

# Technical Data Sheet

## Sureshield ZV Heavy Duty Floor Topping System

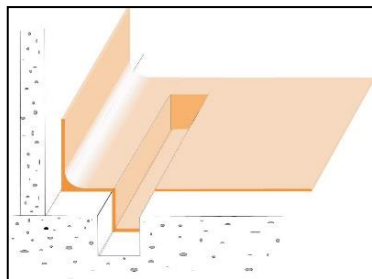
### DESCRIPTION:

Sureshield ZV is a no odour industrial grade floor topping system specifically designed for the food industry. Sureshield ZV resin is blended with specially graded silica quartz aggregates to produce a floor system that is hard and durable, Non-slip, resistant to impact, abrasion, thermal shock and chemicals/food acids, yet is non porous, seamless, hygienic and easily cleaned. Sureshield ZV is fully bonded to the concrete to prevent water creep.

### TYPICAL FEATURES | BENEFITS:



- Sureshield ZV is a heavy duty monolithic 8mm thick floor topping, often with coving.
- ZERO Odour product. This system negates the issues of smell sometimes encountered with standard Sureshield.
- Rapid Cure: Full system may be installed within an 8hr period.
- Excellent chemical resistance. See chart.
- Excellent abrasion resistance (6 times that of basalt concrete).
- Excellent impact resistance:
- Excellent adhesion to properly prepared substrates.
- Easily cleaned. See comments at end. Waterblast resistant.
- Excellent slip resistance. Specification is needed of the degree required  
\* Note\* please read detail within
- Able to be formed into coving, plinths sumps etc.
- Good resistance to thermal shock. When cured, will perform at all normal in-service.
- Temperature ranges. I.e. Operational Freezers to hot & boiling water applications, as well as steam cleaning.
- Will not support bacteria or fungal growth. Contains STERISHIELD to retard microbial growth.
- Cured Film is non-toxic
- Free of Bisphenol-A
- HACCP approved manufacturing process
- Not moisture permeable
- Colour: Natural Gold; **or** other colours dependant on aggregate selection.
- The system may be pigmented for full thru-colour permanence
- Will form coves to any required height or radius.
- Suitable for use in dry or wet situations including ramps.
- One-pass, rapid installed flooring
- Integrated floors, coves, drains, nibs and upstands
- Carefully managed falls to drains to help prevent ponding water
- Impact and abrasion resistance combined with high heat and chemical resistance



## PERFORMANCE DATA

Minimum Thickness	8mm
Minimum Application Temperature: Air	+5°C
Maximum Application Relative Humidity: Air	85%
In-service temperatures: on fully cured system	8mm -50 to +90°C
Fire properties: AS/ISO 9239.1-2003:	Non-directional.
Critical Radiant Flux: 6.5Kw/m <sup>2</sup> . 2008	6.5Kw/m <sup>2</sup> . Smoke Value: 379 Kw/m <sup>2</sup>
Chemical Resistance	Resistant to chemical spillage –cured 7 days at 25 <sup>0</sup> C. .Refer Chemical resistance chart
Electrical properties: surface resistivity	3x10 <sup>8</sup> Ohm
Adhesion to correctly prepared substrate	GB2567-2008. 2.77(KJ/m <sup>2</sup> ). - Concrete failure
Co-efficient of expansion 2.23 x 10 <sup>5</sup> /C	20°C and 60°C when heated at 1°/minutes.
Compressive Strength	Nom. 50-60mpa
Flexural strength	25MPa
Tensile strength	6N/mm <sup>2</sup>
Heat resistant	100°C
Moisture absorption: ASTM D570-63	0.04%
Weight per m <sup>2</sup> @ 8mm thickness @ 9mm thickness	17.18kgs 19.33kgs
Slip resistance	R10 to R13. (when used with sharp aggregate)

## RECOMMENDED USES:

- Food process floors where a high degree of hygiene is required. Approved by regulatory authorities.
- Ablution blocks: Kitchens | Laundries | Toilets
- Bakeries
- Beverage Processing: Bottling Plants | Breweries | Fruit Juice | Wine etc.
- Cool Stores: - Freezers | Chillers etc.
- Commercial Kitchens: Main Kitchen | Freezers | Chillers | Cool Stores etc.
- Dairy Factory Floors. Main Process Halls/Rooms etc.
- Meat Processing: Abattoirs | Butchery floors | Poultry | Freezers | Chillers | Cool Stores etc.
- Seafood Processing: Wet Fish | Shellfish | Freezers | Chillers | Cool Stores etc.
- Sports facilities: Changing Rooms | Showers | Toilets for hard-wearability.
- Supermarkets: Bakeries | Deli | Fish | Meat | Freezers | Chillers | Cool Stores etc.
- Floors where a high degree of chemical, mechanical and slip resistance is of prime importance.
- Interior/exterior use. Concrete repair and protection – resurfacing damaged or broken concrete with a more physical and chemical resistant surface.
- Can be applied to new or existing sound concrete and also over old resin floors
- Suitable for use in dry or wet situations including ramps.
- To provide excellent underfoot slip resistance in commercial applications.
- Floors, walls, upstands, plinths etc. where a high degree of chemical, mechanical and slip resistance is of prime importance
- Interior/exterior use.
- Concrete repair and protection – resurfacing damaged or broken concrete with a more physical and chemical resistant surface.
- Can be applied to new or existing sound concrete, timber or other surfaces.
- Floors above work spaces: Sureshield ZV forms a watertight barrier and is compliant with E3 Internal water 3.1.1e. Use full fibreglass laminated floor and Joint safe tape in these situations.

## LIMITATIONS:

- Application to uncured concrete (minimum recommended cure 28 days). Application to damp surfaces. (Refer to allnex Bulletin on application options on wet or uncured concrete).
- Application to unstable or defective substrates without approved remedial treatment prior to installation.
- Application below +5C.
- Application to unstable or defective substrates without approved remedial treatment prior to installation.
- Application over existing coatings/toppings (refer to allnex) or over concrete cure or release agents without allnex approval or over ceramic tiles without specific written allnex design specification.
- Refer to allnex chemical resistance data.
- Cracking in adjacent walls and concrete substrate will likely telegraph through the Sureshield ZV.

## CHEMICAL RESISTANCE CHART: 2009

Test procedure – Total immersion

Observation - Checked for chemical attack and hardness throughout the testing period

Results- Taken after 3 weeks exposure

Test Media	Concentration	Sureshield ZV	Test Media	Concentration	Sureshield ZV
<b>ACIDS</b>			<b>ALKALIS</b>		
Hydrochloric Acid	10%	M	Potassium Hydroxide	30%	A
Sulphuric Acid	10%	M	Caustic Soda	50%	A
Sulphuric Acid	25%	U			
Acetic Acid	10%	M			
Acetic Acid	50%	M	<b>SOLVENTS</b>		
Nitric Acid	10%	M	Ethanol		M
Citric Acid	10	M	Toluene		A
Lactic Acid	90%	M	Acetone		D
Phosphoric Acid	30%	M	Isopropanol		U
<b>PETROCHEMICALS</b>			<b>DISINFECTANTS &amp; CLEANERS</b>		
Kerosene		U	Detergent (DET 18)	100%	U
			Bleach (2.5% Sod Hyd Cl)		M
			MEKP – M50		A
<b>OTHERS</b>					
Sugar Syrup	30%	U	<b>SALT SOLUTION</b>		
Distilled Water		U	Brine	20%	U

### LEGEND:

U	Unaffected (i.e. after 3 week exposure the samples have not changed)	M	Marked (Short term exposure, the test media will leave a mark on the sample)
A	Attacked (Short or long term exposure, the mechanical properties will deteriorate)	D	Destroy (Short or long term exposure, damage will occur)

### SUBSTRATE: – Preparation

All substrates shall be stable and solid.

#### \*\*\*\*Note\*\*\*\*

The ability of new or existing floors to take the loads as a result of the allnex Sureshield ZV must be checked prior to installing. All control joints junction cracks in the substrate etc. are to be properly treated.

### CONCRETE:

Shall have a surface which has been mechanically trowelled to AS3610:1995 U3/NZ/3114:1987U3 finish.

A minimum compressive strength of 25MPa at 28 days cure.

A minimum of 28 days prior to the installation of Sureshield ZV. The moisture content shall be less than 75% RH. (Refer allnex Bulletin on application options on wet or uncured concrete).

Prepare concrete by mechanical abrasion method to CSP7-8.

Remove all concrete curing agents, contaminants and any other material likely to affect the adhesion of the Sureshield ZV.

#### \*\*\*\*Note\*\*\*\*

If the substrate is an above grade slab and waterproofing is required to comply with NZBC E3, then tank the floor and cove upstands with a layer of 450gsm CSM fibreglass. This will provide a seamless waterproofing layer. Ensure the floor is clean, dry and prepared as above.

allnex Construction Products should be consulted when installing Sureshield ZV on any suspended floor slabs.

### PLYWOOD | TIMBER:

Consult allnex for information

### COVE TOPS: - [http://www.allnexconstruction.com/pdf/Details\\_resin-floor-toppings.pdf](http://www.allnexconstruction.com/pdf/Details_resin-floor-toppings.pdf)

Install allnex cove upper termination metal strips: **5.2mm or 9.2mm rebated strip.**

Use a rebated wall cut if the coving strip cannot be used.

Install fibreglass CSM cloth in floor wall internal junctions.

**STZ PREFILL:** (for adding falls, slope modification and floor angles)

STZ prefill system types: see STZ technical literature.

The falls must be specified pre-tender. (Sureshield ZV is 8-9mm thick and prefill may involve significant extra materials).

The quantities of materials required to raise the floor height at wall perimeters is often underestimated. To do this may involve significant extra costs and should be discussed and agreed. It is a very common for STZ prefill system to be used under Sureshield ZV to create falls to drains and other filling applications. Normally for new work falls are laid in the concrete and fall to drains. However in refurbishment the drains and falls are incorrect. Sometimes new drains are installed. The Prefill create falls of at least 1: 50 to ensure no ponding water. (1:100 will fall but will have standing water in places).

**QUALITY ASSURANCE:**

The allnex Licensed Contractor shall ensure all QA checks have been undertaken prior to the installation process and subsequently during the installation process. The completed documentation must be made available to allnex and the client/clients authorised personnel.

The product is to be installed within the required control range to ensure a fully cured hard wearing monolithic floor topping system.

Information to be recorded daily is:

- Concrete sub-base or prefill mix.
- Material batch numbers used.
- Sequence of mixing, ratios and quantities and formula.
- Substrate moisture content & Substrate temperature.
- Ambient temperature | Ambient relative humidity.
- Daily detail of licenced contractors on-site.

**INSTALLATION:**

***Sureshield ZV Primer | Resin & Topcoat must be Pre-Promoted with Cobalt solution.***

Product	Promoter
Intafloor ZV Primer	200 grams Cobalt Solution
Intafloor ZV Resin	100grams Cobalt Solution
Intafloor ZV Topcoat	200grams Cobalt Solution

***Minimum Catalyst (M100) addition is 1.5%***

Increase Catalyst levels for thin films (Primer & Topcoats) to ensure prompt cure.

Decrease Catalyst levels for thicker films (Resin Screed) to avoid exotherm.

Ensure pre-trials are done on site in site conditions.

The thickness and ambient and floor temperature has a large effect on the cure profile.

**PRIMING:**

Prime the properly prepared floor areas with minimum one coat of ZV Primer. Coverage rate and number of coats will vary depending on the porosity of the substrate, Maximum coverage 6m<sup>2</sup>/litre/coat. ZV Primer and ZV Hardener are to be thoroughly mixed in the correct proportions (1.5% - 3% on ZV Primer weight).

Wait until ZV Primer has gelled/set before over-coating.

**RESIN SCREED:****SURESHIELD ZV M<sup>2</sup> MIXING RATIO AND COVERAGE @ 8mm:**

Sureshield ZV Resin	2.454kg
ZV Hardener	1.5 -2.5% -on weight of resin
STZ Flooring Sand	14.72kg
Total Weight	17.18kg/m <sup>2</sup>

**\*\*\*\*Note\*\*\*\***

Maximum Sureshield ZV Resin: Filler (sand) ratio 1:6 parts by weight Resin, Hardener and Sand are to be blended in an efficient mixer to ensure all ingredients are homogeneously blended. Higher aggregate rates are used for coving.

Apply Sureshield ZV flooring to the correctly prepared and sealed substrate using a spreader box and/or a suitable glass, steel trowels, power float etc. Ensure the matrix is well compacted and free of ridges or unevenness. Successive mixes must be homogeneously blended together into wet Sureshield ZV mixes. Access to repair wet floor areas during installation can be achieved using crampons or special spiked shoes. Adequate lighting is to be provided to ensure defective surface finishing can be easily identified and corrected during the installation process. Lubricate tools and equipment used during the installation with sparing quantities of Styrene Monomer. Use Acetone only to clean tools and equipment.

Sureshield ZV must be applied in such a manner to achieve a minimum 8mm thickness. Use screed box, bars or install angle strips as a guide. Accurately weigh and power mix until homogeneous the Sureshield ZV Resin and ZV Hardener in the correct proportions:

Ensure all finished edges of the Sureshield ZV are supported to avoid damage. Sureshield ZV may be applied to skirtings, coves and upstands if required with the use of specially formed trowels.

Optional coves and skirtings can be completed as the main floor is installed however they are best installed following installation of the floor. Floors must be protected during cove/skirting installation.

#### TOPCOAT:

Once finished and hardened apply the Sureshield ZV Topcoats.

The Topcoat must be applied only to clean and dry surfaces.

Topcoat application rates depend on the Surface Finish Texture. (See Non- Slip Floor Definitions below)

#### \*\*\*\*Note\*\*\*\*

Additional topcoats will reduce surface texture and slip resistant properties.

#### JOINTS:

All concrete control and construction joints should be carried through the Sureshield ZV using K130 Epoxy Gold for control joints.

#### THINNING:

Do not thin. Lubricate tools with a minimal amount of styrene monomer (mixer and barrows).

#### NON-SLIP:- floor definitions:

The contractor shall ensure that the surface finish in all zones is agreed with the client. (Samples to be supplied and agreed prior to installation).

allnex Rating	Description	CF Rating NZ/AS3661.1:1993	Examples Completely homogeneous floor	Topcoat Requirements	
				Number of coats	Spread Rate per litre
NR1	Smooth –steel trowel floated.	0.46	Dry areas e.g. Bakeries	1	6m <sup>2</sup>
NR2	Non-slip & Hard-Wearing – glass float.	0.56	Light-Wet areas e.g. Heavy duty bakery.	1	5m <sup>2</sup>
NR3.A	Medium duty non-slip – Glass float finish and the 18/36 non-slip aggregate is broadcast into the wet surface. Apply a Medium Sprinkle with areas of no non-slip. Follow this with roller applied topcoat. This gives a good combination of Non-slip and cleanability.	0.73 R 11	Continually Wet areas with non-slip required. e.g. Light duty Meat, fish. Wet area Bakery.	2 1 <sup>st</sup> Coat 2 <sup>nd</sup> Coat	4.00m <sup>2</sup> 6.00m <sup>2</sup>
NR3.B	Heavy duty non-slip – glass float and the 18/36 non-slip aggregate is broadcast into the wet surface. This is a full spread applied heavily. Follow this with roller applied topcoat.	R12	Heavy duty e.g. Butchery, abattoirs Fish Processing	2 1 <sup>st</sup> Coat 2 <sup>nd</sup> Coat	2.5m <sup>2</sup> 4.00m <sup>2</sup>
NR4	Very sharp non-slip: glass float and is broadcast with 18/36 mixed 50/50 with Silicon carbide non-slip aggregate into the wet surface. Follow this with roller applied topcoat.	R13	Heavy duty processing with extra slip hazards.	2 1 <sup>st</sup> Coat 2 <sup>nd</sup> Coat	2.5m <sup>2</sup> 4.00m <sup>2</sup>
NR5	Specialised very heavy duty nonslip. Refer to allnex for a specification.				

#### \*\*\*\*Note\*\*\*\*

1. The aggregates must be broadcast into the wet Sureshield ZV body coat; not into topcoat.
2. The First Topcoat is Sureshield ZV Resin : Final Coat is Sureshield ZV Topcoat Resin
3. Ensure the contractor supplies information on the above non-slip ratings and provides a cured sample showing the surface finish.

**PRODUCT PROPERTIES:**

Pot Life	25°C - 50%RH	20 – 30 minutes
Hard Dry	25°C	3 hours
Light Foot Traffic	25°C	3 hours minimum
Full Use	25°C	> 4 hours
Recoat	Anytime within 24 hours. After 24 hours: Severe mechanical abrasion	
SG kg/litre Resin   Hardener   Aggregate	2.148	
Clean Up	Acetone	
Dangerous Goods Class ~ Intafloor ZV Primer ~ Sureshield ZV Resin ~ Intafloors ZV Topcoat ~ ZV Hardener	Hazard Class 9   Packing Group III Hazard Class 9   Packing Group III Hazard Class 9   Packing Group II Hazard Class 5.2	
Packaging ~ Intafloor ZV Primer ~ Intafloor ZV Resin ~ Intafloor ZV Topcoat ~ ZV Hardener	20 kg Open top metal container 20 kg Open top metal container 225 kg Metal Drum 5 kg Plastic Bottle	
Shelf life	6 months from date of manufacture (After this period consult with allnex)	

**COLOUR OPTIONS: Sureshield ZV may be:**

- **Natural:**  
This is a gold /natural colour. Clear resin where the ochre colours of the aggregates are seen. This is a durable option with least appearance change over time.
- **Fully Tinted:**  
The resin is fully coloured with tinters. The floor takes on a solid colour effect. Often Grey, Dark Grey, Black, Red etc. - see colour chart online.
- **Coloured Chip Aggregates (sometimes referred to as Decorative Sureshield ZV )**  
Colour granules are added in different quantities (concentrations) into clear resin.

**HEALTH & SAFETY:** Refer safety data sheets (SDS).

- Overalls are recommended when using this product. Wear gloves if this suits the user as the material will bond strongly to skin. It has not been found to be dermatitis causing.
- The use of fans to provide positive forced air draft and/or extraction is recommended.
- Flammable 3C. Erect “No Smoking” signs. No welding or naked flames permitted during installation. Have fire extinguishers readily available.

**MAINTENANCE and CLEANING:****Resurfacing:**

allnex recommend three options:

- Re-aggregating with Traxite VE System (odour during installation) which is a very high durability and chemically resistant finish. It offers very good adhesion to the prepared older surface.
- Re-aggregating with Surecote System 500AR (no odour system) which is a high durability and chemically resistant finish. It offers very good adhesion to the prepared older surface.
- Another option is Nuthane Topcoat Traxite System (no odour system) which offers a monolithic and non-slip coloured finish.

**Repairs:**

Can be undertaken with further new Sureshield ZV applied directly or use Supascreed (no odour option) repair system.

**Cleaning:**

A Sureshield ZV floor is cleaned with stiff bristled brushes and detergents. The stiff bristle brushes and commercial detergents will remove dirt from the non-slip surface that a soft mop will not. The waxed nature of our top-coating system may attract dirt during the early life of the product. Pay careful attention to cleaning at this stage. (Refer to the Resin Flooring Cleaning document on our website).

**PRODUCER STATEMENT:**

allnex Construction Products state that Sureshield ZV is compliant with E3 (internal water) and D1 (Access routes / slip resistance wet & dry).

Complies with CLEANROOM and controlled environment AS/NZS ISO 14644.4: 2002 section E.2.1.4 Floors. That the floor shall be non-porous, slip resistant, abrasion resistant and resistant to chemicals. They shall support static and dynamic loads.

Complies with fire ratings.

**DETAILS:**

For details see the website: resin floors /industrial toppings / "details- Industrial floors" for more options.

[http://www.allnexconstruction.com/pdf/Details\\_resin-floor-topplings.pdf](http://www.allnexconstruction.com/pdf/Details_resin-floor-topplings.pdf)

**FIXING OF PLANT AND MACHINERY:**

Mechanical fixings into the floor must be resin fixed. This is to ensure that there is no water migration into the substrate.

Conventional expanding plugs, screws or anchors are not an acceptable fixing method.

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The logo for allnex, featuring the word "allnex" in a bold, lowercase, sans-serif font. Above the letters "i", "l", and "e" are three horizontal bars in red, orange, and green respectively.

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