



**CONCRETE SURFACE TECHNOLOGY**

CHANGING  
THE FACE OF  
**CONCRETE**  
FOREVER





**DAY1 FINISHING AID** is a colloidal silica-based topical additive that makes concrete flatwork finishing easier and faster. It produces a better result and reduces the risk of a prematurely setting slab. Applied during floating and troweling, DAY1 increases cream, making for easier, better finishing and extended workable time under adverse conditions. DAY1 does not alter the water to cement ratio. It provides moisture-retention performance similar to a liquid membrane forming curing compound. DAY1, however, becomes a permanent part of the slab so there is no membrane or residue to remove.

**DAY1** also has a number of densification and performance enhancing qualities. Through densification, compressive and surface abrasion resistance are improved. Additionally, DAY1 improves consolidation, reduces water vapour transmission, and extends curing, further improving strength and durability. DAY1 has been shown to successfully mitigate slab curling by reducing evaporation at the surface, thereby diminishing the shrinkage differential and the curling it causes. DAY1 also minimizes the potential for checking, crazing, and other drying-related surface issues.

**DAY1** reduces the potential for efflorescence on both coloured and non-coloured concrete mixes. It also gives the concrete surface hydrophobic-like properties for better resistance to liquid penetration and staining. This makes it a must-have for any coloured or decorative concrete project.

DAY1 offers a multitude of advanced features and benefits for freshly-placed concrete, and provides long-term high performance properties to treated concrete surfaces:

#### FINISHING AID

- Designed to improve workability under hot, dry, & windy conditions & will save a slab
- Reduces operator fatigue and trowel wear
- Aids application of shake-on hardeners in low bleedwater environments
- Helps finish high performance concretes
- Concentrate and ready-to-use formulas

#### HARDENING & DENSIFICATION

- Increases abrasion & impact resistance
- Increases surface compressive strength
- Creates a denser, less-permeable surface for resistance to liquid penetration

#### CONCRETE CURING

- Retains moisture in the slab during curing
- Reduces water vapor transmission (MVER)
- Mitigates volume of water vapors

#### EFFLORESCENCE & SURFACE DEFECT

- Reduces calcium hydroxide  $Ca(OH)_2$  migration
- Reduces efflorescence on both colored & non-colored concrete
- Minimizes checking, crazing & scaling
- Decreases potential for alkali silica reaction (ASR)
- Ideal for all colored and decorative concrete applications

#### CURLING REDUCTION

- Reduces potential for slab curling



# DAY 1™

FINISHING AID

CONCENTRATE & READY-TO-USE FORMULAS



## TEST DATA: ASTM C672 SALT SURFACE SCALING

**Test Duration:** 50 Cycles Total

**Standard:** Concrete without the use of DAY1

**12:** Concrete finished with DAY1 used at a rate of 12 m<sup>2</sup> per litre

**6:** Concrete finished with DAY1 used at a rate of 6 m<sup>2</sup> per litre

Cycle/ID	25 Cycles	50 Cycles
<b>Mass Loss (l)</b>		
Standard	1.05	2.29
12m <sup>2</sup> /l	0.54	0.30
6m <sup>2</sup> /l	0.77	0.57
<b>Percentage Improvement Over Standard (%)</b>		
12m <sup>2</sup> /l	49%	87%
6m <sup>2</sup> /l	27%	75%

*\*Magnesium Chloride was used as the salt solution to ensure the most aggressive reaction possible*

## TEST DATA: ASTM C666 FREEZE-THAW RESISTANCE (PROCEDURE A)

**Test Duration:** 300 Cycles Total

**Standard:** Concrete without the use of DAY1

**12:** Concrete finished with DAY1 used at a rate of 12m<sup>2</sup> per litre

**6:** Concrete finished with DAY1 used at a rate of 6m<sup>2</sup> per litre

Cycle/ID	300 Cycles
<b>Observations</b>	
Standard	Showed Scaling
12m <sup>2</sup> /litre	Minor Dusting
6m <sup>2</sup> /litre	No Visible Alteration
<b>Percentage Improvement Over Standard (%) Mass Loss (l)</b>	
12m <sup>2</sup> /litre	89%
6m <sup>2</sup> /litre	95%



## TEST DATA: ASTM C779 ABRASION RESISTANCE OF CONCRETE (PROCEDURE B)

**Test Duration:** 30 & 60 minutes

**Standard:** Concrete without the use of DAY1

**12:** Concrete finished with DAY1 used at a rate of 12 m<sup>2</sup> per litre

**6:** Concrete finished with DAY1 used at a rate of 6 m<sup>2</sup> per litre

Cycle/ID	30 minutes	60 minutes
<b>Percentage Improvement Over Standard (%)</b>		
12 m <sup>2</sup> per litre	37.2%	23.6%
6 m <sup>2</sup> per litre	49.8%	38.2%

## TEST DATA: AASHTO T 259/260 RESISTANCE OF CONCRETE TO CHLORIDE ION PENETRATION

**Test Duration:** 1 Day Soak / 5 Day Soak

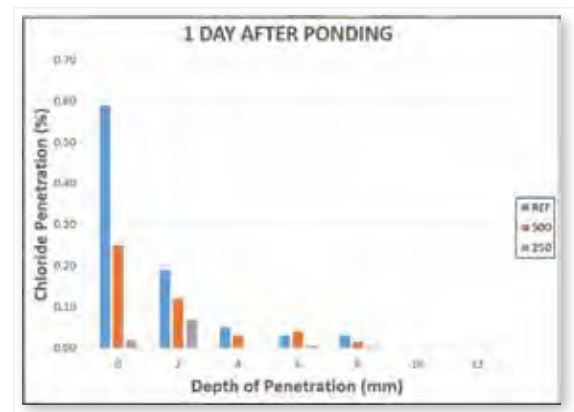
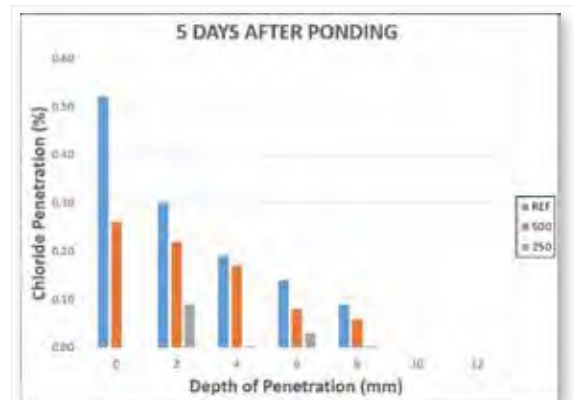
**Standard:** Concrete without the use of DAY1

**12:** Concrete finished with DAY1 used at a rate of 12m<sup>2</sup> per litre

**6:** Concrete finished with DAY1 used at a rate of 6 m<sup>2</sup> per litre

Depth (mm)	1 Day Soak		5 Day Soak	
	12m <sup>2</sup> /litre	6m <sup>2</sup> /litre	12m <sup>2</sup> /litre	6m <sup>2</sup> /litre
<b>Percentage Improvement Over Standard</b>				
0	58%	97%	50%	100%
2	37%	63%	27%	70%
4	40%	100%	11%	98%
6	33%	80%	43%	79%
8	30%	90%	33%	96%

\*Magnesium Chloride was used as the salt solution to ensure the most aggressive reaction possible





## TEST DATA: HADLEY RD121 (ASR) PRODUCTION OF ASR GEL CORONAS & POP-OUTS

**Test Duration:** 72 Hours

**Standard:** Concrete without the use of DAY1. Significant amount of Corona development with some pop-outs is due to the increased amount of free alkalis to break down the reactive aggregate.

**12:** Concrete finished with DAY1 used at a rate of 12 m<sup>2</sup> per litre. The colloidal silica in the DAY1 reduces the tendency for polymerization and expansion of the ASR gel. This is possible through chemical binding / stabilization of the alkalis that would propagate ASR.

**6:** Concrete finished with DAY1 used at a rate of 6m<sup>2</sup> per litre. The phenomenon is enhanced with a higher dosage of the DAY1 that almost eliminates the near surface ASR.



ID	Coronas	Pop-outs
Standard	51	3
12m <sup>2</sup> /l	3	1
6m <sup>2</sup> /l	1	0

## TECHNICAL INFORMATION

### 001: Product Description

**DAY1** is a colloidal silica finishing aid that lubricates the surface for faster, easier finishing. **DAY1** extends workable time under adverse conditions such as high wind, heat, or low humidity. **DAY1** eliminates the need to add water to the surface which can be detrimental to the surface performance of the slab. It can also be used to help finish shake-on hardeners in low bleedwater environments. Concrete with high cement, air, silica fume, or silica flower are easier to finish when **DAY1** is applied.

Colloidal silica is at the heart of **DAY1** technology. The amorphous silica reacts during the hydration of concrete to produce more cementitious material, translating into higher density and improved surface performance.

**DAY1**, applied during finishing, provides a number long-term of benefits to cured concrete. **DAY1** reduces surface evaporation, mitigating and reducing ASR, slab curling, and differential shrinkage. **DAY1** also has densification properties to prevent dusting and reduces efflorescence in colored and standard concrete.

### 002: Features & Advantages

- Lubricates for more efficient surface finishing
- Reduces operator fatigue and trowel wear
- Extends workability under hot, dry, and windy conditions
- Aids application of shake-on hardeners
- Reduces efflorescence with colored & standard concrete
- Minimizes checking, crazing & scaling
- Hardens and densifies
- Increases impact and abrasion resistance
- Creates a less permeable surface
- Increases surface compressive strength by 20%-30%
- Reduces water vapor transmission \*(MVER)
- Reduces Calcium Hydroxide Ca(OH)<sub>2</sub> migration
- Decreases potential for alkali silica reaction - \*(ASR)
- Reduces potential for slab curling
- Concentrate and Ready-to-Use Formulas
- Will not increase the W/C ration
- Does not affect or change color

### 003: Sustainability

**DAY1** increases the durability and performance of a concrete surface, extending its service life and minimizes material and energy consumption for its replacement.

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

### 004: Materials Packaging

#### DAY1 Concentrate 4:1

(Gold DAY1 Logo)

- 5 litre Jerry Can
- 20 litre pail
- 208 litre drum



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

#### DAY1 Ready-to-Use

(Green DAY1 Logo)

- 5 litre Jerry Can
- 20 litre pail
- 208 litre drum
- 1000 litre tote (IBC)



### 005: Coverage Rates

**DAY1** will yield different results based on the jobsite conditions and usage demands. Before floating or troweling, test **DAY1** on a sample section 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. Coverages are based on a mixed ready-to-use (RTU) gallon of **DAY1**. **DAY1** can be applied at multiple stages during finishing.

Application Needs	Coverage Rate (Metric, per liter)
Finishing Aid	12 - 24 m <sup>2</sup>
Performance Concrete	6 - 12 m <sup>2</sup>

#### 006: Storage & Shelf Life

DAY1 should be kept in the original container when possible with the lid fastened tightly. DAY1 has an optimized shelf life of 24 months from the date of manufacture.

- Keep in a dry place.
- Temp range of 4-38°C.
- Do not allow to freeze.

#### MIXING & APPLICATION

#### 007: Mixing & Dilution

DAY1 is available in two concentrations. Consult the package label to ensure correct mixing and usage.



(Gold DAY1 Logo) is shipped and packaged in concentrate formula. Before use, it must be diluted with clean potable water, 4:1.

- 1) Before opening, agitate DAY1 concentrate.
- 2) Use clean potable water to mix with DAY1.
- 3) Mix in container or directly into sprayer.
- 4) Ratio: one part DAY1 to four parts water.
- 5) Mix, agitate or stir well.
- 6) Pour DAY1 directly into sprayer.



(Green DAY1 Logo) is shipped and packaged in Ready-to-Use formula requiring no mixing.

- 1) Before opening, agitate DAY1 Ready-to-Use.
- 2) Pour DAY1 RTU directly into sprayer.

#### 008: Equipment

Apply DAY1 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. DAY1 can also be applied through the water tanks of a ride-on trowel.

#### 009: Project Testing

Every batch of concrete is unique and its behavior varies depending on surrounding conditions. Testing is only relevant on the actual batch being finished. At the

beginning of floating, and again at the beginning of troweling, test DAY1 on a small sample section to verify needed application rate and technique.

#### 010: Pre-Application

Advanced planning is critical to all successful concrete work. Notations worth considering when using DAY1:

- Mix enough DAY1 concentrate into RTU for the project.
- Check spraying equipment is in working order.
- Protect adjacent areas that do not require DAY1.

#### 011: Application Guidelines

DAY1 is designed to be used during the floating and troweling stages of concrete placement. Multiple applications can be applied as needed throughout the finishing process. There are two uses for DAY1. The first is as a finishing aid to help concrete placement crews deliver a smooth, flat finish. The second is to increase the overall performance of the concrete surface.

#### 011-a: Finishing Aid

DAY1 should be applied when needed to help finish concrete. Applied at an average rate of 12 to 24 m<sup>2</sup>/litre per application and worked in to the concrete by floating or finishing either by hand or mechanical trowels.

Multiple applications can be used throughout the finishing process. Do not exceed 23m<sup>2</sup>/litre per application. Typically, 1, 2 or 3 applications worked into the concrete will provide high levels of finishing.

#### 011-b: Performance Concrete

The term performance concrete refers to the chemical enhancements of the surface. Although the finishing applications will add to some of the overall performance, it is important to apply DAY1 early to maximize the chemical interaction.

Applying DAY1 at the first bull float or mechanical trowel stage at a rate of 23m<sup>2</sup>/litre ensures the colloidal silica is worked deeply into the cement matrix. Then use DAY1 when, or as needed to help finish the slab. See section 011a: Finishing Aid.



### 011-c: General Application

1) Dilute **DAY1** according to instructions in Section 007: Mixing & Dilution before use.

2) Pour **DAY1** RTU mixture into sprayer. Keep the sprayer at optimized levels, allowing even distribution when applying to concrete surface. Or pour into the water tanks on the ride-on trowel.

3) Spray apply to concrete surface during floating or troweling at the predetermined application rates.

4) Float or trowel surface. **DAY1** must be worked into the surface of the concrete immediately after application. Full benefit will not be realized if **DAY1** is allowed to dry prior to being worked into surface. Finisher should determine when additional **DAY1** is needed to improve workability.

It is recommended to apply **DAY1** throughout the entire project for most consistent results. **DAY1** can be applied both before and after the application of dry-shake hardeners/color hardeners, and may be especially useful when there is a limited amount of bleed-water to wet-out the powdered hardeners.

### 012: Limitations & Important Notes

- **DAY1** reduces porosity of the concrete surface, but should not be confused with concrete sealers; it will not seal or prevent staining.

- **DAY1** must be floated or troweled into the concrete immediately after application and not allowed to puddle or pond on the surface.

- **DAY1** reduces moisture vapor emissions and will aid curing. **DAY1** is not a membrane-forming curing compound. **DAY1** is not a replacement for specified curing compounds.

- Do not exceed 18m<sup>2</sup> per litre in a single application. Make sure to thoroughly work in each application of **DAY1** before additional **DAY1** is applied.

- Jobsite samples are strongly recommended prior to application of all **Solomon/Brickform** and **Lythic products**.

### 013: Industry Compliance

- VOC Compliant
- USDA-Authorized
- National Floor Safety Institute
- LEED-Green Building Rating System
- GreenSpec listed
- NSF Certified



### 014: Lythic System Products:

- 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)
- Crestain.....(Penetrating colorant concentrate)
- Natural Sealer .....(Penetrating sealer)
- Colourcrete.....(Integral color for concrete)
- CTI .....(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 a 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 job-site 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 **DAY1** and until dry, treated surface will be slippery. Use extreme care when walking on wet **DAY1**.

**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**

Appearance ..... Milky white tinted liquid  
 VOC content..... <0 (Low- VOC)  
 Active ingredients.....100% of total solids  
 Material pH ..... approx 9-9.5  
 Freeze point ..... 0°C

**018: Warranty**

**Solomon Colors / Lythic** products are 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.





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