution

Lythic Densifier & XL Densifier are available in two concentrations. Consult the package label to ensure correct mixing and usage.



Lythic Densifiers (Red Lythic Logo) is shipped and packaged in concentrate formula. Before use, it must be diluted with clean potable water, 4:1.

- 1) Before opening, agitate **Lythic Densifier** concentrate.
- 2) Use clean potable water to mix with **Lythic Densifier**.
- 3) Mix in a container or directly into sprayer.
- 4) Ratio, one part **Lythic Densifier** to four parts water.
- 5) Mix, agitate or stir well.



Lythic Densifiers (Green Lythic Logo) is shipped and packaged in Ready-to-Use formula requiring no mixing.

- 1) Before opening, agitate **Lythic Densifiers** ready-to-use.
- 2) Pour **Lythic Densifiers** directly into sprayer.

008: Equipment

Apply **Lythic Densifiers** using a low-pressure pump sprayer. Use either a fan tip or a cone tip for even spraying. Automatic low pressure sprayers can also be used for larger projects.

009: Project Testing

To assure that desired performance and appearance specifications are met, test a sample area of each slab to be treated, using the proposed treatment methods and techniques, coverage rates, and equipment, with the work

performed by the same installation personnel who will do the project.

Test section should be large enough to properly represent the overall slab. Check whether coverage rate is appropriate, that concrete accepts the product, and that product is reacting with slab. **NOTE:** Grinding and polishing operations may significantly alter slip-resistance of surface. To determine that safe levels of wet and dry slip-resistance are achieved, it is necessary to apply the complete treatment, including the protection layer. **Lythic Protector** and **Lythic SPD Protector** increase slip resistance.

010: Pre-Application

Advanced planning is critical to all successful concrete work, notations worth considering when using **Lythic Products**.

- Any adjacent areas, surfaces, or objects not intended to be treated with **Lythic Densifiers** should be protected from overspray or drift with plastic sheeting or other proven protective material.

- Surface must be clean and structurally sound, and clear of membrane-forming curing compounds, oils, dust and other surface contaminants that will prevent **Lythic Products** from having full contact with the concrete. Do not use acidic or aggressive detergents when cleaning before or after application of **Lythic Products**. Use **Lythic Cleaner** or other pH neutral cleanser.

- Measure area (*square feet: ft² / square meter: m²*) that will require **Lythic Product**.

- Mix an appropriate quantity of **Lythic Products** for job-size, per instructions in Section 007: Mixing & Dilution, using estimated coverage rates in Section 005: Coverage Rates or the coverage chart on page 1.

- Check that sprayers and tips are in working order.

- Designate trained operator(s) to apply **Lythic Products** throughout project to ensure consistent application.



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Lythic Densifiers - TIS

P3

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011: Application Guidelines

Lythic Densifiers can be applied to new or existing concrete. Application may vary depending on the type of project and other jobsite specifics. The information provided is best practice guidelines for **Lythic Densifiers**. Every project will present variables that may require adjustment of application procedures during the job. These guidelines are based on terminology used within the concrete and flooring industry sector.

**(See coverage chart on page 1)*

011-a: General Application Instructions

- 1) Agitate **Lythic Densifiers** RTU mixture before pouring into sprayer.
- 2) Pour **Lythic Densifiers** RTU mixture into sprayer. Keep sprayer pressure at optimized level, allowing even distribution when applying to concrete surface.
- 3) Spray apply **Lythic Densifiers**, holding spray tip 12-24 inches above surface and moving in a circular motion to achieve even distribution. Spray enough to form an even sheen and ensure complete saturation of surface. Avoid puddling.
- 4) Keep the surface wet for 10 to 15 minutes, applying additional **Lythic Densifiers** only as needed. Areas of higher porosity will require more **Lythic Densifier** or use **XL Densifier**.
- 5) Allow surface to dry completely before further operations commence.

011-b: Diamond Grinding / Polishing

As part of concrete polishing, **Lythic Densifier** is typically applied after the initial diamond cutting stages or surface stock removal is completed and prior to the higher levels of diamond polishing. In most instances, it is used after 80-grit to 400-grit steps.

See coverage chart for application stages on page 1.

011-c: New (Green) Concrete

Lythic Densifier can be applied the same day, once the surface has hardened enough not to damage the concrete surface/finish. Alternatively, within 1 to 5 days after the concrete placement, when the peak of hydration and out-gassing has slowed enough to allow sufficient penetration.

Application at this stage dramatically increases abrasion resistance, will help to prevent dusting and ASR, and will improve overall surface performance. Slab must be clean and free of all contaminants such as curing compounds, bond breakers, release oils, dust and debris, etc. Apply per instructions in Section 011-a: General Application Instructions steps 1-5. No flooding, neutralizing, or rinsing is necessary.

011-d: Application Guidelines Next Steps

Polishing or other treatments can begin when **Lythic Densifiers** have dried. Concrete intended to be left exposed or polished should be protected with **Lythic Protector** or **Lythic SPD Protector**, or other appropriate finish protection, as the final step of treatment. Polished concrete should be cleaned with **Lythic Cleaner** or other pH neutral cleaners. Avoid acidic cleaners and detergents containing hydroxides, critics, or sulfates as these may etch or dull the surface.

012: Limitations & Important Notes

- **Lythic Densifiers** densify and harden concrete surfaces, but should not be confused with concrete sealers; they will not seal or prevent staining.
- Floors treated with **Lythic Densifiers** should not be cleaned with acidic or abrasive cleaning fluids. Medium to long-term exposure to aggressive cleaning products will cause damage. **Lythic Cleaner** or other pH-neutral cleansers should be used for continuous maintenance of concrete that has been treated with **Lythic Densifiers**.
- During application of **Lythic Densifiers** and until dry, treated surface will be slippery. Use extreme care when walking on wet **Lythic Densifiers**.
- Jobsite samples are strongly recommended prior to application of all **Solomon/Brickform** and **Lythic products**.

013: Industry Compliance

- VOC Compliant
- National Floor Safety Institute
- LEED-Green Building Rating System
- GreenSpec listed
- OSHA & ADA non-slip requirements



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014: Lythic System Products:

- Lythic DAY1(Troweling aid)
- Lythic Densifier(Smaller particle densifier)
- Lythic Densifier XL(Larger particle densifier)
- Lythic Protector(Color enhancer & protector)
- Lythic SPD Protector ... (Color enhancer & protection)
- Lythic Cleaner(Colloidal silica cleaning agent)
- Pro-Dye(Penetrating colorant concentrate)
- Stealth Seal(Penetrating sealer)
- Solomon Colors(Integral color for concrete)
- Brickform(Sealers and processes for concrete)

HEALTH & SAFETY

015: Precautions

WARNING: FOR PROFESSIONAL USE ONLY. Before using product, read product SAFETY DATA SHEET (SDS) and instructions on packaging. ALKALINE CONCENTRATE: Contact can damage eyes, skin, and other body tissues. HANDLE WITH CARE. Eye and skin irritant. Digestive tract irritant; DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN. Spray mist is respiratory tract irritant. Use only with adequate ventilation. Do not breathe vapors or spray mist. Avoid contact with eyes, skin, clothing. Observe appropriate safety and jobsite controls. Wear appropriate protection including eye protection and chemical-resistant gloves. Ensure fresh air-flow during application and until dry. If you experience headaches, dizziness, eye watering, or if air monitoring shows vapor/mist levels above applicable limits, wear a properly fitted P100/organic vapor respirator (NIOSH TC-84A approved), used according to manufacturer's directions, during application and drying. SLIP/FALL DANGER: During application of Lythic Densifiers and until dry, treated surface will be slippery. Use extreme care when walking on wet Lythic Densifiers.

016: First Aid

Ingestion: Not expected to be toxic. Never give an unconscious person anything to ingest. If swallowed, immediately give two glasses of water, seek medical attention if ill effects develop.

Inhalation: May cause irritation. Remove to fresh air and provide oxygen. If not breathing, give artificial respiration. Seek medical attention if irritation persists.

Eye Contact: Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: May cause irritation. Wash affected area with soap and water. Remove contaminated clothing and shoes. Seek medical attention if irritation persists.

017: Physical Properties

AppearanceClear or tinted liquid
VOC Content.....0 g/l (VOC- free)
Active Ingredients.....100% of total solids
Material pHapx 9.5-10
Freeze point 32°F - 0°C

018: Warranty

Lythic Products is intended for use by licensed contractors and installers, experienced and trained in the use of these types of products. It is warranted to be of uniform quality, within manufacturing tolerances. The manufacturer has no control over the use of this product, therefore, no warranty, expressed or implied, is or can be made either as to the effects or results of such use. In any case, the manufacturer's obligations shall be limited to refunding the purchase price or replacing **Lythic Products** proven defective. The end user shall be responsible for determining product's suitability and assumes all risks and liability.

Additional Information & Technical Support:

This document covers the basic guidelines and instructions for the use of **Lythic Products**. Further instruction or technical information related to specifying **Lythic Products** or systems are available upon request. Contact Solomon Colors or your local distributor.