GHOSTSHIELD®

8501

PRODUCT DATA

Technical Data Sheet

Sections

07 07 19 16
Water Repellents

ISO-TEK™ 8501

ISO TEK™ 8501 GEL IS A SOLVENT-LESS, WATER & CHLORIDE REPELLENT AND THE LATEST BREAKTHROUGH IN CLEAR PENETRATING SEALERS FOR IMPREGNATING NORMAL & HIGH DENSITY ARCHITECTURAL CONCRETE.

Description

A new supercharged nano-technology driven, breathable, clear, water, and chloride repellent gel that provides exceptional penetrating power and water repellency.

Iso-Tek® 8501 is a deep penetrating water repellent that protects against water-soluble deleterious materials, and freeze/thaw cycles. With it's long established hydrophobic agents, and through the latest advances in nanotechnology, its intelligent nano particles and gel consistency provides even deeper penetration for paramount protection.

Once applied the change of the surface tension creates a surface environment that is hydrophobic forming an effective shield that aides in a dramatic reduction of chloride and water absorption.

The proprietary nanotechnology offers deeper penetration when compared to traditional silane isomers resulting in an even longer service life that protects the concrete, forming an invisible barrier that leaves the concretes appearance completely natural.

Actives

80% wt%

Appearance/color

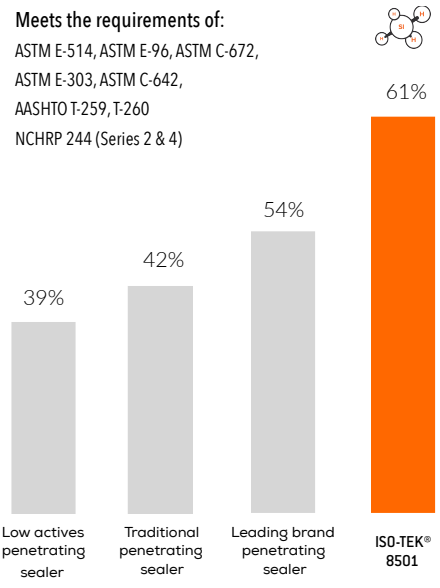
White Thixotropic Gel

Coverage

185-200 ft²/gallon

DEPTH OF PENETRATION
WATER REPELLENCY AND WEATHERING

Meets the requirements of:
ASTM E-514, ASTM E-96, ASTM C-672,
ASTM E-303, ASTM C-642,
AASHTO T-259, T-260
NCHRP 244 (Series 2 & 4)



Percentage improvement vs. control

GHOSTSHIELD®

8501

PRODUCT DATA

Technical Data Sheet

Sections

07 07 19 16
Water Repellents

ISO-TEK® 8501

TECHNOLOGY // ADVANTAGES

- **Composition** - 80% actives nano derived isooctyltriethoxysilane isomers
- **Exceptional waterproofing -** Penetrates deep within the concrete chemically reacting within the pores and capillaries creating a long-lasting hydrophobic surface that sheets water
- **Dramatic reduction in chloride and water absorption**
- **100% breathable -** Non-film forming. Allows moisture within the concrete to escape without adverse effects to the sealer.
- **Thixotropic** - can be applied without loss of material
- **Protects against chloride ion penetration -** Forms an effective chloride screen dramatically reducing chloride ion ingress preventing chloride damage
- **Resist oxidization -** Inhibits rust and corrosion of rebar in reinforced concrete; comprehensive protection against sulfates and acidic gases
- **Stops moisture intrusion** - Stops wind-driven rain, prevents freeze-thaw damage, spalling, pitting and cracking.
- **Resist organic growth -** Mold, mildew and lichen
- **Department of Transportation -** Meets or exceeds DOT specifications
- **Provides excellent adhesion** for coatings as a bonding primer

- **Improves durability** - Prevents capillary uptake of water and the aggressive substances dissolved in it
- **Natural flat finish -** Does not change surface appearance, UV stable, will not breakdown with light exposure
- **Can be applied to high density, structurally reinforced concrete -** Ideal for vertical surfaces
- **Unrivaled in depth of penetration**
- **Solvent less -** aqueous and environmentally compatible
- **Unrivaled industry leading 20 year warranty -** Guaranteed to never delaminate, flake, discolor, chip, degrade from UV light exposure or diffuse

TYPICAL PROPERTIES

Appearance - White thixotropic gel, dries clear

Packaging - 5 gallon (18.9 L) pails and 55 gallon (208 L) drums

VOC'S - 80g/L

Flash Point - 147° F (64° C)

GHOSTSHIELD®

8501

PRODUCT DATA

Sections

07 07 19 16
Water Repellents

Technical Data Sheet

ISO-TEK® 8501

Iso-Tek ® 8501 Treatment Enhances Concrete's Durability

Organosilicon compounds are long-established hydrophobic agents. They feature excellent water repellency – without impairing the water-vapor permeability, and long durability, which stems from their high resistance to external influences such as UV radiation, thermal stress, aggressive substances and microbes. This is due to extremely stable covalent bonds between the silanes and the silicate matrix of the pores and capillary walls in the concrete.

The 8501 for concrete impregnation possesses multiple properties: It penetrates well into dense concrete, it is capable of bridging a crack up to 0.3 mm, it resists high alkalinity (found especially in fresh concrete) and it allows for targeted consumption.

The water repellent treatment protects exposed exterior walls from moisture associated damage. Iso-Tek® 8501 is colorless, ideal for architectural concrete, non film forming, and will prevent capillary uptake of water and the aggressive substances dissolved in it.

Defense Against Water and Harmful Substances

Creating a water-repellent zone at the surface of the concrete considerably reduces the uptake of water and aggressive substances. The concrete remains drier, and is consequently less prone to the kinds of damage mentioned. However, this is only true of capillary uptake by building materials-when an exterior wall is exposed to the elements.

Iso-Tek® 8501 Can Rescue Concrete Structures

The most effective way of protecting concrete is to prevent water uptake. The past decades have shown that highly alkylated silanes (iso-octyl) are the ideal product class for this. Their current dominance in masonry protection stems from their outstanding water-repellency and durability. Silanes outperform rival product classes in their resistance to physical chemical and microbiological attack. Provided that the right product is chosen, impregnation with the Iso-Tek®8501 will preserve a structure for a long time.

Iso-Tek® 8501 Molecule

Tried and trusted organosilicon compounds have been recognized as the ideal active agents for hydrophobic impregnation of absorbent mineral materials for over 40 years now. The compounds work by binding strongly to the building material to form extremely stable Si-O-Si structures, similar to silicone resin. We can see the close similarity if we compare the molecular structure of a fully reacted silane with that of natural quartz , the fully reacted silane is simply a quartz modified with organic groups.

Iso-Tek® 8501 gel is an aqueous, solvent-less, silane-based water repellent and is the latest breakthrough in clear penetrating sealers. It is guaranteed to be the deepest penetrating sealer on the market and the only specialty product for impregnating both normal and high density reinforced concrete.

Iso-Tek® 8501 is a unique impregnating agent because it is thixotropic. It has an outstanding ability to impregnate high-density concrete and reinforced concrete. Unlike conventional liquid products, Iso-Tek® 8501 can be applied in just one coat of the desired thickness (at the very most, two coats). The silane active ingredient penetrates the substrate within 30 minutes to several hours, the exact time depending on the porosity and thus quality of the concrete. On reaction with the substrate, it releases ethanol and is converted into a polymeric silicone resin. A creamy gel type layer forms initially, but this then disappears completely. As the active ingredient is the same as in conventional liquid impregnating agents, impregnation with Iso-Tek® 8501 does not clog the pores or capillaries, nor does it affect its ability to "breathe".

Iso-Tek® 8501 is designed to penetrate deeply into concrete so as to afford optimum protection against absorption of water and pollutants as well as freeze / thaw cycles. This effect should not be confused with the "beading" effect imparted by impregnating agents that is often referred to as water repellency. Beading is only a surface effect, and it plays a secondary role in protecting the substrate. Concrete treated with Iso-Tek® 8501 has initially only a moderate beading effect, but this increases after the surface has been wetted.

GHOSTSHIELD®

8501

PRODUCT DATA

Technical Data Sheet

ISO-TEK® 8501

Sections

07 07 19 16
Water Repellents

TESTING DATA

TEST METHOD	TYPE	COVERAGE RATE FT/2/GAL	RESULTS
Alberta Infrastructure Specification Type 1b	Vapor Transmission	185	70%
	Waterproofing After Surface Abrasion (Initial Waterproofing Performance)		90.2%
	Alkali Resistance (Final Waterproofing Performance)		87.2
NCHRP 244 Report Series II	Reduction in Water Absorption	370	1 day:82% 5 days:81% 21 days:79% Average 81%
	Reduction in Water Absorption	185	1 day:83% 5 days:81% 21 days:77% Average 80%
	Reduction in Chloride Ion Content	370	1 day:79% 5 days:83% 21 days:86% Average 83%
	Reduction in Chloride Ion Content	185	1 day:81% 5 days:87% 21 days:83% Average 84%
NCHRP 244 Report Series IV Southern Exposure	Accelerated Weathering Test: Resistance to UV Light Reduction to Soluble Chloride	370	93% Reduction in soluble chloride No discoloration
	Resistance to UV Light Reduction in Soluble Chloride	185	95% Reduction in soluble chloride No discoloration
ASTM E514-86	Water Penetration and Leakage Through Masonry	370	90% Reduction in leakage rate
		185	89% Reduction in leakage rate

Test results are averages obtained in a controlled environment., material and curing conditions of 75°F and 50% relative humidity. Reasonable variations should be expected .

GHOSTSHIELD®

8501

PRODUCT DATA

Technical Data Sheet

ISO-TEK® 8501

Sections

07 07 19 16
Water Repellents

TESTING DATA

TEST METHOD	TYPE	COVERAGE RATE FT/2/GAL	RESULTS
AASHTO T-259 & T-260	Resistance of Concentrate to Chloride Ion Penetration	370	73%, 60%, 10% Reduction in chloride penetration at each depth
	Resistance of Concentrate to Chloride Ion Penetration	185	74%, 52%,0% Reduction in chloride penetration at each depth
ASTM E 96-5	Water Vapor Transmission (perms)	370	Up: 3 (untreated 3.5) Down: 2.5 (Untreated 3.3)
	Water Vapor Transmission (perms)	185	Up: 2.6 (untreated 3.5) Down: 2.4 (Untreated 3.3)
ASTM E303	Surface Friction/Skid Resistance	370	BPN=84 (dry), 70 (wet)
		185	BPN = 92 (dry), 83 (wet) BPN, Control = 83 (dry), 87 (wet)
ASTM F 609	Surface Friction/Skid Resistance	370	f = 0.8 (rubber/wet & dry) f = 0.7-0.9 (leather/ dry resp. wet)
ASTM C 672-92	Scaling Resistance to deicing Chemicals	370	Control: 40 Cycles 100 g/m2: 70 Cycles 200 g/m2: 80 Cycles
OHD L-34	Depth of Penetration (14,000 PSI concrete)	185	>.5" (1 coat 6-8 mils)
		370	>1" (2 coats 12-14 mils)

Test results are averages obtained in a controlled environment., material and curing conditions of 75°F and 50% relative humidity. Reasonable variations should be expected . Revised 12/17

GHOSTSHIELD®

8501

PRODUCT DATA

Sections

07 07 19 16
Water Repellents

Technical Data Sheet

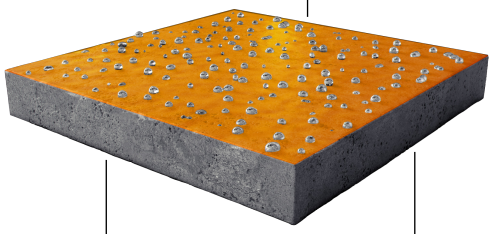
ISO-TEK® 8501

Untreated Concrete, Showing
Chloride Intrusion

APPLICATIONS // SUBSTRATES

- Interior // exterior concrete
- Vertical substrates
- High density, structurally reinforced architectural concrete
- Reinforced concrete structures
- Bridge decks and piers
- Columns
- Spandrels
- Balconies
- Roof tiles
- Walls
- Concrete
- Brick and Masonry

Water- Soluble Deleterious Materials &
Chlorides Repelled By Ghostshield



Concrete

ISO-TEK® **8501**
Dries Clear

Ghostshield's dries completely clear protecting
the concrete from surface damage

GHOSTSHIELD®

8501

PRODUCT DATA

Sections

07 07 19 16
Water Repellents

Technical Data Sheet

ISO-TEK® 8501

Surface Prep

1. Prior to application always test a small inconspicuous area of the substrate to ensure desired performance results, aesthetics and coverage rates. Allow the test area to fully dry and cure (5-7 days) before evaluating and determining suitability.
2. New "green" concrete must be properly cured. Concrete should obtain 80% of design strength, typically achieved within 14-28 days.
3. The concrete substrate must be structurally sound and clean of oil, grease, dirt, wax, curing compounds, efflorescence, paints, previous sealers, adhesives and other contaminants that might interfere with the penetration of the sealer. Power wash, acid etch or mechanically scarify as necessary to achieve the desired surface condition. Allow for proper dry time before application. Do not apply if standing water is visible.
4. Surface temperatures must be at least 45°F during application; surface temperatures should not exceed 86°F. Ambient air temperatures must be at least 41°F during application; ambient air temperatures should not exceed 95°F. Do not apply if the substrate temperature is less than 6°F above the dew point. The surface zone moisture content of the concrete (from the surface to a depth of 20 mm) should not exceed 4%. Do not apply when temperatures are expected to fall below 32°F within 8 hours or when rain is expected within 12 hours following application. Keep material from freezing. If freezing conditions exist before application, let the substrate thaw before application. Do not apply during inclement weather or when inclement weather is expected within 12 hours.
5. Crack, patching and expansion joint sealants can be applied before or after application; always test for compatibility and adhesion.

Application

1. Iso-Tek® 8501 is best applied to the concrete by the airless technique, undiluted and in the desired thickness. Brushes, lambskin rollers may be used if conditions are not conducive for spraying.
2. Up to 6-8 mils (185 sq. ft per gal) can be applied in one operation to vertical surfaces and roofs, without loss off material. The exact amount depends on the absorbency of the substrate. At higher application rates, the impregnating film might liquefy because of the concrete's alkalinity and it might start to run off. A second coat of Iso-Tek® 8501 may be applied at any time, but is usually unnecessary.
3. Only impregnate concrete that has a uniformly dry surface with no damp patches. Should it suddenly start to rain, stop treatment and cover the impregnated areas.

Dry Time

Typical drying time is 4-6 hours at 70°F and 50% relative humidity. Cooler temperatures or higher relative humidity can extend the drying time. Treated surfaces will be ready for pedestrian and vehicle traffic within 24 hours. Water repellency will continue to develop within 7 days of application.

Storage

Iso-Tek® 8501 has a shelf life of at least 12 months when stored between 45 °F and 85 °F in the tightly closed original container. The 'best use before end' date of each batch appears on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

GHOSTSHIELD®

8501

PRODUCT DATA

Sections

07 07 19 16
Water Repellents

Technical Data Sheet

ISO-TEK® 8501

Clean Up

Clean equipment, tools and surfaces with a silicone de-polymerizer. Unused or old material may be disposed of in a waste disposal site in accordance with local, state and federal laws.

Precautions/Safety

Avoid contact with skin, eyes and clothing, do not take internally. Use appropriate safety equipment during application and handling. Please refer to the safety data sheet (SDS) for additional precautionary instructions before use.

Best Performance

- Proper application is the responsibility of the user.
- Will not inhibit water penetration through unsound or cracked surfaces with defective flashing, caulking or structural waterproofing.
- Make sure the most current versions of technical data sheets and safety data sheets are being used.
- Iso-Tek® 8501 should not get into direct contact with bitumen.
- The resistance of insulant against Iso-Tek® 8501 has to be determined dependent on temperature.

Coverage

Up to 6-8 mils (185 sq. ft per gal) can be applied in one operation to without loss off material. Variations in texture and porosity of substrate will affect the coverage and performance of the product.

KreteTek Industries Inc.
66 River Road
Hudson, NH 03051

www.Ghostshield.com

Customer Service and Technical Support
1-855-KreteTek (1-855-573-8383)

For professional use only.
Last revised 12/2017