Masonry Insulation System

1. Introduction

This specification is for the application of Specialized Construction Products fibreglass mesh reinforced, concrete formwork insulating and finishing system. The Base Mesh coat which is the basis of the plaster system which is applied over a layer of pre-bonded Expanded Polystyrene (EPS), Extruded Polystyrene (XPS), or K5 Thermoset is a specially blended proprietary cement-based plaster. The walls are then finished with a finishing texture chosen from the Specialized/Acratex range of both cement-based texture finishes or acrylic texture finishes and painted with a 100% acrylic paint system. The base plaster that can be easily applied as a single levelling flanking coat 3-4 mm thick over properly prepared polystyrene foam backgrounds to produce a high quality even and true surface prior to a selected finishing plaster being applied. The specially developed plaster mix contains a blended mix of aggregates, cement, proprietary ingredients, and a unique fibre reinforcement which not only relieves curing stresses but also provides an excellent surface key for a variety of conventional plaster finishes.

2. Health & Safety

Avoid contact with eyes and prolonged contact with skin. Wash thoroughly after handling all wet or dry material. In case of eye contact, flush immediately with running water for at least 15 minutes. Consult a physician immediately. Do not take internally. The potential irritant nature of cement dust (in dry powder form or from subsequent cutting of the hardened product) is recognised. Paper dust masks or a respirator must be worn at all times when the product is being mixed. Be sure to provide adequate ventilation when working in enclosed areas. The wet compound is alkaline and prolonged skin contact should be avoided. People with sensitive skin must wear rubber gloves when handling the product. Materials Safety Data Sheets are available on request.

3. Pre-Plastering Requirements

The masonry substrate must be installed in strict accordance with the manufacturer's specifications and recommended installation procedures. The manufacturers required curing time must be allowed after placement of the blocks to ensure all the pointing has completely cured and the walls have stabilised. The finished appearance of the wall is highly dependent on the standard of the wall construction.

All loose or damaged material must be removed by water blasting, sandblasting or mechanical wire brushing and repaired prior to being primed. All surface imperfections such as blowholes, cracks and spalling must all be patched and levelled to required tolerances and smoothness with Specialized plaster materials before the EPS, XPS or K5 substrate is applied.

Decks, balconies, and parapets must have adequate falls and rigidity to prevent water ponding on the finished surface. A minimum fall of 2: 80 is highly recommended. This system must not be used in situations where water may pond. A minimum slope of 10° is required on all sills and copings. It is also not suitable for vehicular traffic or for use below ground.

Particular attention to detail and workmanship must be given to the weatherproofing details relating to flashing and sealing building penetrations or junctions with other building materials. This system is not designed as a waterproofing element for junctions between dissimilar materials. Its job is to provide a means of thermal insulation and an aesthetically pleasing

finish to the exterior envelope of masonry dwellings. All junctions between masonry substrates, poured concrete surfaces and dissimilar materials must be correctly flashed with appropriate metal or uPVC flashings and sealed with MS Sealant.
The MS Sealant must be installed in strict accordance with the manufacturer's requirements and must be left to properly cure prior to plastering.
Construction Joints must be provided according to the brick/block manufacturers design criteria. All construction joints must be in place and must be waterproof prior to the commencement of plastering.
All meter boxes should have an aluminium or lead flashing fixed over the head and must allow water to drain to the outside of the building should water egress from above.

4. Waterproofing

All surfaces to receive an application of Specialized Construction Products Tankit Waterproofing Membrane must be clean and free of debris, dirt and dust, efflorescence, grease, oils, curing agents, cleaning solutions, mould and algae or any other contaminants that may affect adhesion. Painted or glossy surfaces must be specially treated prior to the application of any plaster material, please refer to Specialized Construction Products for specialist advice before you proceed. All cracks that may be the subject to ongoing movement must be correctly repaired and reinforced.
Tilt slab and other precast concrete items should be cleaned with Dulux Acratex 400/4 Tiltwash and left to dry to ensure any mould release agents are removed before the primer is applied. Failing to correctly prepare the substrate, may affect the adhesion of the Tankit and hence the subsequent ability of the Tankit to provide a waterproof barrier.
Where Tankit is being applied over an existing acrylic coating, it is crucial that the previous system is well adhered to the substrate. The existing coating must be well cleaned and checked for adhesion prior to the Tankit being used.
Do not wet down masonry surfaces before priming and do not apply Tankit to surfaces that are wet from rain or overnight dew.

5. Surface Preparation

All nibs, protrusions, and excess mortar on the surface of the blocks or irregularities in the slab must be ground off prior to plastering.
All surfaces to receive an application of EPS, XPS or K5 must be clean and free of debris, dirt and dust, efflorescence, grease, oils, curing agents, cleaning solutions, mould and algae or any other contaminants that may affect adhesion. Painted or glossy surfaces must be specially treated prior to the application of the EPS, XPS or K5 material, please refer to Specialized Construction Products for specialist advice before you proceed.
All cracks that may be the subject to ongoing movement must be correctly repaired and reinforced.
Some smooth, dense concrete surfaces must be slush coated before application of the EPS, XPS or K5 substrate to ensure a suitable bond is created, please refer to Specialized Construction Products for specialist advice before you proceed. Tilt slab and other precast concrete items should be cleaned Dulux Acratex 400/4 Tiltwash to ensure any mould release agents are removed before the plaster is applied. All very porous surfaces should be sealed with an appropriate paint

sealer prior to the application of the EPS, XPS or K5. Failing to correctly prepare the masonry substrate, may affect the adhesion of the EPS, XPS or K5.

6. EPS, XPS or K5 Application

To bond the EPS, XPS or K5 to the masonry substrate mix up Specialized Construction Products fine base coat plaster with the addition of 1 litre of Specialized Construction Products resin per bag. Cut the polystyrene to size and check the fit. Note: When bonding sheets they are very hard to handle, so don't fix sheets bigger than 1.2 x 1.2m. Apply the fine base coat plaster to the back of the sheet with a grooved trowel around the perimeter and in vertical strips every 400mm. Masonry anchors should be placed every 600mm centres to ensure the sheets stay in place while the bonding plaster sets. Bed each sheet/shape back against the wall, keeping a check that the sheets/shapes are flat by using a straight edge across their face. To ensure no thermal bridges are formed keep all the edges closely butted and clear of adhesive plaster.

7. Materials Application

Any EPS, XPS or K5 that has been directly adhered to the concrete or masonry substrate must must be rasped and free of all bond-inhibiting materials, including but not limited to dust, oxidisation, and dirt.

Around the base of the building ensure all lines are straight and level. Trim and adjust where necessary. Use a two-metre straight edge and check the flatness of the polystyrene surfaces. Use a one-metre-long sanding block to sand off any large irregularities and make the polystyrene surfaces level and the corners and edges straight. When sanding is complete, sweep the walls clean of polystyrene swarf.

Only once the polystyrene is entirely flat should of any additional uPVC beading be fixed to the substrate (i.e., uPVC corners and base U-channels). All exposed polystyrene corners and bottom edges must be protected by gluing on the appropriate uPVC section. The beads are glued on with Sika Nailbond PB Adhesive. Apply glue to all contact surfaces.

The instructions for mixing the base coat plaster are clearly spelt out on the bag. Note: During summer, you can add one litre of resin per bag to help the plaster cure better in hot weather.

It is important that each mix stands for approximately 10 minutes and is then re- stirred, and the final consistency adjusted. This allows the thickening agents in the plaster to take effect and stops the brew becoming too thick too quickly. Do not use plaster that has been mixed for more than one hour. The plaster will continue to stiffen slightly over the hour. Thickness is critical - a minimum thickness of 3mm must be achieved with this first coat. Do not force the mesh hard down onto the surface of the polystyrene. The mesh pattern should be "grinning" through, but the mesh itself completely covered with plaster. Apply a 100 to 200mm band of plaster around the corner and embed the overhanging corner mesh. Once embedded scrape away the plaster at the edge of the mesh to ensure there is no plaster ridge there when you join on later. Repeat the process. Mesh must overlap the adjacent drop and plaster coat by at least 30mm. The mesh and plaster coat must cover all polystyrene surfaces including the polystyrene edges around all window reveals and sills. At the corners of all openings, apply a second layer of mesh 100 x 200mm (butterfly) embedded on the diagonal. This greatly reduces the chance of any subsequent cracking at these high stress points.

On-site application is beyond the control of Specialized Construction Products. Therefore, it cannot guarantee workmanship, supervision, aesthetic quality or the correct preparation and application of its products or the substrates to which its products may be applied.

8. Curing

The curing time of plaster system that has been applied to the EPS, XPS or K5 will vary due to ambient temperature, relative humidity, surface temperature, surface porosity, application methods, and/or the thickness of the material. All freshly applied material must be protected from inclement weather for a minimum of 24 hours after application. It will not fully cure for 28 days, if the base coat has had a finish applied over its It is the responsibility of the plaster applicator to determine if the product is cured and/or dry prior to applying any additional coats that may be required or exposing the applied product to rain, snow, dew, and/or any other inclement weather condition that may have a detrimental effect. Although the plaster products that are used for this system contain cement it can be painted after the finish coats have cured for a minimum of 3- 4 days.

9. Finishing Plasters Options over a cement base

Option 1: FLOAT FINISH
A polymer modified cement-based plaster which is polished flat to achieve a fine granular finish.
Option 2: SPANISH FINISH
A polymer-modified, cement-based plaster used to achieve an undulating adobe style finish. This product can be applied in various thicknesses and using a number of different techniques. Before finish coating begins ensure the style of finish that is desired has been correctly communicated and understood by the plasterer. A trial sample is highly recommended.
Option 3: SPRAY TEXTURE
A polymer-modified, cement-based plaster which can be sprayed through a sagola gun to achieve a finely spiked texture finish.
Option 4: FINE SPRAY TEXTURE
A polymer-modified, cement-based plaster which can be sprayed through a hopper gun or a sagola gun to achieve a heavy stucco plaster finish.

10. Finishing Plasters Options over cement or acrylic base

- Acratex 951 Coventry Coarse Acrylic Texture - 15L
- Acratex 951 1mm Super Trowel Acrylic Texture - 15L
- Acratex 951 Sienna Coarse Sand Finish Acrylic Texture - 15L
- Acratex 951 Sienna Natural Acrylic Texture - 15L
- Specialized FlexiFloat - 20kg (This product is a bagged texture and not tintable)
- Specialized FlexiFlat -20kg (This product is a bagged texture and not tintable)

11. PAINT - Dulux Acratex 955 Acrashield Advance

Dulux Acratex 955 Acrashield Advance acrylic-based paint that has been specially formulated for use over cement-based plasters. Cement based surfaces must be coated with Acratex 501/10 Green Render Sealer followed by 2 coats of Dulux Acratex 955 Acrashield Advance tinted to the selected colour and applied by brush and roller at a spread rate of approximately 6m2. Other

paint systems are not covered by this specification sheet and Specialized Construction Products will not warrant the use or suitability of alternative paint systems over the surface of its plaster finishes. The Dulux Acratex 501/10 Green Render Sealer should be applied prior to a Dulux Acratex Acrylic texture being applied over a cement based base coat.
The chosen paint system must have a Light Reflective Value (LRV) of no less than 25%. If a dark colour has been specified below the 25% LRV then a full acrylic texture system should be used.

12. Cleaning

Cleaning may be accomplished with water immediately after use. Clean the whisk and the bucket between mixes and discard the cleaning water. Remove splatter or spills with water before the material sets.

13. Plaster Storage

In bagged form this product must be stored in a dry area, off the floor on a timber pallet or timber dunnage and it must be protected from the weather and from mechanical damage. Rotate the stock to ensure that the oldest material is used first. Plaster stock that is older than six months should be discarded.

14. Limitations

DO NOT apply any plaster materials when the ambient or surface temperature is below 4ºC or above 30˚C or will be in that range for the 24-hour period after application. When hot, dry, or windy conditions exist, moist curing and protection must be provided. Material that is allowed to freeze or material that dries too quickly may suffer irreparable damage.
DO NOT add any other materials to the plasters used in this system or deviate from the mixing or application procedures outlined in any of Specialized Construction Product's technical data sheets without written approval from Specialized Constructions Products.
DO NOT apply any plaster material unless the substrate has been properly cleaned and prepared. See Surface Preparation above.
DO NOT add any more water than prescribed by the technical data sheet for this product.
DO NOT wet the wall prior to the application of this material.
DO NOT reactivate any plaster with more water once it has begun to set.
DO NOT mix more plaster than you can use in 45 minutes

NOTE: Failure to follow the manufacturers written specifications could result in the following but not limited to spalling, cracking, peeling, chipping, delamination, discolouration, wash off, and overall system failure.

15. Maintenance

The wall cladding system applied over the Tankit should be cleaned, at least annually, by washing with clean water to remove dirt and to maintain the finish appearance. Grime may be removed with warm water and detergent.
Plastered walls should be recoated with Dulux Acratex 955 Acrashield Advance paint

system at 5 to 8 yearly intervals or sooner if required to maintain watertightness.

Regular checks, at least annually, must be made of the system to ensure that the weather resistant surface coating is maintained, and that the sealant, flashings, and other joints continue to perform their function and do not allow water to penetrate. Failure to correctly maintain the system may void any long-term warranties offered with the system. Any accidental damage to the cladding must be repaired immediately using Specialized Construction Products materials.

16. Warranty

The recommendations, suggestions, statements, and technical data provided by Specialized Construction Products are based on the best current knowledge available and are given for information purposes only without any responsibility for their use. It is expressly understood and agreed that the buyer's sole and exclusive remedy shall be the replacement of defective products, and under no circumstance, shall Specialized Construction Products be liable for incidental or consequential damages. Specialized Construction Products neither assumes, nor authorizes, any others to assume for it any liability with respect to furnishing of the product. Handling and use of the products are beyond the control of Specialized Construction Products, therefore, no warranty is made, expressed or implied, as to the results or on-site quality that can be obtained from the use of the product.

Specialized Construction Products guarantees this product is free from manufacturing defects and will perform to its specification for 10 years from the date of application if application occurs within the products stated shelf life.

Material Guarantee Period

15 years from date of practical completion to plastering.

Workmanship Guarantee Period

5 years from date of practical completion to plastering.

Technical Assistance

Assistance and information are available by calling Specialized Construction Products on (09) 414 4499 or 0800 800 79 or by e-mail at info@specialized.co.nz.