

# Technical Data Sheet

## Situclad WCS Fibre-reinforced protective system **allnex**

### DESCRIPTION:

Situclad WCS 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 Aquacolour topcoat, Situclad WCS is used as a more comprehensive waterproofing and protection system by forming a laminate membrane, it is more durable than straight applied Aquakem (Aquaguard 101).

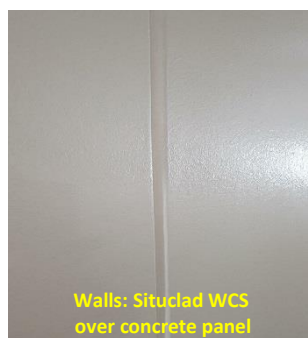
Epoxy waterproofing system reinforced with fibreglass to form a continuous membrane which is fully bonded to the substrate.

**Situclad WCS (Wall & Floor Cladding System) is a NO odour system: - Ideal for working in tanks.**

### TYPICAL FEATURES | BENEFITS:



- Tolerant of application to a slightly damp surface.
- Excellent adhesion to properly prepared substrates.
- Will bond to **green | fresh** concrete - see cautions below.
- Water-based - No solvents.
- Resistant to peeling and flaking.
- 40 plus years of use in New Zealand.
- May be used in food safe areas.
- Complies with food environment regulations.
- Easily cleaned.
- Easily repaired and maintained
- No odour during application.
- Cured Film is non-toxic. – Non-flammable
- Good impact and abrasion resistance.
- Based on the proven Aquakem (Aquaguard 101) epoxy system.
- Very good abrasion and scuff resistance.
- Chemical, stain, graffiti resistant surface for wall and floor coatings.
- Will withstand cleaning with aggressive solvents to remove graffiti, etc.
- May be installed over worn insulated panel.

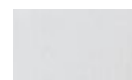
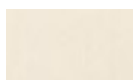


### COLOURS:

Situclad WCS is available in White.

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

The colours shown below are a guide only. **(Other Decorative Topcoats are available: - See Topcoat Variations section)**



**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 wall cladding 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 **Low temperature cure will extend this period**
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: SITUCLAD WCS TOPCOAT-(Aquacolour)**

Pot Life	+20°C ~75%RH	8 hours
Touch Dry	+20°C ~75%RH	4 hours
Hard Dry	+20°C ~75%RH	12 hours
Recoat time ~ Minimum ~ Maximum	+20°C ~75%RH	12 hours 24 hours
Full Cure	+20°C ~75%RH	7 days
Unaffected by water	>48 hours	
SG kg/litre	1.3	
Solid Content	40% mixed	
Thinning	Dilution – 5-10% Clean potable water 5-10% Methylated Spirits for a stronger diluent effect. (Will evaporate faster in colder temperatures)	
Clean Up	Warm water & detergent. Final clean with Methylated Spirits, Kerosene or allnex Solvent HA (flammable)	
Dangerous Good Class ~ Aquacolour Part A ~ Aquacolour Part B	Not Regulated Hazard Class 9   Packing Group III	
Packaging ~ Aquacolour Part A ~ Aquacolour Part B	<u>10 litre Unit</u> 7.1 litre – (8.66kg) 2.9 litre – (4.33kg)	
Shelf life	24 months from date of manufacture ~ Store above +2°C (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\\_Preparation\\_Requirements.pdf](http://www.allnexconstruction.com/pdf/Floor_Preparation_Requirements.pdf)

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

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 Situclad WCS Reinforcement bandage to all plywood joints.

## FLOOR / WALL INTERNAL JUNCTIONS:

### Concrete | Fibre-cement sheet:

Install Coves using either:

- Supascreed cove mix
- Supaset

### Plywood:

Install Coves 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. (Situclad WCS 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 Situclad WCS 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).

## SITUCLAD WCS 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	1.5 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	1.5 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
Aquacolour 1 <sup>st</sup> Topcoat	Aquacolour Resin/Hardener	8 m <sup>2</sup> litre
Aquacolour 2 <sup>nd</sup> Topcoat	Aquacolour Resin/Hardener	8 m <sup>2</sup> litre

## SITUCLAD WCS (AQUAKEM) MIXING RATIO: *By volume*

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

## SITUCLAD WCS TOPCOAT (AQUACOLOUR) MIXING RATIO: *By weight*

Aquacolour Part A	100 parts
Aquacolour Part B	50 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.

#### **SITUCLAD WCS (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:**

##### **Aquacolour 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 Aquacolour Topcoats.

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

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

Apply two (2) coats of Aquacolour 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 Aquacolour Topcoats, you will increase the required volume of Aquacolour material required for the topcoat considerably.

**MAINTENANCE:**

**Repairs:**

Chemically clean.

Mechanically abrade surface.

Apply Situclad WCS 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:**

Situclad WCS and Aquacolour 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 Situclad WCS and or Aquacolour 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.

Situclad WCS 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.

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

Results ~ Taken after 3 weeks exposure

It should be noted that this system is for temporary exposure to these chemicals; not for long term storage.

Test Media	Concentration	Aquacolour	Test Media	Concentration	Aquacolour
<b>ACIDS</b>			<b>ALKALIS</b>		
Hydrochloric Acid	10%	G			
Sulphuric Acid	10%	G	Caustic Soda	10%	G
Acetic Acid	10%	G			
			<b>SOLVENTS</b>		
			MEK		F
			Xylene		
Hydrogen Sulphide	All	E			
<b>PETROCHEMICALS</b>			<b>DISINFECTANTS &amp; CLEANERS</b>		
Kerosene			Detergent (DET 18)	100%	G
			Bleach (2.5% Sod Hyd Cl)		G
			MEKP – M50		G
<b>OTHERS</b>			<b>SALT SOLUTION</b>		
Water Resistance 25°C		E			
Water Resistance 100°C		G	Salt Spray ASTM B117-57T 1000 hours		G

**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)
EF	Evaluate Further	*	Staining May Result

**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.
- Chemical spillages should be cleaned up immediately.

**TOPCOAT VARIATIONS:**

- Surfaglaze Topcoat. – Odour during installation.
- Terraflake – Odour during installation.
- Surecote 200 – No Odour.
- Rapidcote – Slight Odour - Very Rapid Cure.



**Terraflake over Situclad WCS Laminate**

*Walls and floor to provide a seamless system in a "Wet Room"*

**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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