

# Technical Data Sheet

## Situform Wall cladding & Liner system



### DESCRIPTION:

Situform is a protective laminate system applied in situ to provide a smooth, jointless system, which follows the substrate contours, profiles etc.

Based on the proven Aquakem (Aquaguard 101) epoxy waterproofing and Terratuff topcoat.

- *Aquakem (Aquaguard 101): water-based two-part epoxy polyamide basecoat*
- *Terratuff: solvent-based two-part epoxy topcoat.*

### TYPICAL FEATURES | BENEFITS:

- Tolerant of application to a slightly damp surface.
- Will bond to **green | fresh** concrete - see cautions below.
- May be used in food safe areas.
- Easily cleaned.
- Cured Film is non-toxic.
- Based on the proven Aquakem (Aquaguard 101) epoxy system.
- Chemical, stain, resistant surface for wall and floor coatings.
- May be installed over worn insulated panel.
- Excellent adhesion to properly prepared substrates.
- Resistant to peeling and flaking.
- Complies with food environment regulations.
- Easily repaired and maintained
- Good impact and abrasion resistance.
- Very good abrasion and scuff resistance.

### COLOURS:

Situform is available in Grey N35.

May be tinted to a range of colours in the standard BS5252F, AS2700 and RAL colours (refer to allnex).

### PERFORMANCE DATA:

Minimum application temperature: Air	+10°C
Maximum application relative humidity: Air	85%
In-service temperatures:	-20 to +60°C
Laminate hardness:	DIN-SHORE 65; PENCIL 6H
Hydrostatic pressure resistance; US Federal spec 11-P-001411	Minimum 40 psi (equivalent to 28 metres head of water).
Moisture vapour permeability BS test method 3177:1959	9.4gms, mil.m <sup>2</sup> /24 hours.

### RECOMMENDED USES:

For creating a smooth and easy clean hygienic finish over Masonry | Concrete | Precast | Plywood | Tilt Slab and Insulated Panel in the following:

- Food Storage, Manufacturing & Processing Plants
- Dairy Companies
- Correctional Facilities
- Concrete tanks & bund liners.
- Planters.
- Pharmaceutical
- Chemical Processing
- Sewerage treatment facilities.
- Fibreglass reinforced, exposed floor finishes.
- Silos.

### NOT RECOMMENDED:

- Application below +10°C.
- Application to incorrectly prepared surface.
- Application over actively leaking water.
- Do not apply to structures with excessive joint movement.
- For exposed to UV, exterior decks, roofs etc. Refer: Terraflex system: <http://www.allnexconstruction.com/pdf/Terraflex.pdf?v=1.2>
- Application to unsound substrates.
- Over existing coatings.
- Continuous immersion in strong acid.

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

- Avoid skin contact.
- Provide adequate ventilation.
- Wear safety equipment including clothing.

**SUBSTRATE:**

All substrates shall be stable and solid.

**Concrete:**

This system may be applied to damp concrete and concrete that is greater than 7 days old.

However; it is preferable to allow as long as possible for the concrete to cure and dry. E.g. allow 28 days cure time after the placement of the concrete.

**Concrete Block:**

Concrete Block must be installed to the manufactures specifications and comply with current building codes.

Pointing must be flush finished.

**Fibre Cement Sheet:**

Fibre cement sheet must be a minimum of 9mm with rebated edges that can be stopped to flush the joints.

Fibre cement is loose butted and is to be mechanically fastened by corrosion resistant screws (preferably 30mm 316 stainless screws) at 200mm centres around the perimeter and 300mm centres within the sheets. (All fastenings must be countersunk 0.5mm).

Frame centres should be at a maximum 600mm. Centre nog joists at 1200mm. (Refer to the Manufacturer's installation instructions).

**Plywood Sheet:**

Plywood must comply with AS/NZS2269 for structural plywood and be a minimum 12mm (walls) and 17mm (floors) H3.2 treated CCA (water-based treatment) with a square edge.

Plywood is loose butted and is to be mechanically fastened by corrosion resistant screws (preferably 50mm stainless screws) at 150mm centres around the perimeter and 200mm centres within the sheets. (All fastenings must be countersunk 0.5mm).

Frame centres should be at a maximum 600mm.

Centre nog joists at 1200mm.

**Insulated Panel:**

Refer: allnex Construction Products to allocate a site inspection.

**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 Protective Lining 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.

**PRODUCT PROPERTIES: AQUAKEM LAMINATE SYSTEM**

Pot Life Pot life is based on 100gram samples. Large quantities of mixed epoxy will generate heat and the pot life may be significantly reduced.	20°C ~50%RH	45 minutes
Touch Dry	20°C ~50%RH	3 hours
Hard Dry	20°C ~50%RH	10 hours
Recoat time ~ Minimum ~ Maximum	20°C ~50%RH	60 minutes 18 hours
Light Use	20°C ~50%RH	24 hours
Full Cure	20°C ~50%RH	3 days <b>**Low temperature cure will extend this period**</b>
Laminate Thickness -approximately	1.00mm	
Aquakem (Aquaguard 101) Solids Volume	42%	
Aquakem (Aquaguard 101) Solids Weight	56%	
SG kg/litre	1.25	
Thinning	Not recommended	
Clean Up	Warm soapy water	
Dangerous Good Class ~ Aquakem (Aquaguard 101) Kit ~ Aquakem (Aquaguard 101) Part A ~ Aquakem (Aquaguard 101) Part B	Hazard Class 9   Packing Group III Not Regulated Hazard Class 9   Packing Group II	
Packaging ~ Aquakem (Aquaguard 101) Kit ~ Aquakem (Aquaguard 101) Part A ~ Aquakem (Aquaguard 101) Part B	8 litre 10 litre 10 litre	
Shelf life	12 months from date of manufacture. (After this period consult with allnex)	

**PRODUCT PROPERTIES: SITUFORM TOPCOAT-(Terratuff)**

Pot Life	+20°C ~75%RH	8 hours
Touch Dry	+20°C ~75%RH	3 hours
Hard Dry	+20°C ~75%RH	10 hours
Recoat time ~ Minimum ~ Maximum	+20°C ~75%RH	10 hours 16 hours
Cure Time:	Effectively cured after 48 hrs. Full Cure: 7 days at 20°C	
Viscosity cps	200 - 260	
SG kg/litre	1.25 - 1.40	
Thinning	Not recommended	
Clean Up	Solvent HA	
Dangerous Good Class ~ Terratuff Resin ~ Terratuff Hardener	Hazard Class 3   Packing Group II Hazard Class 3   Packing Group II	
Packaging ~ Terratuff Resin ~ Terratuff Hardener	4 litre Unit   16 litre Unit 3 litre   12 litre 1 litre   4 litre	
Shelf life	12 months from date of manufacture. (After this period consult with allnex)	

**SURFACE PREPARATION:****Concrete | Concrete Block:**

Prepare concrete by mechanical abrasion method to: - **CSP3**. (Concrete Surface Profile Scale - International Concrete Repair Institute)

See technical literature: - [http://www.allnexconstruction.com/pdf/Floor\\_Preperation\\_Requirements.pdf](http://www.allnexconstruction.com/pdf/Floor_Preperation_Requirements.pdf)

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

Do not apply over existing coatings.

Prefill any large divots with allnex K125 and diamond grind to remove any highpoints or contaminants.

**Fibre Cement Sheet:**

All joints must be flushed in accordance with the Manufacturer's instructions.

All screw holes must be filled as per the Manufacturer's instructions.

**Plywood:**

Fill screw holes with allnex Fairing Cream.  
 All joints must be left with a uniform finish.  
 Mechanically sand all areas with 100 grit paper.  
 Install Situform Reinforcement bandage to all plywood joints.

**FLOOR / WALL INTERNAL JUNCTIONS:****Concrete | Fibre-cement sheet:**

Install Covs using either:

- Supascreed cove mix
- Supaset

**Plywood:**

Install Covs using:

- Timber fillets

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

Where required:

STZ prefill system types: See STZ technical literature. [http://www.allnexconstruction.com/pdf/stz\\_prefill.pdf](http://www.allnexconstruction.com/pdf/stz_prefill.pdf)

The falls must be specified pre-tender. (Situform is medium build fibreglass laminate system 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 Situform 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).

**SITUFORM COVERAGE:**

System Stage	Material	Coverage Rates   Usage M <sup>2</sup>
Primer	Aquakem (Aquaguard 101) Resin/Hardener	5 m <sup>2</sup> litre
Resin Body coat	Aquakem (Aquaguard 101) Resin/Hardener	3 m <sup>2</sup> litre
Fibreglass Reinforcement	Chopped Strand Matt ~ 300 gsm	1 m <sup>2</sup>
Resin Body coat	Aquakem (Aquaguard 101) Resin/Hardener	5 m <sup>2</sup> litre
Surfacing Finish	Surfacing Tissue	1 m <sup>2</sup>
Resin Body coat	Aquakem (Aquaguard 101) Resin/Hardener	5 m <sup>2</sup> litre
Terratuff 1 <sup>st</sup> Topcoat	Terratuff Resin/Hardener	8 m <sup>2</sup> litre
Terratuff 2 <sup>nd</sup> Topcoat	Terratuff Resin/Hardener	8 m <sup>2</sup> litre

**SITUFORM (AQUAKEM) MIXING RATIO: *By volume***

Aquakem (Aquaguard 101) Part A	1 part
Aquakem (Aquaguard 101) Part B	1 part

**SITUFORM TOPCOAT (AQUACOLOUR) MIXING RATIO: *By volume***

Terratuff Part A	3 parts
Terratuff Part B	1 part

**\*\*\*\* Note\*\*\*\* Refer Cautions Section**

The mix ratio must not be altered.  
 The mix ratio is the only acceptable formula.  
 Adding more hardener will make the mix softer and it will be uncured.  
 Increased hardener levels will result in a weaker product.

**SITUFORM (Aquakem) MIXING:****Mixing:**

Measure correct quantities and pour into a suitable container.  
 Power mix at low speed (approximately 300rpm) for 3 minutes ensuring both compounds are homogeneously blended, and the colour is uniform.  
 Scrape the pail sides with a long broad-knife and then mix again.  
 Mix slowly to avoid air entrapment.  
 Note: ensure no unmixed materials remain on the sides, rims or lips of the containers.

\*\*\*\*DO NOT THIN\*\*\*\*

## **INSTALLATION:**

### **Primer:**

Roller | Brush

Prime the correctly prepared areas with minimum, one coat of mixed Aquakem (Aquaguard 101).

Maximum coverage 5m<sup>2</sup>/litre/coat.

Allow to cure for 24 hours

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

If left more than 3 days, it must be sanded and re-primed.

### **Laminate Application Method:**

Roller | Brush | Laminating Rollers

Hand lay-up using laminating rollers to exclude air.

Apply evenly by way of roller/brush the resin body-coat across the area to be laid up.

A wet edge must be maintained across the work face to allow the next section of resin to be worked in without showing a ridge.

Install the pre-prepared 300gsm chopped strand matt into the wet resin body-coat.

***The salvage edge of the fibreglass matt must be "teased" prior to installation.***

The fibreglass is to have a 75mm minimum overlap.

The fibreglass matt is to be worked with a "Parsley Cutter" (laminating roller) to bring the resin through the matt thus ensuring a complete "wetting out".

When matt is completely "wetted out" apply more Aquakem (Aquaguard 101) and immediately install the Surfacing tissue and subsequent coats of Aquakem (Aquaguard 101)

Allow to cure.

## **TOPCOAT:**

### **Terratuff mixing method:**

Measure correct quantities and pour into a suitable container. Power mix at low speed (approximately 300rpm) for 2 minutes ensuring both compounds are homogeneously blended, and the colour is uniform. Scrape the pail sides with a long broad-knife and then mix again Mix slowly to avoid air entrapment.

Note: ensure no unmixed materials remain on the sides, rims or lips of the containers.

Allow material to stand for 2-3 minutes prior to use.

### **APPLICATION METHOD:**

Roller | Brush | Conventional Spray | Airless Spray

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

Aquakem (Aquaguard 101) must be fully cured for a minimum of 48 hours prior to the installation of the Terratuff Topcoats.

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

If spraying, care must be taken in cleaning equipment and to avoid "setting" of the Terratuff in equipment if left to stand.

Apply two (2) coats of Terratuff on consecutive days at a spread rate not exceeding 8m<sup>2</sup>/litre/coat

\*\*\*\*Note well\*\*\*\*

If the Laminate system is not correctly sealed with Aquakem (Aquaguard 101) prior to the Terratuff Topcoats, you will increase the required volume of Terratuff material required for the topcoat considerably.

## **MAINTENANCE:**

### **Repairs:**

Chemically clean.

Mechanically abrade surface.

Apply Situform as per "Installation instructions".

## **CLEANING:**

### **Smooth Surface:**

Conventional cleaning procedures are normally adequate to maintain clean and hygienic surface.

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

Ensure all detergent materials, dirt etc. is thoroughly rinsed from the surface following cleaning.

**CAUTION:**

Aquakem (Aquaguard 101) and Terratuff are two-part epoxies that are mixed in the specified ratio. Only this ratio will produce a hard, non-softening product. Adding more hardener (with the aim of making the product cure faster) will not work and will only result in making the product softer. The more hardener that is added, then the softer it will become. No matter how long it is left, it will never harden.

**Only the stated mix ratio will work and exhibit the stated performance data.**

**\*\*\*\*Note well\*\*\*\***

The consequences of having soft Aquakem and or Terratuff Topcoat due to poor mixing may be far reaching and costly to repair. This is a job that must be done once and done right. Many people do not understand the consequences.

Situform will bond to "green concrete" less than 28 days old. The correct surface preparation techniques must be employed in all cases.

**CHEMICAL RESISTANCE CHART:**

Test procedure: ~ Aqueous Solution applied to the surface of test samples. - Solutions are Aqueous unless otherwise stated

Results: ~ Taken after 7 days cure @ +25°C

Test Media	Concentration	Test Media	Concentration	Test Media	Concentration
<b>ACIDS</b>		<b>ALKALIS</b>		<b>PETROCHEMICALS</b>	
Hydrochloric Acid	20%	Caustic Soda	30%	Kerosene	
Sulphuric Acid	30%			Aviation Fuel	
Acetic Acid	5%			Lubricating Oil	
Nitric Acid				Petrol	
Lactic Acid		<b>SOLVENTS</b>		Fuel Oil	
Phosphoric Acid		Toluene			
Tannic Acid				<b>OTHERS</b>	
Lactic Acid		<b>SALT SOLUTION</b>		Hot Water	
Phosphoric Acid		Sodium Chloride	50%	Food Emulsions	
Tannic Acid					
<b>DISINFECTANTS &amp; CLEANERS</b>					
Ammonia Solution	20%				

**Note:**

The table represents a guide only. Variables which may under extreme conditions, influence the chemical or corrosion resistance are:

- Temperature of chemical concentration.
- Intermittent or continuous contact.
- Application in adverse conditions.
- Risks of evaporation from spillage causing concentration to rise adversely.

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

Chemical spillages should be cleaned up immediately.

**FIXING OF PLANT AND MACHINERY:**

Mechanical fixings into the substrate 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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**Allnex Construction products, a Division of Allnex New Zealand Ltd**

Auckland - 14 Industry Road Penrose phone: 095836544. Hamilton - 18 Somerset Street Frankton phone: 07-847-8658  
Wellington - 19A Jamaica Drive Grenada North phone: 04-240-0305. Christchurch - 112 Carlyle Street Sydenham phone: 03-366-6802  
Customer Service: 0508-882-288 [cs.constructionnz@allnex.com](mailto:cs.constructionnz@allnex.com)  
[www.allnexconstruction.com](http://www.allnexconstruction.com)



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