

Smartshield System



Specialty Hard Wearing Coating for Concrete, Metal and General Surface Protection

Technical Data Sheet

Description

Smartshield is a single component, 100% solids, solvent free coating. It forms an extremely smooth and highly durable abrasion and impact resistant surface. It is UV stable and resistant to aggressive chemicals and solvents. Provides excellent corrosion protection to metal surfaces. **Smartshield** creates optimal conditions to resist the growth and accumulation of bacteria on the easy to clean surface of the coating. Also, the ability to apply the product at low temperatures is setting new standards for this application. In corners and junctions **Smartshield** used in conjunction with **Smarttech Fabric** creates a monolithic surface, leaving no crevices for the formation of bacteria.

Resists acid attack on concrete and metal in waste water systems and can be coated over new concrete.

Uses

Smartshield is successfully used in applications such as:

- Metal corrosion protection on structures, pipe exteriors, vehicles, etc.
- Protection of concrete against chemical spills
- Lining of concrete tanks or reservoirs
- Repairs and protection of waste water systems and facilities
- Coating OEM machine parts

Substrates

- Metal (including Stainless Steel)
- Concrete & Masonry
- Glass, Ceramic & Ceramic tiles
- GRP Panels (Glass Reinforced Polyester)
- Wood
- Gypsum*

* These surfaces may need priming since they are usually quite porous.

Advantages

Smartshield offers the following advantages:

- 1-component
- Ready to use
- Solvent free
- Containers can be resealed for future use
- Can be applied to damp surfaces
- No 28 day wait on new concrete & masonry surfaces
- No joints, seamless monolithic surface
- No locations for bacteria or germs to lodge
- Odourless – allowing application in close proximity to food products
- Fast curing from -10°C
- After curing it is resistant to animal fats, blood and aggressive cleaning chemicals with 70°C plus hot water pressure rinsing.
- Contains no isocyanates, reducing health concerns
- Adheres to most building surfaces without priming

Colours

White, Grey, RAL Yellow, Red, Blue and Green Safety colours and Clear
Other colours available upon request.

Application

Surface Preparation

Surfaces must be sound, clean, free of dust and loosely adhering particles, all traces of corrosion, oil, fats. Mildew and algae must be removed with bleach solution. Concrete and masonry surfaces should ideally not have a moisture content above 8%. Surfaces should be free of laitance and efflorescence as well as any other deposits that may interfere with the bond to the concrete or masonry. Before applying **Smartshield**, surfaces must be lightly abraded and wiped down with a cleaning fluid such as denatured alcohol or other appropriate cleaning method. ensuring that no oils, fats or other residue remain. The product must be

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gently stirred before use, taking care not to entrain air as this will create air bubbles in the coating which may form small craters on curing. Should this occur, allow the product to stand with the lid in place for between 5 and 10 minutes to allow air to escape.

Priming

Metal, Concrete and Masonry, Glass or Ceramic generally require no priming.

On wooden surfaces, only where tannin bleed may be expected, or on concrete or other surfaces where contamination might cause staining, prime surface with **SMART Block**. This will prevent any staining from the existing surface. For any questions regarding substrates, contact customer service.

Application Instructions

At all junctions between panels, dissimilar substrates, pipe or conduit penetrations and at plane junctions, apply **Smarttech Fabric** to reinforce these locations.

Apply a moderate coat of **Smartshield** by brush or roller symmetrically over the joints covering approximately 50mm each side of the junctions (e.g. corners, panel joints, floor to wall and wall to ceiling junctions). Lay in the 100mm wide fabric symmetrically over the joint and imbed using a brush or roller. Make sure that no bubbles or creases appear in the fabric. At the same time apply a moderate coat of **Smartshield** at 0.25l/m² over the entire area to be treated. Allow to become touch dry (about 1 hour at 0°C). At this stage, any unacceptable surface imperfections related to the fabric application maybe lightly sanded before commencing with the final coat.

Once touch dry apply a second moderate coat of **Smartshield** at 0.25l/m² over the entire area. Do not over apply coating to avoid runs on

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the surface. This will complete the monolithic coating of the treated surfaces.

Wall surfaces will be serviceable in 2 hours and floors walkable in 2 hours.

Note:

In some applications, the owner or applicator may elect to produce a thicker coating. This will result in greater consumption of **Smartshield**.

Application Conditions:

Ambient Temperature: -10°C to 45°C
Surface Temperature: -10°C to 50°C

Do not apply over frozen matter! Smartshield can be applied at temperatures as low as -23°C.

Contact our technical department for specific instructions.

Coverage:

Complete System:

Smooth surfaces 0.5litre/m²

This includes total coverage for both coats.

Curing Times:

Touch dry after 1 hour at 0°C and 50% RH

Lightly Trafficable after 2 hours at 0°C and 50% RH

Fully cured after 14days.

Resistance to Chemicals

Chemical resistance tests show that cured **Smartshield** is resistant to many solvents, acids and alkalis like -Diesel and Gasoline

- Acetone
- Butanol
- MEK (methyl ethyl ketone)
- White spirits
- Sulphuric Acid 5%
- Sodium hydroxide 5%
- Hydrochloric Acid 5%
- Animal Fats and Blood
- Hydraulic fluid

It is advisable to allow 48 hours cure before subjecting surfaces to aggressive chemicals.

Cleaning

Uncured **Smartshield** can be removed with Denatured Alcohol.

Cured **Smartshield** can only be removed mechanically.

Technical Data:

Type	Solvent Free 1 component Synthetic Polymer
Shelf life and Storage conditions	unopened 12 Months, Storage Temp. +5 - 32°C
Application Temperature	-10°C - 45°C (Ambient) -10°C - 50°C (Surface) Application possible at -23°C with special conditions. Contact technical department.
Total Thickness (Smooth Surface)	0.5mm (500microns)
Total weight	1.5kg/litre
Drying Time (touch dry)	1 hour at 0°C and 50% rel. humidity
Trafficable	Lightly walkable after 2 hours at 0°C and 50% RH
Full Cure	after 14 days
Coverage	On smooth even surfaces: 0.5l/m ² (Surface Roughness, Unevenness and high absorbency will consume more product to achieve desired thickness.)
Corrosion Resistance	ASTM B117 1000hr. salt spray - Excellent result
Taber Abrasion ASTM D-4060-14	Wear Index I=58 @1000cycles
Water vapour Permeability ASTM E-96	24x10 ⁻⁸ g.s ⁻¹ .m ² .Pa ⁻¹ (4.2 perms) @ 0.5mm thick
Container Size / Article	Packaging
Smartshield	3.5litre Bucket White, Grey, Safety Yellow, Red, Blue and Green and Clear (Special Colours possible upon request)
Smarttech Fabric	100mm x 100m Roll
Smart Block Matt Sealer	3kg Kit

Storage

Unopened containers:

12 months from manufacture date.

Opened Containers:

To lengthen storage time, fill headspace above **Smartshield** with nitrogen gas and immediately replace lid securely. Shake closed container gently before storing.

Caution:

Carefully read the Safety Data Sheet for **Smartshield** before use. Avoid contact with eyes and skin as this may cause irritation. Should contact with eyes occur rinse for 15 minutes under running water. If swallowed do not induce vomiting and seek the advice of a doctor.

Important Notice:

Please always consult our website at

www.smarttechcoatings.co.uk to check that you are reading the most up to date data on this product.

Note:

The information contained in this technical data sheet is based upon our experience and is therefore not binding. All data are laboratory values, which may differ in practice. Therefore, these represent no assurance of characteristics. This data is given in order to allow compliance with respective local specificities. The variety of possibilities and the specific project details in combination with the products cannot be handled within the framework of this data sheet. If you have questions, please contact us.

It is the user's responsibility to be informed about the characteristics of the products as well as the technical information and proper processing. Please take careful note of all manufacturers' specifications, e.g. information on surface pretreatment. A specific result cannot be guaranteed due to differing prevailing individual conditions, which can lead to differing result. Preliminary tests are advised to test for the desired result.