

1. Product Description

StenScreed® 402S HC is a polyurethane-based, solvent-free, waterborne, cement and aggregate compounded, high-performance, fast-curing, self-leveling polymer concrete floor coating. In addition to all the superior properties of the standard version, **StenScreed® 402S HC** has been specially developed, thanks to its high conductivity, for explosive environments and for areas where work sensitive to electrostatic charges is carried out. Resistant to thermal shocks, solvents and chemical effects, **StenScreed® 402S HC** offers excellent abrasion and impact resistance, does not allow bacterial growth and is easy to clean.

As a long-lasting, durable and decorative coating system, it is an ideal solution for areas such as electrostatic discharge (ESD) sensitive production facilities, explosive storage areas, clean rooms and electronics manufacturing facilities. Thanks to its impermeable structure, it protects the floor it covers against external effects and allows maintenance such as pressurized cold-hot water and steam cleaning. With its water-based and solvent-free structure, it is environmentally friendly and complies with contemporary expectations.

2. Uses

StenScreed® 402S HC is suitable for all indoor areas with forklift, pallet jack and vehicle traffic. Thanks to its high conductivity feature, it has been specially developed for electrostatic discharge (ESD) sensitive areas and explosive environments. It is preferred in environments with frequent cleaning, thermal shocks, solvents and corrosion-causing chemicals.

StenScreed® 402S HC can be used in chemical plants, food processing plants, in wet or dry process areas, cold storage and thermal processing facilities, beverage and water filling facilities, restaurants, laboratories, medium and heavy-duty areas, depots, packing facilities, maintenance and repair areas, and production facilities. In addition, it shows superior performance in high-security areas such as electronics manufacturing facilities, clean rooms, sensitive device production areas, explosive material warehouses, and chemical production and storage facilities where electrostatic charge buildup poses a risk.

3. Application

3.1. Surface Preparation

It is very important to prepare the surface in a correct and proper manner before **StenScreed® 402S HC** application. For this reason, if detailed information about the surface condition is provided, the most suitable surface preparation procedures will be recommended by **Stenkim®**. Pull-off strength of the **StenScreed® 402S HC** application surfaces must be minimum 1.5 MPa.

Polyurethane-Based High-Conductivity Floor Coating

Highlights

- Excellent abrasion resistance
- Resistant to heavy traffic conditions
- High conductivity
- Resistant to many chemicals
- Thermal expansion compatible with concrete
- Resistance to thermal shocks (+70 °C)
- Very high impact resistance
- Waterborne structure allows application on 7-day-old concrete
- Solvent-free
- Non-slip surface creates safe use areas
- Does not allow bacterial growth, can be used in hygiene areas
- Can follow concrete joints and does not require extra expansion joints
- Suitable for areas sensitive to electrostatic discharge (ESD) and for explosive environments thanks to its high conductivity
- Provides a safe working environment by preventing static electricity accumulation



It can be applied on fresh concrete over 7 days old after inspecting for the necessary pull-off strength. There should be no water on the application surface. Any water seeping through the floor must first be stopped.

The concrete substrate to be applied must be cleaned of dust, dirt, grease oil and other impurities, irregularities and loose parts that may reduce adhesion. Naturally occurring thin crust created from the slurry on the top layer of new or old concrete should be removed by shot-blasting machines and/or appropriate abrasive equipment. Holes, voids and cracks on the concrete surface must be repaired by filling with suitable primers or with **StenScreed® 402S HC** itself.

3.2. Primer

StenScreed® 402S HC can be applied without primer application depending on the quality of the concrete substrate. Under dry concrete conditions **StenAst® 2EP** and **StenAst® 2EP-F** are the preferred primers. If the moisture content of the concrete is above 5%, the waterborne epoxy-based primer **StenAst® 2EP MT** should be used.

If primer is used, sand broadcasting must be applied. To provide conductivity, copper busbars are laid on the primer or concrete surface and a grounding connection is made. For surfaces primed with **StenAst® 2EP**, **StenAst® 2EP-F** or **StenAst® 2EP MT**, the time intervals specified in the user manual of the primer used must be observed.

3.3. Mixing and Application

Main steps of application are; homogenization of A component, mixing the components A and B, adding component C to the A and B mix, pouring the **StenScreed® 402S HC** onto the surface, spreading with a toothed trowel for the desired thickness and removing air with a spike roller. Pot life of **StenScreed® 402S HC** is short and affected by ambient temperature. All application steps (mixing, pouring, spreading and rolling) should be completed in approximately 12 to 15 minutes after starting of mixing A and B components.

The entire job must continue at a fast pace and as continuously as possible so that the next set can be joined to the previous one to conceal the junction; there should be no waiting between finishing one set's application and pouring the next. Therefore, teams for mixing, carrying and spreading should be formed, and these teams should work at compatible speeds with each other.

Components must be mixed in the specified ratios. Over or under usage of any component will adversely affect the physical properties of the product. Water or solvent must not be added to the mixture for consistency adjustment.

Component A of **StenScreed® 402S HC** is shaken for 10-30 seconds before its lid is opened.

Then all of component A and B is poured into an appropriate size mixing pan, and mixed with a professional speed-adjustable dual mortar mixer for 30 sec. While continuing to mix, component C is gradually added to the resin mixture without pouring all at once. During mixing, scrape down the sides and bottom of the container occasionally to ensure the mixture is completely homogeneous.

Duration of mixing depends on the starting temperature of the product. Mixing should continue until the mixture reaches a fluid consistency. In room conditions, the mixture reaches the target fluidity within 2-2.5 minutes from the start of mixing.

As the initial temperature drops, this time increases. The mixed **StenScreed® 402S HC**, having reached the target consistency, is poured onto the prepared substrate and spread evenly with a triangular toothed trowel of appropriate size according to the desired thickness.

To avoid joint marks, make sure to join the freshly spread mortar before the surface begins to set. To help remove the air dragged into the material during the mixing process, pass a spiked roller over the **StenScreed® 402S HC** spread



on the surface. Spiked roller application must be done with a hard spiked roller within 2 minutes after the coating is spread on the surface.

All application steps should be done in 10 minutes after mixing is completed. This period shortens in correlation with increasing weather temperature.

4. System Design

System Layers	Brand	Necessity	Dry Film Thickness	Tack-free Time
Surface conditioner	StenAst [®] S	Optional	Nano	30 minutes
Selected primer	StenAst [®] 2EP StenAst [®] 2EP-F StenAst [®] 2EP-MT (nem >5%)	Optional	300-500 µm	Variable
Aggregate	StenSilica 500 Mix	Required if primer is used	-	
Copper bus bar		Required		
Coating layer	StenScreed [®] 402S HC	Required	4-7 mm	24 hours
Protective top coat	StenCoat [®] 2PU TOP FX StenCoat [®] 2PU TOP HD	Optional	0.1-0.2 mm	12-16 hours

5. Cleaning

Equipment used can be cleaned at the end of the job with **StenSolver CL**.

6. Safety

Applicators and supervisors must read the Material Safety Data Sheet (SDS) carefully and follow the instructions provided. Emptied packages must be handled in compliance with relevant regulations and laws. The application must be carried out by skilled workers under supervision of experts and the applicators must use all kinds of protective equipment required for the worksite and the task such as goggles, mask and gloves.

7. Storage

Storage temperature must be between 5 and 30 °C. Packages must not be exposed to direct sunlight. Frozen material cannot be reused.

Under these conditions, the material will retain its properties in unopened containers for 12 months from the production date. The materials must be kept away from open fire and sources that may create fire hazard. Protect the product from freezing.

8. Disclaimer

This document is provided for general information and reflects **Stenkim**[®]'s laboratory data and field experience at the time of publication. **Stenkim**[®] reserves the right to revise this information at any time without notice.

Stenkim[®] warrants that its products conform to the stated specifications on delivery. The buyer is responsible for determining the product's suitability for the intended application and for all conditions of transport, storage,



handling, and use. **Stenkim**[®] accepts no liability for results obtained under conditions outside its control. **Stenkim**[®]'s liability under this warranty is limited to replacement of non-conforming product and excludes any consequential or indirect damages.



9. Technical Data

Property	Method	Result
Base Polymer		Waterborne Polyurethane
Density	EN ISO 2811-2	1.82 ± 0.02 g/cm ³
Application Thickness		min. 4 mm
Antistatic Behaviour	EN 1081	Class I (10 ⁴ -10 ⁶ Ω)
Electrical Resistance (between electrodes, 90 cm)	IEC 61340-4-1	< 5 × 10 ⁵ Ω
Electrical Resistance (to ground)	IEC 61340-4-1	< 5 × 10 ⁵ Ω
Hardness	EN ISO 48-4	D85-90
Adhesion Strength	EN 1542 (on concrete)	3.57 MPa
Adhesion Strength	EN 13578 (on fresh concrete)	3.50 MPa
Capillary Water Absorption	EN 1062-3	0.093 kg/m ² h ^{1/2}
Abrasion Resistance	EN ISO 5470-1 H22-1000 cycles-1 kg	570 mg
Impact Resistance	EN ISO 6272-1	Class 2
Compressive Strength	EN 12190	Class 2
Flexural Strength	EN 13892-2	17 MPa
Thermal Expansion Coefficient	EN 1770	1.05 × 10 ⁻⁵ /°C
Cure shrinkage	EN 12617-1	<0.3%
Thermal Aging (70 °C)	EN 1062-11	Pass
Pot Life @20 °C	EN ISO 9514	10 minutes
Tack-free Time @20 °C		12 hours
Ready for Light Foot Traffic @20 °C		1 day
Time to open to heavy traffic @20 °C		3 days



Color	Catalog	RAL 1001 – Beige / RAL 1006 – Maize Yellow / RAL 3009 – Oxide Red / RAL 6010 – Grass Green / RAL 7037 – Dust Gray / RAL 7032 – Pebble Gray / RAL 7046 – Telegrey RAL 1006 – Maize Yellow RAL 3009 – Oxide Red RAL 6010 – Grass Green RAL 7037 – Dust Gray RAL 7032 – Pebble Gray RAL 7046 – Telegrey
Shelf Life		1 year
Packaging		18 kg sets

Stenkim® reserves the right to make changes to the values in this table at any time.

