Technical Data Sheet

Situclad ECR Fibre-reinforced protective system

DESCRIPTION:
Situclad ECR is a GRP (glass reinforced plastic) cladding system applied in situ to provide a smooth, jointless, chemical & impact resistant, hygienic surface, which follows the substrate contours, profiles etc.
For use wherever a heavy-duty smooth, seamless, hygienic, easy to clean, gloss finish is required.

Situclad ECR (Extra Chemical Resistance) is a NO odour system:- Ideal for working in tanks.

TYPICAL FEATURES | BENEFITS:
- Good stain and chemical resistance.
- Short application period.
- May be applied to a wide variety of surfaces.
- Excellent adhesion to properly prepared substrates.
- May be used in food safe areas.
- Easily repaired and maintained.
- No odour during application.
- Finish – Gloss to semi-gloss.
- Based on chemical resistant epoxy – Surecote 500 **AR.**
- Very good abrasion and scuff resistance.
- Tolerant of application to a slightly damp surface.
- Resistant to peeling and flaking.
- Complies with Food environment regulations.
- Easily cleaned.
- Cured Film is non-toxic.

PERFORMANCE DATA:

Minimum Application Temperature: Air	$^{+}10°C$
Maximum Application Relative Humidity: Air	80%
In-service temperatures:	$^{-}20$ to $^{+}60°C$
Laminate hardness:	Barcol (934-1) 45
Chemical Resistance:	Resistant to chemical spillage –cured 7 days at $25^{0}C$. Refer: Chemical resistance literature – see below

COLOURS:
Standard colour: Clear.
Special colours: Refer; allnex Construction Products

RECOMMENDED USES:
- Chemical bunds – refer to chemical resistance chart.
- Construction and Mining Industry.
- Food storage and processing facilities.
- Pulp and Paper mills.
- Storage tanks / bunds. - walls and floors
- Commercial kitchen walls
- Chemical and Oil Industry.
- Pharmaceutical filling and processing areas.
- Sewerage treatment plants.
- Silos.

NOT RECOMMENDED:
- Application below $^{+}10^{0}C$.
- Application to green (uncured) concrete. Allow 28 days.
  ** Will tolerate damp concrete**
- Application to unsound substrates.
- Application to incorrectly prepared surface.

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: New

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 the Situclad ECR.
Minimum Compressive Strength at 28 days cure: 25 MPa. (25 N/mm^2)
The moisture content shall be less than: 75% RH.
Have a suitable vapour resistant membrane beneath the concrete.

Concrete: Old

Minimum Compressive Strength: 25 MPa. (25 N/mm^2)
The moisture content shall be less than: 75% RH.
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Concrete Block:

Concrete Block must be installed to the manufactures specifications and comply with current building codes.
Have a moisture content less than: 75% RH.
Pointing must be flushed and cured.

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.
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 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.
All joints must be left with a uniform finish.
Install Situclad ECR Reinforcement bandage to all plywood joints.

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:

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^{0}C ~50%RH	45 minutes
Touch Dry	20^{0}C ~50%RH	3 hours
Hard Dry	20^{0}C ~50%RH	10 hours
Recoat time ~ Minimum ~ Maximum	20^{0}C ~50%RH	60 minutes 18 hours: * Refer note #1 below
Light Use	20^{0}C ~50%RH	24 hours
Full Cure	20^{0}C ~50%RH	3 days **Low temperatures will extend this cure period**
Laminate Thickness -approximately	1.75mm (0.070")	
Thinning	Not recommended	
Clean Up	Solvent HA or Acetone	
Dangerous Good Class ~ Surecote 500 **AR** Resin ~ Surecote 500 **AR** Hardener	Hazard Class 9 | Packing Group III Hazard Class 8 | Packing Group III	
Packaging ~ Surecote 500 **AR** Resin ~ Surecote 500 **AR** Hardener	15 kg 3.75kg	
Shelf life	12 months from date of manufacture. (After this period consult with allnex)	

Note #1
After this time severe abrasion of the surface followed by solvent swabbing with Acetone will be required to ensure satisfactory adhesion.

SURFACE PREPARATION:
Concrete:
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
Remove all concrete curing agents, contaminants and any other material likely to affect the adhesion of the Situclad ECR.
Do not apply over existing coatings.
Prefill any large divots with allnex K125 and diamond grind to remove any highpoints or contaminants.

FLOOR / WALL INTERNAL JUNCTIONS:
Install Coves using:
- Surecote 500 **AR** cove mix

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
The falls must be specified pre-tender. (Situclad ECR 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 ECR 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 ECR COVERAGE:

System Stage	Material	Coverage Rates | Usage M^2
Primer	Supascreed Primer	6 m^2/litre/coat
Resin Body-coat	Surecote 500 **AR** Resin/Hardener	1.2kg
Fibreglass Reinforcement	Chopped Strand Matt ~ 450 gsm	1 m^2
Resin Body-coat	Surecote 500 **AR** Resin/Hardener	0.8kg
Surfacing Finish	Surfacing Tissue	1 m^2
Resin Topcoat	Surecote 500 **AR** Resin/Hardener	0.4kg

SURECOTE 500 AR MIXING RATIO: ***By weight***

Resin - Part A	4 parts
Hardener - 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.

SITUCLAD ECR MIXING:
Mixing:
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.

****DO NOT THIN****

INSTALLATION:
Primer:
Roller | Brush

Prime the correctly prepared 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 6m²/litre/coat.

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 450gsm 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 Situclad 500 **AR** and immediately install the Surfacing tissue and subsequent coats of Situclad 500 **AR**.
Allow to cure.

MAINTENANCE:
Repairs:
Chemically clean.
Mechanically abrade surface.
Solvent wipe with Acetone
Apply Situclad ECR 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 ECR is a two part epoxy that is 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 ECR 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.

CHEMICAL RESISTANCE CHART:

Test procedure ~ Aqueous Solution applied to the surface of test samples.
Observation ~ Checked for chemical attack and hardness throughout the testing period
Results ~ Taken after 3 weeks exposure

Test Media	Concentration	Situclad ECR		Test Media	Concentration	Situclad ECR
ACIDS				**ALKALIS**		
Hydrochloric Acid	10%	M		Potassium Hydroxide	30%	M
Sulphuric Acid	10%	M		Caustic Soda	50%	M
Sulphuric Acid	25%	M				
Acetic Acid	10%	M				
Acetic Acid	50%	D				
Nitric Acid	10%	M		**SOLVENTS**		
Citric Acid	10%	M		Ethanol		M
Lactic Acid	90%	A		Toluene		M
Phosphoric Acid	30%	A		Acetone		A
Hydrogen Sulphide	All	U		Isopropanol		U
PETROCHEMICALS				**DISINFECTANTS & CLEANERS**		
Kerosene		U		Detergent (DET 18)	100%	M
				Bleach (2.5% Sod Hyd Cl)		M
				MEKP – M50		M
OTHERS						
Sugar Syrup	30%	M		**SALT SOLUTION**		
Distilled Water		M		Brine	SAT SOLN 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)
EF	Evaluate Further	*	Staining May Result

Solutions are Aqueous unless otherwise stated

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
www.allnexconstruction.com