

# Technical Data Sheet

## Surecote System 500 Epoxy Topping System

**allnex**

### DESCRIPTION:

Surecote System 500 is an industrial grade 5-6mm medium to heavy duty floor topping system. Surecote System 500 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.

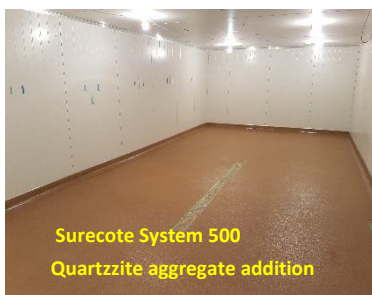
Surecote System 500 is fully bonded to the concrete to prevent water creep.

### TYPICAL FEATURES | BENEFITS:



Surecote System 500  
Gold pigment addition  
Heavy non-slip NR3.B

- Slurry and Broadcast or Trowel applications
  - Low Odour.
  - Non-flammable.
  - May be used in food safe areas.
  - Good chemical resistance. See chart.
  - Excellent abrasion resistance.
  - Excellent impact resistance.
  - Excellent adhesion to properly prepared substrates.
  - Easily cleaned - 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.
  - Will not support bacteria or fungal growth. Contains inhibitors to retard microbial growth.
  - Cured Film is non-toxic.
  - Not moisture permeable.
  - Will form coves to any required height or radius.
  - Integrated floors, coves, drains, nibs and upstands.
  - Suitable for use in dry or wet situations including ramps.
  - Carefully managed falls to drains to help prevent ponding water.



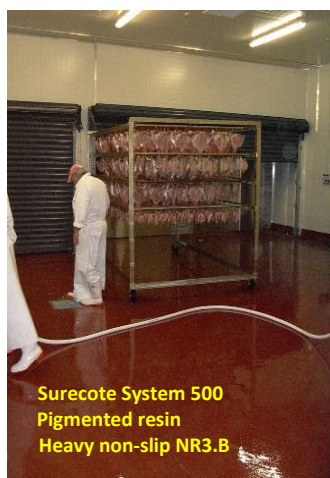
Surecote System 500  
Quartzite aggregate addition



Surecote System 500  
Natural gold aggregate



Surecote System 500  
Natural gold aggregate  
Heavy non-slip NR3.B



Surecote System 500  
Pigmented resin  
Heavy non-slip NR3.B



Surecote System 500  
Natural gold aggregate  
Extreme non-slip NR5



Quartzite colour options  
for addition to:  
Surecote System 500

### Colour:

Natural Gold; **or** other colours dependant on resin pigmentation or aggregate selection.

The system may be pigmented for full thru-colour permanence.

Refer: Colour section below:

**PERFORMANCE DATA:**

Minimum Thickness	5mm
Minimum Application Temperature: Air	+5°C
Maximum Application Temperature: Air	+70°C
Maximum Application Relative Humidity: Air	85%
In-service temperatures: on fully cured system	6mm -30 to +65°C
Chemical Resistance	Resistant to chemical spillage –cured 7 days at 25°C.. Refer Chemical resistance chart
Adhesion to correctly prepared substrate	1.5MPa minimum
Co-efficient of expansion 10-/mm/m/°C	-2.23
Compressive Strength	Nom. 93MPa
Flexural strength	25Mpa
Tensile strength	6N/mm <sup>2</sup>
Heat resistant	65°C
Moisture absorption: ASTM D570-63	0.04%
Weight per m <sup>2</sup>	5mm - 10.74kgs 6mm - 12.88kgs
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
- 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: 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
- Tie-coat: new to old concrete.
- 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: Surecote System 500 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.
- Exterior use: Must be over-coated with allnex Revathane

**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 +5°C.
- 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.
- Ultra-intense chemical attack. - Refer to allnex chemical resistance data.
- Cracking in adjacent walls and concrete substrate will likely telegraph through the Surecote System 500.
- Heavy duty industrial use.
- Will not correct falls refer: STZ Prefill section.
- Check system compatibility if over-coating existing resin floors. Refer: allnex Construction Products.

**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	Surecote System 500	Test Media	Concentration	Surecote System 500
<b>ACIDS</b>			<b>ALKALIS</b>		
Hydrochloric Acid	10%	M	Potassium Hydroxide	30%	U
Sulphuric Acid	10%	M	Caustic Soda	50%	U
Sulphuric Acid	25%	M			
Acetic Acid	10%	U			
Acetic Acid	50%	D	<b>SOLVENTS</b>		
Nitric Acid	10%	M	Ethanol		M
Citric Acid	10	U	Toluene		M
Lactic Acid	90%	A	Acetone		A
Phosphoric Acid	30%	U	Isopropanol		U
<b>PETROCHEMICALS</b>			<b>DISINFECTANTS &amp; CLEANERS</b>		
Kerosene		M	Detergent (DET 18)	100%	U
			Bleach (2.5% Sod Hyd Cl)		M
			MEKP – M50		M
<b>OTHERS</b>					
Sugar Syrup	30%	U	<b>SALT SOLUTION</b>		
Distilled Water		U	Brine	20%	M

**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 Surecote System 500 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.

Concrete shall be cured for a minimum of 28 days prior to the installation of Surecote System 500.

The moisture content shall be less than 75% RH.

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

Surecote System 500 can be installed on 14-day old concrete providing conditions outlined in our Technical Bulletin 'Resin Floors on Wet Concrete' are complied with.

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 Surecote System 500.

**\*\*\*\*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 allnex Surecote System 500 on any suspended floor slabs.

**PLYWOOD | TIMBER:**

Consult allnex for information.

**COVE TOPS: - [http://www.allnexconstruction.com/pdf/Details\\_resin-floor-topplings.pdf](http://www.allnexconstruction.com/pdf/Details_resin-floor-topplings.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. (Surecote System 500 is 5-6mm 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 Surecote System 500 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.

**PREPARATION:** - Installation

Prime the properly prepared floor areas with minimum one coat of Supascreed Primer. Coverage rate and number of coats will vary depending on the porosity of the substrate, Maximum coverage 6m<sup>2</sup>/litre/coat. Supascreed Primer Resin and Hardener are to be thoroughly mixed in the correct proportions and then diluted with clean potable water and remixed.

Wait until Supascreed Primer has turned clear and hardens before over-coating. (Primer must be overcoated within 36 hours)

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

Porous substrates may lead to blisters forming in the Surecote System 500 topping due to air escape from the substrate.

Surecote System 500 must be applied in such a manner to achieve a minimum 6mm thickness. Use screed box, bars or install angle strips as a guide. Accurately weigh and power mix until homogeneous the Surecote System Resin | Surecote System 500 Hardener and STZ Flooring aggregates in the correct proportions:

**SURECOTE SYSTEM 500 MIXING RATIO: Slurry & Broadcast**

Surecote System 500 Resin	2 parts by weight	7.00 kg
Surecote System 500 Hardener	1 part by weight	3.50 kg
STZ Flooring Sand	3.57 parts by weight	
Blend: Coarse WP 7/14 2 parts	~ to the combined mixed weight of the Resin and Hardener	15.0 kg
Medium WP18/36 2 parts		15.0 kg
Fine J61w 1 part		7.5 kg

**SURECOTE SYSTEM 500 MIXING RATIO: Trowel**

Surecote System 500 Resin	2 parts by weight	7.00 kg
Surecote System 500 Hardener	1 part by weight	3.50 kg
STZ Flooring Sand	5 parts by weight	
Blend: Coarse WP 7/14 2 parts	~ to the combined mixed weight of the Resin and Hardener	21.0 kg
Medium WP18/36 2 parts		21.0 kg
Fine J61w 1 part		10.5 kg

**SURECOTE SYSTEM 500 - M<sup>2</sup> COVERAGE Flooring @ 6mm:**

Surecote System 500 Resin	1.226 kg
Surecote System 500 Hardener	0.613 kg
STZ Flooring Sand	11.04 kg
Blend: Coarse WP 7/14 2 parts	
Medium WP18/36 2 parts	
Fine J61w 1 part	

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

Resin, Hardener and Sands are to be blended in an efficient mixer to ensure all ingredients are homogeneously blended. Higher aggregate rates are used for coving.

## **APPLICATION METHOD: Slurry and Broadcast System**

Pin-rake | Trowel

Pour onto the prepared and primed surface and spread evenly using the appropriate method to obtain a 5-6mm finish.

Ensure the matrix is well compacted and free of ridges or unevenness.

Successive mixes must be homogeneously blended together into wet Surecote System 500 mixes.

Access to repair wet floor areas during installation can be achieved using crampons or special spiked shoes.

**Once levelled, broadcast evenly K20s** aggregate (or see below for non-slip options) into the wet surface at a rate of 3-4kg /m<sup>2</sup>.

Broadcast until refusal and no more wet resin appears.

This is a heavy application rate.

Work carefully to keep a clean working edge.

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

Ensure an even spread of aggregate.

Over-loading of aggregate in confined areas will leave ridges.

## **APPLICATION METHOD: Trowel System**

Trowels: Glass & steel | Spreader box | Power trowel

Apply Surecote System 500 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 Surecote System 500 mixes.

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 Methylated Spirits.

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

Use Acetone only to clean tools and equipment.

Ensure all finished edges of the Surecote System 500 are supported to avoid damage.

Surecote System 500 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 Surecote System 500 Topcoat.

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.

**Optional:** For greater Chemical resistance use Surecote System 500 AR topcoat in place of the Surecote System 500 Topcoat.

## **CURING:**

Surecote System 500 achieves sufficient hardness in 8 -12 hours – take care for 48 hours.

Cured film should be kept dry for a minimum of 12 hours following sealing.

Water and condensation on the surface within this time may cause blooming (whitening).

A drop-in temperature to “dew point” may also cause blooming.

## **JOINTS:**

All concrete control and construction joints should be carried through the Surecote System 500 using K130 for control joints.

**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 Surecote System 500 body coat; not into topcoat.
2. The First Topcoat is Surecote System 500 Resin : Final Coat is Surecote System 500 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 ~50%RH	12 hours
Light Foot Traffic	25°C ~50%RH	24 hours minimum
Full Use	25°C ~50%RH	>48 hours
Recoat	Anytime within 24 hours. After 24 hours: Severe mechanical abrasion	
SG kg/litre: Resin   Hardener   Aggregate	2.148	
Thinning	Do not thin. Lubricate tools with Methylated Spirits (mixer and barrows).	
Clean Up	allnex Acetone	
Dangerous Goods Class ~ Supascreed Primer ~ Surecote System 500 Resin ~ Surecote System 500 Hardener	Hazard Class 9   Packing Group III Hazard Class 9   Packing Group III Hazard Class 8   Packing Group I	
Packaging ~ Supascreed Primer ~ Surecote System 500 Resin ~ Surecote System 500 Hardener	6.4 kg Kit 20 kg Polypail   200 kg Metal Drums 20 kg Polypail	
Shelf life	6 months from date of manufacture (After this period consult with allnex)	

**COLOUR OPTIONS: Surecote System 500 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 Surecote System 500).**  
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.

## **MAINTENANCE and CLEANING:**

### **Resurfacing:**

allnex recommend three options:

- Re-aggregating with Surecote System 500. It offers very good adhesion to the prepared older surface.
- Re-aggregating with Surecote System 500 AR which is a high durability and chemically resistant finish. It offers very good adhesion to the prepared older surface.
- Third option is Nuthane topcoat which offers a monolithic and non-slip coloured finish with no odours.

### **Repairs:**

Can be undertaken with further new Surecote System 500 applied directly.

### **Cleaning:**

A Surecote System 500 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).

## **BONDING NEW TO OLD CONCRETE:**

Prepare the concrete as above.

Apply mixed Surecote System 500 at a rate of 2m<sup>2</sup>/litre

Apply the new concrete whilst the resin is still soft/tacky. Usually within a 2-hour timeframe.

## **DETAILS:**

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

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

## **PRODUCER STATEMENT:**

allnex Construction Products state that Surecote System 500 is compliant with E3 (internal water) and D1 (Access routes / slip resistance wet & dry).

Date: Nov 2019

Replaces: June 2018

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