

# CS1-STS CanSEALER

## DEEP PENETRATIVE CRYSTALLINE CONCRETE PRESERVATIVE WATERPROOFING SEALER



### Product Description



**CanSEALER(CS1)-STS** is a waterproofing nano-graded sealer, which forms concrete preservative waterproofing membrane using Canadian NCPP technologies. The composite concrete membrane is formed to waterproof and protect the concrete from harmful chemicals to extend the lifetime of concrete. The sealer provides strong resistance against both positive/ back pressure of water. It allows concrete breathing while prohibiting water droplets ingress. The product obtained Water Regulations Approval Scheme (WRAS) Approval and awarded Platinum Label in CIC Green Product Certification.

### Features



- Inhibition of oils, greases and light acids ingress.
- No change to the features of the concrete, i.e. slip resistance and aesthetics properties.
- Harden the concrete by bonding with the particles during penetration.
- Prevention of chlorides and airborne pollutants deteriorations.
- Long-term pore blocking action creates hydrophobic barriers against water penetration.
- Applicable to withstand negative water pressure.
- Non-toxic, non-caustic and non-flammable.

### Uses



#### Concrete or cementitious substrate surfaces

Bridge deck, Bridge and Highway median barrier, Parapet, Columns, Subways, Dams, Tunnels, Roads, Sidewalks, Airport runways, Wells, Ponds, Overflow-drains in swimming pools, Wine cellars, Basements, Foundations, Floor and slabs, Sport facilities, Tanks (sewage treatment plants and drinking water reservoir), Piers, Roofs, Cracks underneath tiles, Retaining walls and Concrete pipes inside beams, etc.

### Properties



Description	Performance
Composition	Proprietary blend of waterglass in aqueous solution
Colour	Clear/ Colourless
Penetration depth	Up to 80mm (Grade 30/20D concrete)
Density	1.113g/ml
Smell	Odourless
Flammability	Non-flammable
Toxicity	None
Environmental risk	None
Number of coating	1-2 coat(s)
Coverage	3-4.5 m <sup>2</sup> /L for vertical concrete surface 3 m <sup>2</sup> /L for lateral concrete surface
Surface Drying Time	1-2 hours
Curing	7 days (Walkable after a few hours)
Shelf Life	36 months in sealed container (5 – 32°C)

### Application



#### Surface preparation

- Wash/Clean the surface to remove oil, grease, debris, stain, paint, surface/damaged membrane, loose coating or material.
- Pre-wet the concrete surface and free from surface water before the coating is applied.

#### Coating method

- Apply CS1-STS evenly onto the proper prepared surface by pneumatic sprayer and the spray nozzle should be held approx. 450mm from the concrete surface and sprayed back and forth to ensure complete coverage.
- For vertical surface, CS1-STS should be applied from bottom-up to ensure even absorption of solution.
- For horizontal surface, CS1-STS should be applied onto the surface until a mirror wet look appears and maintain for at least 5 seconds. Avoid excessive application which may cause ponding.
- Apply the first coat to saturation without surface drips; the second coat should be applied on highly absorption area within 30 minutes after the first coat has dried up.
- An additional coat to enhance surface protection shall be applied on dried up surface upon 8-12 hours curing of the initial coat if required.
- The product is fully crystallized in 7 days; However, the surface is ready to walk after surface tack dry. Further plaster and concrete castings works (if any) can be applied after a few hours and skim coat/paint which requires preferably a completely dry base can be applied after one day.
- For application on underground structures – Repair all panel holes and gravel nests with a mortar/concrete and treat the surface with CS1-STS. The product is not effective on cast resumption which have to be waterproofed with other products (e.g. waterstop). It is possible to cover the treated surfaces with soil after 12 hours.

#### Supplementary Coatings

GreenWalls has developed specific types of nano-coatings, which apply to various phrases/surfaces of the concrete, cementitious and silica-based surfaces/substrates. The following types of Nano coatings are manufactured and formulated for specific applications:



# CanSEALER

## CS1-ST(S)



**CIC GREEN**  
PRODUCT CERTIFICATION  
CICGPC-L-22400(P&C)

CanSEALER was awarded  
Platinum Label in  
CIC Green Product Certification  
in Year 2023



Manufacturer & Sole Agent  
**CanShield Nano-Technologies Inc. (Canada)**  
**CanShield Nano-Technologies Ltd. (HongKong)**  
Web: canashield.com

Authorized Applicators  
**GreenWalls Bioengineering (HK) Ltd.**  
Web: greenwalls.com.hk  
Email: ncpp@greenwalls.com.hk  
**Sanfield Industries Ltd. (Bridge & Highway)**  
Email: info@sanfieldhk.com

**1 CS1-ST(S)(T)** - It serves as a top-coat integrated layer protecting the fair faces of concrete, cementitious and silica-based substrates providing self cleaning effect and heavy chemical resistance features that minimize chloride and carbonation attacks and future corresponding discolouring effects thus increasing the durability of the concrete structure and appearance.

**2 CS1-ST(S)(P)** - It serves as a base coat (integrated primer) that strengthens the aging concrete by creating an integrated film on the surface of the existing concrete pores that will minimize the continue decrease of the Alkalinity of concrete substrate due to the ongoing aging process. CS1- ST(S) is required to apply to the newly filmed pores of the concrete structures thus gel-like filler be formed and filling the concrete pores that becomes hardened to increase the overall density of the structure.

**3 CS1-ST(S)(C)** - It serves as a curing compound forming nano thin film membrane when applying to freshly poured concrete structures/elements few hours after pouring. General future cracks phenomenon caused by the expansion and contraction of the concrete pores due to the heat of hydration resulted from the curing and hardening process will be minimized thus shrinkage and water absorption rate will be reduced. The breathable film is formed as well.

### Testing & Certification



Description	Standards	Results
<b>HOKLAS Laboratories</b>		
Negative water pressure resistance with penetration depth	GB/T50082-2009	> 40 bar with penetration depth up to 80mm in Grade 30/20D
Chloride ion penetration resistance	ASTM C1205-05	Moderate
Chloride Diffusion Coefficient	ASTM C1556-03 & Taywood Method	2.25 x 10 <sup>-11</sup> m <sup>2</sup> /s
Water permeability	EN 1062-3	Class II (Medium)
Fungal Resistance	ASTM G21-96 (Reapproved 2002)	No fungal growth (Overall rating is 0)
Carbonation resistance	GB/T 50082-2009 with modifications	Suppression ratio: 100%
Formaldehyde Content	ASTM D5910-05 (2012)	Not detected
Phthalate Content	CPSC-CH-C1001-09.4	Not detected
Heavy Metal Content		
- Lead	ISO 3856-1:1984	Not detected
- Cadmium	ISO 3856-4:1984	Not detected
- Hexavalent Chromium	ISO 3856-5:1984	Not detected
- Mercury	ISO 3856-7:1984	Not detected
- Barium	ISO 3856-3:1984	Not detected
Ozone Depleting Substance Content	In-house Method	Not detected
2-Chloro-1,1-Difluoroethane (HCFC- 142) Content	US EPA Method 311	Not detected
Volatile Organic Compound (VOC) Content	U.S. Environment Protection Agency method 24	13.0 g/L
Toxicity (Concentration of Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury and Selenium)	Flame atomic absorption spectrophotometry with hydride generation system	Non-toxic [World Health Organization's (WHO) recommended limits for drinking water]
<b>Overseas Laboratories</b>		
Water Regulations Approval Scheme (WRAS)	WRAS Material Approval	Approved Materials
Suitability for Use in Contact with water	BS 6920-1:2014	Passed
Drinkability	D.M. 21.03.73	Passed
Fire Classification	EN 13501-1	Class A1
Compressive strength	BS EN 12190:1998	Increase up to 18% against control
Abrasion resistance	EN 13813	> 30% Improvement against control
Anti-surface absorption	BS 1881: Part 208:1996	0 mL/(m <sup>2</sup> .S)
Chemical resistant (Absorbing mean)	EN 2812-1	No visible defects
Chemical resistant (Astringent attack)	EN 13529	No visible defects
Freeze-thaw deicing / Thermal compatibility	EN 13687-1	≥ 1.5N/mm <sup>2</sup>
Freeze-thaw cycles resistance	UNI 7087/72	No visible damages after 300 cycles
Falling-weight test	EN ISO 6272-1	Classes III : >20Nm
Bond strength by pull-off	EN 1542	≥1.5 N/mm <sup>2</sup>
Environmentally-friendly	USA EPD Certified (No. S-P-00413)	Approved

### Caution



- Use under proper ventilation. To prevent precocious reaction, CS1-ST(S) should be kept out of cement powder during application.
- Safety precautions are recommended to be taken during application e.g. wear protective masks, goggles and gloves.
- Store in a dry place. Keep away from glass and aluminium.
- Keep out of reach of children.
- All tools should be washed with clean water after use.
- Any skin or eye contamination should be washed immediately with clear water.
- Seek medical attention if necessary.
- Application method and quantity may vary in different situation, please seek authorized supplier for technical advice if necessary.

### Package



20 L / pail

4 L / jug

1 L / bottle