

PRODUCT DATA SHEET

1. PRODUCT NAME

LITHISEAL ZLi 71
CONCRETE SEALER, HARDENER,
DENSIFIER AND SALT BARRIER

2. MANUFACTURER

ZEROVOC TECHNOLOGY, LLC
3773 Cherry Creek North
Denver, Colorado 80209

3. PRODUCT DESCRIPTION

LITHISEAL ZLi 71 is a clear, solvent-free, odorless, VOC compliant, water-based environmentally safe-to-use salt barrier and dust proofer that seals, hardens and densifies concrete and masonry.

LITHISEAL ZLi 71 was developed to treat a wide variety of mineral substrates including architectural concrete, concrete block, splitface block, pavers, stucco, porous and dense brick, clay tile and exposed aggregate concrete. It has been found to be particularly effective in commercial applications where high water repellency performance is required.

4. UNIQUE CHARACTERISTICS

LITHISEAL ZLi 71 incorporates the sealing, hardening and alkali-silica reaction (ASR) preventing properties of lithium silicate with the chloride protection of silane/siloxane, all in a single, permanent application.

LITHISEAL ZLi 71 forms an effective chloride ion screen providing unmatched protection against water and water-carried salts that cause erosion, deterioration and corrosion.

LITHISEAL ZLi 71 can be used as an interior or exterior treatment for both horizontal and vertical concrete and masonry. It is perfect for parking garages, bridge decks, brick structures, historic restoration and integrally colored concrete.

LITHISEAL ZLi 71 proprietary silane/siloxane technology provides excellent water repellency to reduce cracking, spalling, freeze/thaw damage, chemical degradation, biological growth, efflorescence, and dirt pickup, thereby lengthening substrate life and reducing maintenance costs.

LITHISEAL ZLi 71 helps prevent Alkali-Silica Reaction (ASR), a serious problem that occurs when the alkali in the large and fine aggregates reacts with the silica in the cement and with water to form an expansive gel, which can break concrete apart. Other chemical hardeners use potassium or sodium compounds, which can raise alkalinity and contribute to ASR. **LITHISEAL ZLi 71** uses lithium technology that does not contribute to

the alkalinity and can even prevent surface ASR.

LITHISEAL ZLi 71 meets industry standards (NCHRP 244) for protecting concrete against chloride intrusion. (89% + effectiveness)

LITHISEAL ZLi 71 is vapor permeable to resist cracking, peeling and blistering. This lengthens substrate life and allows for greater structure strength over time.

LITHISEAL ZLi 71 protects gray and colored concrete from weathering and efflorescence thereby reducing maintenance, cleaning costs and repairs.

5. PACKAGING

5 Gal plastic Pail 45.75 lbs
55 Gal Drum 496 lbs

6. USE AND TECHNICAL SPECIFICATIONS

TYPICAL COVERAGE RATES

Broom Finished Concrete
200-300 sq ft per gallon
Steel Troweled Concrete
350-500 sq ft per gallon
**Coverage rates will vary with concrete mix, porosity, finish, and environment*

Typical Coverage Estimates; between 200-300 sq ft per gallon

Porous concrete
Smooth concrete, precast
Exposed aggregate
Stucco
Exterior brick
Rough stone, sandstone
Bridge decks and other surfaces subject to abrasion
Any material with a Portland cement binder
DRYING TIME
1-2 hours

PHYSICAL PROPERTIES

Form: Milky white, dries clear
Solvents: None
Total Solids: 20%
Active Ingredients:
100% of total solids
Weight/Gal: 9.28 lbs/gal
Specific Gravity: 1.14
Volatile Organic Content,
lb/gal 2.55
pH: 9: >212F (>100.0C)
Slip Resistance: Does not change surface friction coefficient
Shelf Life: 1 year in factory sealed container
**Must employ all recognized slip and fall prevention techniques*

7. LIMITATIONS

Do not apply to glazed or acrylic coated surfaces

Do not use on asphalt surfaces

LITHISEAL ZLi 71 is designed to react with alkaline siliceous substrates. The active ingredients in the sealer treatment will not chemically react with acidic substrates.

LITHISEAL ZLi 71 is not intended to serve as a waterproofing material

Do not use below grade

8. APPLICATION PROCEDURES & INSTRUCTIONS

SURFACE PREPARATION

Surfaces to receive **LITHISEAL ZLi 71** should be clean and free of all foreign materials such as bond breakers, curing agents, form release oils, grease, dust, construction laitance, other coatings etc.

Cleaning methods which are compatible with the application of **LITHISEAL ZLi 71** include:

- Mechanical-abrasive blasting (sand, baking soda, bead blast, vacuum)
- Chemical-acid etching, stripping, solvent degreasing, caustic soda scrubbing, alkaline soap scrubbing, high pressure washing, high pressure washing with sand. If a d-limonene (citrus) based cleaner, acid or solvent degreaser is used, the surface must be neutralized using a high pH detergent (i.e. TSP, Dawn Dish Detergent, Tide etc.) before applying **LITHISEAL ZLi 71**. Remove all standing water.
- Heat-propane and acetylene torching

Before using any surface preparation method a test patch should be performed with the customer's approval to be sure that their needs are met.

New concrete should be allowed to cure for at least 28 days before applying **LITHISEAL ZLi 71**. In addition, any repair work should be performed at least 3 days before application.

APPLICATION

A test patch should always be performed prior to general application with the customer's approval to ensure that desired water repellency and appearance is achieved. Let surface dry before inspection and approval of desired application.

Horizontal Application: Use a low pressure or HVLP sprayer or roller to apply **LITHISEAL ZLi 71** so as to saturate the surface. Flooding

is the preferred way, applying two “wet on wet” coats to ensure complete coverage. Retreat within three to five minutes after initial application. Proper quantity on horizontal surfaces is indicated when the solution stands for a few seconds before completely penetrating. Distribute any pools of material with a broom.

Vertical Application: Apply from the bottom up using a low pressure, 10-25 psi sprayer with a fan-type nozzle. Flood surface until excess solution runs down 6” to 8” below spray pattern nozzle or roll or sponge surfaces sufficiently to create a uniform wet-look.

Because the porosity of substrates and application conditions can vary greatly, Zerovoc Technology is not responsible for any shortfalls or excess consumption based on the estimated coverage rates noted above. For precise rates of consumption, a pre-application field test should be performed.

Proper application is the responsibility of the user. Field visits by Zerovoc Technology personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

TEST DATA

<u>TEST METHOD</u>	<u>PURPOSE</u>	<u>CONCENTRATION %</u>	<u>PERFORMANCE</u>
Construction Technology Laboratories NCHRP 244 Report Series II	Reduction in Water Absorption	20.0	1 day: 75% 5 days: 78% 21 days: 85% Avg. 79%
	Reduction in Chloride Ion Content		1 day: 70% 5 days: 81% 21 days: 89% Avg. 80%
	Water Vapor Transmission		100%
Series IV Southern Exposure	Accelerated Weathering Test: Resistance to UV light Reduction in Soluble Chloride	20.0	No Discoloration 91% Reduction in Soluble Chloride
ASTM E 514-86	Water Penetration and Leakage Through Masonry	10.0 20.0	90% Reduction in Leakage Rate 89% Reduction in Leakage Rate
AASHTO T-259 & T-260	Resistance of Concrete to Chloride Ion Penetration	20.0	75% Reduction in Total Chloride
EPA 24/ASTM D3960/	Volatile Organic Content	100.0	2.55 lbs./gallon
Fed Spec TT-C-55B	Wind Driven Rain		200 Hours with no Effect
ASTM E 96-95	Water Vapor Transmission (perms)		Up: 3.1 (Untreated: 2.9) Down: 2.5 (Untreated: 3.0)
Federal Specification SS-W-110C	Water Repellency (1.0% Maximum Specified)	12.5 15.0 20.00	0.2% Water Absorption 0.2% Water Absorption 0.3% Water Absorption

FINAL RESULTS

Typical drying time is 1-2 hours for both horizontal and vertical surfaces.

Horizontal surfaces are ready for foot traffic and use when dry. Vehicle traffic should be kept to a minimum for at least 24 hours.

A light lithium residue may form on the surface after the surface is dry. This is excess solution that was not absorbed and can be removed with a stiff broom. Caution: During application, surfaces wet with solution may be slippery.

LITHISEAL ZLi 71 may etch glass and painted surfaces. Immediately wash off overspray with soap and water.

Water repellency and hardness continues to develop for up to 20 days following the application; however, significant results should be visible within 24 hours.

CLEAN UP

Thoroughly rinse application equipment with clean water.

DISPOSAL

LITHISEAL ZLi 71 is environmentally friendly and requires no special or hazardous disposal methods. Always be familiar with local, state and federal disposal regulations.

HEALTH AND SAFETY INFORMATION

LITHISEAL ZLi 71 is a water-based Lithium Silicate/Silane/Siloxane solution that uses proprietary compounds. The material is mildly alkaline and may cause eye and skin irritation.

KEEP OUT OF THE REACH OF CHILDREN. Do not take internally. Avoid prolonged contact with skin. If swallowed, do not induce vomiting- call a physician. Avoid contact with eyes. Protective eyewear and clothing is recommended. If splashed in eyes, wash immediately with clean water and call a physician. Additional precautions, safety information and first aid treatments are contained in the Material Safety Data Sheet.