

SealGuard II

Sealants & Grouts



SealGuard II

SealGuard II stops leaks at a fraction of the cost of traditional methods - quickly, easily and permanently.

The SealGuard II product is extremely fast-acting, stopping fast flowing leaks almost instantly.

The cured polyurethane product is ideal for manholes, culverts, bunds or any concrete structure that needs to be dry - for its own purpose, or prior to a long term repair.

SealGuard II performs well with all but the most severe solvent or chemical attacks, such as highly concentrated nitric or sulphuric acid.

Storage:

- Do not crush containers.
- Avoid contact with moisture.
- Store between 5°C and 25°C.

Shelf life:

Shelf life is 2 years in an unopened container, provided the storage instructions are followed correctly.

Advantages:

- Can be injected into flowing water of up to 3 litres per second (189 litres / 42 gallons per minute) with a reaction time of 1-3 seconds.
- Injection and permanent seal, rather than just a cover up.
- Achieves 900 psi (>60 bar) compressive strength, when cured.
- Simple, small and patented application equipment which allows reuse of cartridge.
- Large 600ml, re-usable tube represents excellent value.
- Secure non-return valve prevents product flowing back into cartridge and reacting with unused product.

A powerful polyurethane product, injected for the prevention of infiltration.

Background:

The SealGuard II system was developed by a US Company called SealGuard Inc who partnered with S1E Ltd to supply the product into the UK, Europe and Australia.

SealGuard's reputation has grown to recognition as a manufacturer of the "Right Product At The Right Time." For many years, a need has existed for water control products, which combine total effectiveness, convenience, ease of use and economy. The product has a history in the USA going back almost 20 years with over 800 successful projects with zero failure.

SealGuard II's primary use is for water control in both above and below ground structures. Industries that currently utilise SealGuard include Wastewater, Telecommunications and Electrical Utilities. The company is aggressively pursuing these markets and has patent approval in the U.S.A.

Benefits

- Will cure through flow rates of up to 3 litres per second + and reconstitute, in flowing water.
- Achieves 900 psi (>60 bar) compressive strength.
- 100% solids, no added fillers and no primers required.
- Non toxic, contains no solvents and no harmful VOCs or CFCs.
- Excellent adhesion to wet substrates.
- Excellent resistance to H₂S attack.
- Fast to apply and cures within seconds, meaning work can continue almost immediately and services are quickly back in use.
- Does not support algae or bacterial growth.
- Patented delivery system ensuring consistent quality and safety.
- Structurally reinforces and waterproofs.
- Very high chemical resistance.
- Minimal waste.

About:

Presented with high flow leakage through virtually any substrate, SealGuard II is injected directly into the flowing water, and reacts in under 3 seconds - infiltration is instantly stopped in its tracks and the void is rapidly filled, without any absorption of water.

The product is ideal for manholes, meter pits, culverts, bunds or any concrete structure that needs to be dry; either for its own purpose or prior to a long term repair.

The cured polyurethane product performs well with all but the most severe solvent or chemical attacks, such as from highly concentrated nitric or sulphuric acid. Furthermore, in comparison to the cement alternative often used SealGuard II stops leaks at a fraction of the cost of traditional methods - quickly, easily, and permanently.

Applications

The SealGuard II system is suitable for many applications, including being excellent in confined spaces. Injection into the finest of fractures, rather than just covering them up, to create a structurally reinforced waterproof sealing system. Suitable for:

- Marine and Coastal applications.
- Bridges, filling cracks and voids.
- Manholes/Chambers, Slurry Walls and Sewers.
- Dams and Reservoirs.
- Tunnels, Mining and Pumping Chambers.
- Aqueducts and Culverts.
- ...and more.

Please note: This products contain Diisocyanate in levels of 0.1% or above, as of 24th August 2023, adequate training is required before industrial or professional use of this product.

SealGuard II Products

Product Code	Description
SGKITST	SealGuard II Starter Kit
SGRE12	SealGuard II Refill Kit - 12 Pack
SGRE6	SealGuard II Refill Kit - 6 Pack
HF5G	Hyperflex Grout - 19L
HF12	Hyperflex Grout - 12 Pack of 300ml Tubes
HF6	Hyperflex Grout - 6 Pack of 300ml Tubes
CGUNPN	SealGuard II Dual Component Pneumatic Gun
CGUND	SealGuard II Dual Component Manual Gun
MXP12	SealGuard II Premier Static Mixers - 12 Pack
MXP6	SealGuard II Premier Static Mixers - 6 Pack





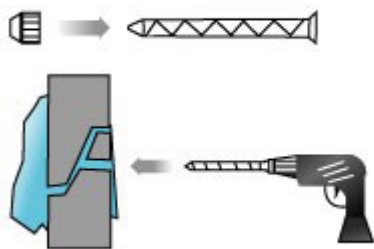
SealGuard II

Installation instructions

SealGuard II is a dual component hydrophobic polyurethane water stop system designed to stop high infiltration in precast or brick lined structures. SealGuard II is highly reactive (1-3 seconds) and can stop leaks in cessation of high (3,000 GPM+) flow. SealGuard II is pumped under pressure with a caulking gun and can be injected into flowing water.

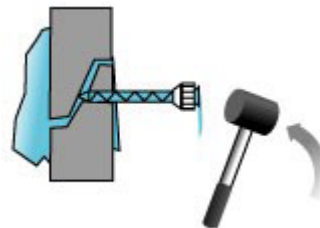
Step 1:

Slide Nut over Mixer thread end first.
Drill 14.7mm diameter hole to intersect leak path.



Step 2:

Tap Mixer with the attached Nut into hole until snug.



Step 3:

Prepare gun by pulling back plungers on Dual Caulk Gun, insert Tubes while holding vertical, remove the End Caps from threaded end of tubes. Quickly align threads on Tubes with the Nut and tighten to secure.



Step 4:

Pump gun vigorously to expel grout to refusal or seal. If grout is washing out either pump slower or stop pumping and watch grout until it reacts halfway down Mixer then quickly give a pump to expel and repeat.



SealGuard II Chemical Resistance

The system performs well with all but the most severe solvent or chemical attacks, such as highly concentrated nitric or sulphuric acid. See chart below:

Chemical Resistance Chart for Cured Polyurethanes	
Chemical	Resist.
Acetone	P
Ammonium Hydroxide Concentrate	G
Ammonium Hydroxide 10%	E
Ammonium sulphate 2%	E
Anylacetate	G
Benzene	E
Benzene Choride	E
Brine Saturated	E
Brine10%	E
Butanol	E
Butylacetate	G
Carbon Tetrachloride	E
Diesel Oil	E
Diisobutylene	E
Diisobutylketone	E
Ethylacetate	F
Ethyl alcohol	G
Ethylene Glycol 100%	G
Formaldehyde	G
Gasoline	E
HCl 25%	E
Hexane	E
Hydrochloric Acid Concentrate	G
Hydrochloric Acid 10%	E
Hydrogen Sphide 100% (wet)	E
Isopropanol	E
JP-4 Fuel	E
JP-5 Fuel	E
Kerosene	E
Linseed Oil	E
Methyl Alcohol	G

Chemical	Resist.
Methylene Chloride	F
Methyl Ethyl Ketone	P
Mineral Spirits	E
Motor Oil	E
NaOil 25%	E
Nitric Acid Concentrated	S
O. Chlorobenzene	G
Orthodichlorobenzene	E
Potassium Chlorate	E
Potassium Hydroxide	E
Sodium Hydroxide Concentrate	E
Sodium Hydroxide 10%	E
Styrene	E
Sulfuric Acid Concentrate	S
Sulfuric Acid 10%	E
Toluene	E
Trichloromonoflouromethane	E
Trichloroethylene	G
Turpentine	E
Varsol	E
Water	E
Zylene	E

Key to Table:

E= Excellent

G= Good

F= Fair

P= Poor

S = Severe solvent or chemical attack

SealGuard II

Frequently Asked Questions

1. What is the Source One Environmental SealGuard II system?

SealGuard II is the most highly reactive two-component hydrophobic polyurethane water stop system in the market.

2. Is the product safe?

Yes, the polyurethane resin is 100% solids with no VOCs (Volatile Organic Compounds) or CFCs (Chlorofluorocarbon).

3. How long does it take to react?

SealGuard II is an extremely fast reacting (1-3 seconds, dependent on temperature), rapid sealing, and high early strength material.

4. Where can the system be used?

The SealGuard II system is suitable for many applications including:

- Manholes/Chambers
- Slurry Walls
- Sewers
- Dams
- Tanking
- Reservoirs
- Tunnels
- Mining
- Settlement Tanks
- Coastal
- Pumping Chambers
- Aquaducts
- Culverts
- Food plants
- Processing Plants
- Breweries
- Pumping Stations
- Underground transport systems
- Chemical/Fuel/Petrol Plants
- Bunds
- Storage Tanks
- Marine applications, on board and off shore

5. What materials can SealGuard II repair?

SealGuard II has excellent bonding facilities to a variety of materials including:

- Concrete
- Wood
- Brick
- PVC
- Steel
- Glass fibre
- Vitrified & Clay Pipes
- Asbestos
- Cast Iron

Frequently Asked Questions

6. Is there any material the polyurethane resin does not bond with?

No. However, in the event of the presence of grease, a complete cleaning process should be carried out to remove the grease before applying SealGuard II.

7. Does the substrate need to be dried out before application commences?

No. The resin can be injected into flowing water and will reconstitute, unlike other materials which can be susceptible to washout.

8. Is there any preparation required before installing SealGuard II?

Size the hole at 16mm (5/8"). Simply drill, insert the patented static mixer and inject (see installation instructions).

9. How is the resin applied?

The SealGuard II is quick and simple to apply; once the drilling is complete and the static mixer is in place, the SealGuard II is injected from either a caulking or pneumatic gun (a compressor is required for a pneumatic gun).

10. What industries are likely to have a use for the system?

SealGuard II is suitable for a whole range of specialist industries including:

- Utilities
- Marine off and on shore
- Chemical
- Mining
- Food Processing
- Power Generation
- Pharmaceutical
- Water and Sewerage
- Rail network (tunnels and underground)

11. Can SealGuard II be used to reinforce badly deteriorated structures?

Yes, the SealGuard II epoxy resin system will significantly reinforce badly deteriorated structures. For example – a brick structure reduced to 20% efficiency can be brought back to 100% of its original strength.

12. Does the SealGuard II polyurethane resin repair have a life expectancy?

Polyurethane has been used around the globe since World War 2. Although testing is unavailable, 1000 years would not be unrealistic.

13. Is the SealGuard II system suitable for potable water?

Although deemed safe, there is no NSF approval (Hyperflex however does have NSF approval).

14. Is the resin, once installed, fire resistant?

There is a flame retardant version available on request. Polyurethane is self extinguishing.

15. How long does the repair take to cure?

Less than 3 seconds.

16. How long does it take to repair a typical leak from start to finish?

A typical leak in a manhole, along with preparation, would take no longer than 15 minutes.

Frequently Asked Questions

17. What temperature will the SealGuard II withstand once cured?

Continuous temperature durability is 200° Centigrade (392° F) and 250° C intermittent (482° F).

18. Are there any storage requirements for the kits?

Yes. The product is moisture sensitive and should be sealed and stored at normal room temperatures.

19. Are there any special disposal requirements?

No. All packaging and contents can be disposed of as domestic waste.

20. What happens if I don't use all the resin in the cartridge?

Simply reseal and store within the shelf life of the product.

21. What is the shelf life of the product?

2 Years.

22. What temperature does the mixed resin reach?

300° F (149° Centigrade) once mixed. The nozzle is made of nylon, which is resistant to high temperatures.

SealGuard II compared with Hyperflex

1. What are the main differences between HyperFlex and SealGuard II?

The most visible difference is the appearance of the packaging. SealGuard II is a dual component material in side by side caulking tubes. The two components mix together in our patented mixer assembly and react with each other very quickly – in one to three seconds. SealGuard II is recommended for situations where there are very rapid or higher pressure inflows into the structure.

HyperFlex, on the other hand, is a single component, pre-catalyzed material. As the description implies, single component means it need not be mixed with anything else prior to use. All it needs is about 2% water to begin the reaction. HyperFlex reacts much more slowly than SealGuard II (30 seconds or so) and is designed to stop slower flowing, weeping cracks and joints. Since it reacts more slowly, HyperFlex has more time to flow through the entire leak path before reacting, giving a very complete watertight, hermetic seal.

2. What makes HyperFlex the only product of its type in the market?

We must first discuss the two main types of polyurethane grout. Hydrophilic grouts incorporate water into the foam they create upon reaction. This water helps to keep the foam inflated. When the water source goes away (such as in an extended dry spell) the grout dries out and shrinks. When the water returns the grout re-expands, but only to 85-95% of its former volume. As you can imagine, repeated dry – wet cycles and the associated shrinking and re-expansion will eventually lead to leaks.

Hydrophobic grouts do not incorporate water into the foam created upon reaction; they in fact expel it from the area. Since there is no water in the reacted material it will not shrink over time, allowing for the formation of a permanent non-shrinking watertight seal. All Hydrophobic materials require something to catalyze them and start the reactions. For dual component urethanes like SealGuard II, the act of mixing the two components together will begin the reaction.

(Continued)

SealGuard II compared with Hyperflex contd.

For all competing single component hydrophobic materials, it is necessary to mix in a separate catalyst prior to use. This catalyst is expensive and very difficult, especially in the field, to mix evenly throughout the grout. This will lead to hot spots, where too much catalyst is present and cold spots which are under catalyzed. Hot and cold spots cause differential reaction, where not all of the grout reacts and cures at the same rate. The result of this is the creation of potential leak paths into the structure. In addition, once catalyst is added, all of the material must be used or disposed of as it cannot be re-used.

HyperFlex is a single component, Hydrophobic grout. What is different is that our proprietary formulation incorporates catalyst into the grout during its manufacture. All it needs to begin its reaction is a small amount of water (about 2%). There is no mixing of catalyst, no shrinking, and unused portions of a pail or tube may be re-used at a later time. In short, HyperFlex offers the best of all worlds, offering a true single component material requiring no mixing while offering a permanent, non-shrinking watertight seal.

3. What kinds of situations would call for the use of HyperFlex, instead of a faster reacting material like SealGuard II?

HyperFlex can be used for crack injections in both walls and floors, leaking cold joints between poured concrete or pre-cast sections, water ingress between the wall and floor junctions in basements, swimming pools, septic tanks and just about any situation of water infiltration into a concrete or brick structure. As a single component material it is more cost effective than dual systems and also requires no special tools other than a standard caulking gun and a drill with a 13mm bit.

Example of SealGuard II Application:



Customer Review:

“Many thanks for recommending the Sealguard II system to us. As you are aware we have had many problems at [the site we’ve been working on] in Bristol with water ingress and infiltration within both pipes and manholes. Our client had used extensive labour and resources trying to plug with other products to no avail, however following the simple instructions we were able to seal up the remaining manholes in a fraction of the time and cost, and needless to say our client was delighted and impressed that we were able to find a solution.”

Tom, Contractor, South West

Example of SealGuard II Application:

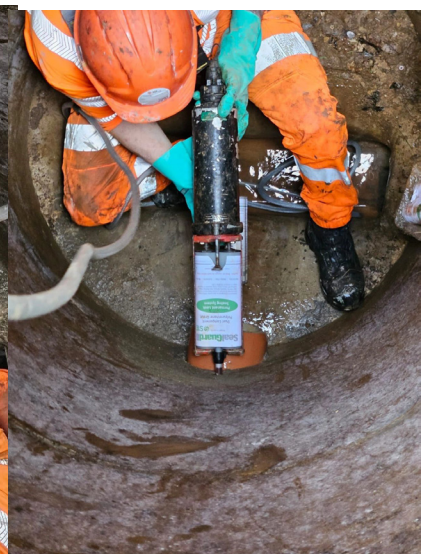
Water ingress into two manholes in Newport.

A treatment plant shared between four properties was not operating correctly due to the large amount of ground water entering the system through failed chamber walls and some failed benching under a lateral connection. With SealGuard II the leaks were sealed and water ingress was stopped within minutes, and water levels in the system were down to almost normal levels within 30 minutes.



Water ingress in defective manhole.

Water infiltration from a defective manhole connection meant ground water was gushing into the manhole chamber causing the downstream pump station to work overtime. Utilising resin grout injection from SealGuard II, the grout was pumped in to fill the void surround the manhole wall. 10 tubes it took to stop the flow to allow the contractor to seal around the connection to completely eliminate the infiltration.



Customer Review:

"We had high volumes of water ingress into a brick manhole/chamber at a site in Gloucester and I contacted S1E to see if they had a solution. Tony Hickman, Technical Sales Manager of S1E, explained how the SealGuard II product worked to permanently repair water ingress into any substrate. I subsequently ordered the SealGuard II Starter Pack, and a further 12 twin-tubes. The manhole/chamber was completely sealed within 2 working days. Had it not been for SealGuard II the excavation would have cost between £8-£10K and taken a full working week to complete. The SealGuard II product worked at both a fraction of the cost and time. I am delighted with the SealGuard II results."

Warren, Groundworks & Construction company, Gloucester

S1E Limited Specialist Suppliers of Trenchless Technology

No-dig Pipeline Repair

S1E Limited is a specialist supplier of trenchless technologies to the drainage repair industry. The company focuses on sourcing quality products for professional use. They are all tried and tested in the field to produce impressive results. S1E distributes high-quality products from market-leading manufacturers for the drainage repair industry. Products include camera inspection systems, cutting and cleaning tools, CIPP lining equipment and consumables, mechanical point repair devices, rat blockers and other site consumables.

S1E Limited is committed to being a quality supplier, with a focus on customer service. S1E is proud to be an active member of the UK Society for Trenchless Technology.

First established in 2007 as Fernco Environmental, the company's mission was to seek out repair products for the infrastructure repair and water management markets. Since 2016, it has re-focused its ranges to the specialist field of trenchless repair, with a growing portfolio in this specialist area.

The company is owned by Cooper Companies Inc, a US-based leader in the production of pipe couplings. The Group also owns companies in Canada, Mexico, Brazil, Germany and France, as well as the UK-based sister company to S1E, Fernco (previously, Flexseal).

It is accredited to ISO 9001: 2015 for its Quality Management System. It is also accredited to ISO 14001: 2015 for its Environmental Management System.



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