

TECHNICAL DATA SHEET

PRO Tek Concrete

Alumina-Modified Reactive Silicate Treatment

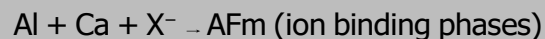
Concrete of today has become more susceptible to long term durability concerns as they relate to new environmental mandates associated with GUL cement. PRO Tek Concrete™ tackles these issues head on via modified cement chemistry that reduces ion transport and calcium vulnerability using alumina-modified reactive silicate treatment for chemical & ion resistance enhancement. This treatment modifies the near-surface cement matrix by converting calcium hydroxide into calcium silicate hydrate (C-S-H), while introducing aluminum to form calcium aluminosilicate hydrate (C-A-S-H) and anion-binding AFm phases.

The treatment converts a portion of the cement matrix from a calcium-dominated system to a silica- and alumina-modified system with reduced susceptibility to acid and ion-driven degradation.

The result is a reduced-permeability, chemically stabilized surface zone with enhanced resistance to chloride, nitrate, and organic acid exposure.

***A clear, zero-VOC,
single-component,
water-based concrete fortifier
that reacts below the surface
of concrete.***

The Mechanism of Action:



Where X^- = chloride, nitrate, carbonate

Resulting microstructural modifications:

- ♦ Reduction of free calcium hydroxide
- ♦ Formation of additional C-S-H and C-A-S-H
- ♦ Development of AFm phases with ion-binding capacity
- ♦ Refinement of capillary pore structure

System Advantages:

- ♦ Chemically modifies concrete (not a surface coating)
- ♦ Enhances durability in aggressive environments
- ♦ Introduces ion-binding capability (AFm phases)
- ♦ Reduces permeability while maintaining vapour transmission
- ♦ Compatible with subsequent coatings and treatments

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Test Data

All testing performed by Haroon Raza, P.Eng., President at Brampton Materials Engineering (Third Party Testing Lab) in 2024. Official report available upon request.

WATERPROOFING PERFORMANCE

The results in Table 1 generally indicate a trend of approximately 86% average moisture absorption reduction over the 60-day period. This result meets the requirements for penetrating sealers 1a for sheltered conditions such as parkades which requires a minimum of 75% reduction in moisture absorption in accordance with Alberta Transportation Specification B388 Section 4.2.2.

Table 1 – Waterproofing Performance (Alberta Transportation Standard BT005, METHOD B (Penetration Sealers))

Test Areas	Mass of Core, SSD, gms		Change (%)	Comments
	Non-Treated	60 days		
1	10	1.5	-85%	
2	6.2	0.8	-87%	

SKID RESISTANCE

The results generally indicate a trend of no relative change over the 60-day period. Both areas showed signs of high skid resistance for the non-treated and treated samples following testing.

Table 6 – SKID RESISTANCE (ASTM E303-22)

Test Areas	Pendulum Test Value (PTV))		Change (%)	Comments
	Non-treated	60 days		
1	85.5	83.8	- 2.1%	
2	80	73	-10%	

COMPRESSIVE STRENGTH

The results generally indicate a trend of approximately 8% average compressive strength increase over the 60-day period. No reduction factors were used for the core samples based on the diameter to length ratios of the cores extracted. The slab at test area 1 is slightly thicker by 25mm (1 inch) compared to test area 2. There is clearly a difference in strength generally between test area 1 and 2 which may be a result of neighboring areas of the slab which show clear signs of concrete deterioration and evidence of corroded steel.

Table 5 – Compressive Strength Test Comparison (CSA A23.2-14C/ASTM C39/C39M-21)

Test Areas	Compressive Strength (MPa)		Change (%)	Comments
	Non-treated	60 days		
1	36.2	37.1	2.4%	Core sizes for these areas were 100mm diameter by 200mm long.
2	50.8	59.3	14.3%	Core sizes for these areas were 95mm diameter by 170mm long.

RAPID CHLORIDE PERMEABILITY

The results generally indicate a trend of approximately 50% average permeability potential reduction over the 60-day period. The untreated samples had a moderate penetrability potential which changed to a very low and low potential following application of the product.

Table 2 – Rapid Chloride Permeability Testing Comparison (ASTM C1202-12)

Test Areas	Rapid Chloride Permeability Testing (Coulomb)		Change (%)	Comments
	Non-treated	60 days		
1	3094	967	-68.7%	The penetrability potential changed from moderate to very low.
2	2710	1828	-32.5%	The penetrability potential changed from moderate to low.

PETROGRAPHIC ANALYSIS

The results generally indicate a trend of reduction on average of 55% air void content within the 2.5 to 15mm horizons versus the concrete at 95mm to 110mm deep horizons within the treated samples over the 60-day period. The results show that a portion of the air voids at upper horizon are filled which we can correlate to the product application. The same procedure was followed for the untreated samples at the same horizon depths and the air void content slightly increased.

Table 8 – SUMMARY OF HARDENED AIR-VOID ANALYSIS (ASTM C457 Test Method B)

Test Areas	Air Voids Content (%)		Change (%)	Comments
	95 to 110mm horizon	2.5mm to 15mm horizon		
1a	3.2	3.3	3.1%	
1b	9.9	4.6	-53.5%	
2a	3.2	3.6	12.5%	
2b	4.1	1.8	-56.1%	

PRO Tek Concrete

Application Instructions

Safety

Always wear proper protective equipment (PPE). Safety glasses, dust mask, and nitrile gloves are recommended. See SDS for details.

Surface Preparation

1. Do not apply over paints, sealers, or other film-forming materials that will prevent the product from reaching the intended substrate. If these coatings exist, they must be removed prior to application.
2. Although CSP is not relevant to the application of PRO Tek Concrete, the surface should readily darken and absorb water when dampened.
3. Surface should be clean, sound, free from grease, silicone, or any material that will prevent penetration of PRO Tek Concrete. For general cleaning prior to application, use EverTek's [Greasy Clean](#) or in severe case ATTACK CES. In the case of existing coating the use of shotblasting or grinding may be necessary.
4. Filled cracks must be "crack chased" clean, cracks must be vacuumed and clean prior to application.
5. PRO Tek Concrete can be applied on surfaces that rest in horizontal, vertical, or overhead positions.
6. Always perform a suitability sample and mock up on in situ concrete to determine application rate prior to job commencement or placing orders.

CAUTION: Cover or tape metal, glass, or any other unintended item that is not to be treated with PRO Tek Concrete. Take preventative measures to ensure wind direction and wind drift does NOT allow overspray to rest, land, or reside on unintended surfaces. If PRO Tek Concrete does meet metal, glass, or painted surface wipe up immediately using a water-dampened rag.

Equipment

- Apply product using a low-pressure type of pump sprayer. Examples include but are not limited to a manual backpack sprayer, battery powered backpack sprayer, or a pump and cart sprayer. Use the cone tip provided with spray equipment. Job size will determine the proper equipment for application rate.
- **DO NOT ATOMIZE PRODUCT DURING APPLICATION.** Use of HVLP or airless sprayer is not suitable nor approved for application.

Product and Mixing (A+B mixture)

PRO Tek Concrete (Part A) will come supplied with **PRO Tek ACTIVATE (Part B)**, this is a catalyst that is to be added to PRO Tek Concrete prior to application. **Only add catalyst (Part B) when ready to perform application. Only add catalyst to amount of product that is to be applied within 2-4 hours.**

Execution on Green/New Concrete: Broomed or power troweled.

Add 1 ounce of PRO Tek ACTIVATE for every gallon of PRO Tek Concrete. If using the premeasured pump system, 5 pumps will equal 5 ounces for a 5-gallon bucket of ready to use (RTU) PRO Tek Concrete. For acidic environments us 2 ounces per gallon.

1. After final texture has been applied to concrete, and the concrete can support the weight of the applicator and equipment without marring the surface begin applying catalyzed PRO Tek Concrete. Anticipated coverage when used as a cure and fortifier will be up to 400 sq. ft.
2. Apply product before or after saw-cutting concrete. Try to maintain application of PRO Tek Concrete within 12 hours of achieving final texture in concrete per the Cement Association's recommendations for curing concrete and conforming to ACI 308.
 - When saw-cutting before application of PRO Tek Concrete, concrete dust will occur around the saw cuts. Typically, this is blown clean only. Concrete dust will clean away with broom once product dries. PRO Tek Concrete is not film forming there are no solids to adhere concrete dust to the surface.
3. Mark the site with stakes, walls with tape, or use other means to calculate coverage rates during application.
4. Apply product using a cone tip spray nozzle. Apply in a circular pattern, overlapping the previous circle by one-third.

5. When applied correctly, a glossy sheen should be visible on the surface of the concrete. Dull areas indicate a missed area or an area needing light reapplication.
6. Maintain a sheen or glossy surface for 20 minutes. If dull areas appear inside of 20 minutes reapply product to those areas.
 - NOTE: when used as a cure it is often observed that the sheen will remain for several hours. This is normal and will dry as concrete would normally.

Execution on In Situ Concrete - Dense or tightly troweled concrete.

Product and Mixing (A+B mixture)

PRO Tek Concrete (Part A) will come supplied with **PRO Tek ACTIVATE (Part B)**, this is a catalyst that is to be added to PRO Tek Concrete prior to application. **Only add catalyst (Part B) when ready to perform application. Only add catalyst to amount of product that is to be applied within 2-4 hours.**

Add 2 ounces of PRO Tek ACTIVATE for every gallon of PRO Tek Concrete. If using the premeasured pump system, 10 pumps will equal 10 ounces for a 5-gallon bucket of ready to use (RTU) PRO Tek Concrete.

1. Mark the site with stakes, walls with tape, or use other means to calculate coverage rates prior to application.
2. Porous substrates will see a reduction of coverages rates, whereas dense surfaces will see an extension of coverage rates. Rates can vary up to 250 sq. ft. per gallon. Always perform a suitability sample prior to starting any project to determine product usage.
3. PRO Tek Concrete penetrates deepest on a Surface Saturated Damp (**SSD**) surface using water, do not apply PRO Tek Concrete if there is standing water.
4. If site conditions are hot, sunny, windy or a combination of heat, sun or wind, dampening the surface of the concrete with water prior to application will increase sorptivity.
5. Apply product using a cone tip spray nozzle. Apply in a circular pattern, overlapping the previous circle by one-third.
6. When applied correctly, a glossy sheen will be visible on the surface of the concrete. The sheen should remain visible for 1-2 minutes before absorbing into the concrete.
7. Allow PRO Tek Concrete to soak in for 7-10 minutes. Do not allow surface of concrete to dry during this time. The concrete should still look damp.
8. Apply a second application. The concrete should look glossy similar to the first application but require 30-50% less material to achieve.
9. As product dries, mop or broom out any puddles that have formed. Allowing puddles to form will result in an excessive reaction on the surface of the concrete or substrate.

Execution on Vertical Surfaces: Concrete Block (CMU)

Add 1 ounce of PRO Tek ACTIVATE for every gallon of PRO Tek Concrete. If using the premeasured pump system, 5 pumps will equal 5 ounces for a 5-gallon bucket of ready to use (RTU) PRO Tek Concrete.

1. Mark the site with stakes or tape, or use other means to calculate coverage rates prior to application.
2. Porous substrates will see a reduction of coverages rates, whereas dense surfaces will see an extension of coverage rates. Rates can vary from 50-200 sq. ft. per gallon. Always perform a suitability sample prior to starting any project to determine product usage.
3. PRO Tek Concrete penetrates deepest on a Surface Saturated Damp (SSD) surface using water, do not apply PRO Tek Concrete if there is standing water.
4. If site conditions are hot, sunny, windy or a combination of heat, sun or wind, dampening the surface of the concrete with water prior to application will increase sorptivity and work time.

PRO Tek Concrete

- Working from the bottom up apply catalyzed PRO Tek Concrete while maintaining a 6-inch rundown.
- Apply PRO Tek Concrete in a circular motion, overlapping the previous stroke by 1/3rd. Maintain 6-inch rundown.
- Take care to ensure the surface is glossy for 1 - 2 minutes
- On CMU, porosity may not allow a sheen to form, In the case where no sheen forms apply a second, or possible third application several minutes apart until the sheen maintains itself for 1-2 minutes
- In most vertical CMU applications this will require 2, possibly 3 coats to properly "seat" PRO Tek Concrete.
- Coverage rates will vary depending on substrate porosity. This is normal.

Execution on Vertical Surfaces: PRECAST CONCRETE

- Add 1 ounce of PRO Tek ACTIVATE for every gallon of PRO Tek Concrete. If using the premeasured pump system, 5 pumps will equal 5 ounces for a 5-gallon bucket of ready to use (RTU) PRO Tek Concrete.
- Mark the site with stakes or tape, or use other means to calculate coverage rates prior to application.
- Porous substrates will see a reduction of coverages rates, whereas dense surfaces will see an extension of coverage rates. Rates can vary from and usually produce 320-420 sq. ft. per gallon. Always perform a suitability sample prior to starting any project to determine product usage.
- PRO Tek Concrete penetrates deepest on a Surface Saturated Damp (SSD) surface using water, do not apply PRO Tek Concrete if there is standing water. If site conditions are hot, sunny, windy or a combination of heat, sun or wind, dampening the surface of the concrete with water prior to application will increase sorptivity and work time.
- Working from the bottom up apply catalyzed PRO Tek Concrete while maintaining a 4-6-inch rundown.
- Apply PRO Tek Concrete in a circular motion, overlapping the previous stroke by 1/3rd. Maintain a 4-6-inch rundown.
- Take care to ensure the surface is glossy for 1 - 2 minutes
- Apply product where a sheen from application is maintained for 1-2 minutes.
- In most vertical precast applications one application is usually sufficient if a sheen can be maintained for 1-2 minutes. In instance where this is not possible, apply a light second application, wet on wet, as the concrete is absorbing material to properly "seat" PRO Tek Concrete.
- Coverage rates will vary depending on substrate porosity. This is normal.

Return to Service for In-situ Concrete:

- Allow PRO Tek Concrete to dry 2-4 hours before opening surface back up to foot traffic.
- Allow 12 hours for vehicular traffic.
- Subsequent fluid and cementitious coatings such as Urethanes, Epoxies, MMA, acrylics and others can be applied after 48 hours of application of PRO Tek Concrete.

Execution with Abnormal Substrate Conditions

Consult with EverTek Technical Services in situations that are abnormal. Examples include but are not limited to: active water leaks, concentrated acidic environments, highly abrasive environments, freezing during application, odor suppression from fire or flood, mold, excessive purging of contaminants, and highly contaminated substrates.

Clean Up

Clean tools with clean water immediately after use.

Disposal

Dispose of product in accordance with local governing codes.

Product Data

Estimated coverage rates

Existing concrete: 200 sq. ft. per gallon.
Fresh concrete: 300-350 sq. ft. per gallon.
CMU - 50 - 150 sq. ft. per gallon.
Precast 320-420 sq. ft. per gallon.

Mixing ratio

Dual Component, refer to TDS.

Shelf life

Two (2) years from date of manufacture on unopened containers. Protect from freezing and excessive heat.

Packaging

1-gallon jug / 5-gallon pail / 55-gallon drum / 275-gallon tote

Typical Physical Properties (at 78° F / 24° C)

Vehicle type	Water-based solution
Colour	Clear
Flash point	None
Flammability	None
Odour	None
pH	11
Weight per gallon	9.2 lbs. / 4.17kg
VOC	0.0
Drying time	2-4 hours

***A clear, zero-VOC, single-component,
water-based concrete fortifier that reacts
below the surface of concrete.***