

EZpanel Installation Guide including EZpanel Fire Wall Solution

1. Introduction

Specialized Construction Products EZpanel Autoclaved Aerated Concrete Panel System. The EZpanel system is made up of 50mm Autoclaved Aerated Concrete Panels that are fixed to timber or steel framing over the surface of a 20mm or a 40mm cavity. The backing substrate is then over coated and reinforced with a range of specially blended proprietary cement- or acrylic-based plasters before the walls are finished with a chosen finishing plaster and coated with Dulux Acrashield Advance acrylic paint system.

The EZpanel System has been tested and appraised for use throughout New Zealand. (BRANZ Appraisal No. 649)

This Manual has been set out as near as possible to the actual construction sequence. Preparation, fixing the EZpanel to various types of framing and backgrounds, sealing the joinery and masking out, preparation of EZpanel prior to plastering and finally the plaster techniques and sequences. This guide must be read in conjunction with the detail data sheets for the EZpanel System.

All the PVC flashings, fibreglass mesh, resin, fixings, and plaster components used for the EZpanel System must be supplied by Specialized Construction Products or one of its certified distributors.

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. Framing Set Out (Timber or Steel)

Timber framing must comply with NZS 3604 for buildings or parts of buildings within the scope limitations of NZS 3604.

Buildings or parts of buildings outside the scope of NZS 3604 must be to a specific design in accordance with NZS 3603 and AS/NZS 1170. In all cases studs must be set out at 600mm maximum centres. Dwangs/nogs must be flush fitted at maximum 800mm centres. All soffit junctions, openings, wall/roof junctions and foundation details must have support for the sheet edges. Timber framing must have a maximum moisture content of 24% at the time cladding commences. For steel framing the minimum framing specification is 'C' section studs and nogs of overall section size 75mm web and 32mm flange. Steel thickness must be a minimum of 0.75mm.

4. Building Wrap

All external walls of buildings must have barriers to airflow in the form of interior linings with all joints stopped for wind zones up to and including Very High. Unlined gables and walls must incorporate a rigid sheathing or an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. For attached garages, wall underlays must be selected in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.4. Flexible wall underlay shall be building paper complying with NZBC Acceptable Solution E2/AS1 Table 23, or breather-type membranes covered by a valid BRANZ Appraisal for use as wall underlays. Rigid wall underlay shall be plywood or fibre cement sheet complying with NZBC Acceptable Solution E2/AS1 Table 23, or rigid sheathing covered by a valid BRANZ Appraisal for use as rigid air barrier systems. The selected building underlay and flexible sill and jamb tape system must be installed by the building contractor in accordance with the underlay and tape manufacturer's instructions prior to the installation of the cavity battens and the rest of the EZpanel System. Flexible building underlay must be installed horizontally and be continuous around corners. Underlay must be lapped 75mm minimum at horizontal joints and 150mm minimum over studs at vertical joints. Generic rigid sheathing materials must be installed in accordance with NZBC Acceptable Solution E2/AS1 and be overlaid with a flexible wall underlay.

Proprietary systems shall be installed in accordance with the manufacturer's instructions. Particular attention must be paid to the installation of the building underlay and sill and jamb tapes around window and door openings to ensure a continuous seal is achieved and all exposed wall framing in the opening is protected. Where studs are at greater than 450 mm centres and a flexible wall underlay is being used, a building underlay support must be installed over the underlay at maximum 300mm centres horizontally.

5. Head Flashings

Proprietary uPVC head flashings with minimum ventilation openings of 1000mm² per lineal metre must be installed over all window heads and door openings. If proprietary uPVC head flashings cannot be used, an acceptable alternative flashing must be provided. Please contact Specialized Construction Products for advice.

6. Flashing in General

Joists designed to carry decks need to have a continuous flashing fitted before the EZpanel is fixed. Check if there are any special back-flashings required where the EZpanel joins another substrate or curtain wall construction

7. Roofing

Where areas over roofs need to be plastered, the roof/wall flashing must be installed prior to the commencement of cladding.

8. Pipes & Meter Boxes

It is critical that pipes are flashed appropriately in accordance with E2/AS1 fig 68. All pipes must have the building underlay turned to the outside of the building and have the building underlay taped to the outside of the pipe. All pipes must have a downward rake of a minimum of 5° and

must be sealed in place using MS Sealant or another approved equivalent both before plastering and after the installation of the base coat.

All meter boxes must be installed according to the detailed drawings provided with the EZpanel system. A polystyrene wedge must be placed and sealed with a waterproofing membrane onto the top of the meter box and must be able to drain water unimpeded into the cavity behind the cladding.

Particular attention to detail and workmanship must be given to the weatherproofing details contained in the technical literature relating to flashing and sealing building penetrations or junctions with other building materials. All junctions between the EZpanel substrate and dissimilar materials must be correctly flashed and sealed with MS Sealant or another approved equivalent. The sealant must be installed in strict accordance with the manufacturer's requirements and must be left to properly cure prior to plastering.

9 Scaffolding

Don't accept second best. You need a continuous freestanding scaffold at least 300mm clear of the framing. Movable frames can be used, but you need enough to complete one whole wall at one time.

10 Preparation of Masonry and Concrete Surfaces (Direct Fix Applications)

Note: This application is outside the scope of the BRANZ Appraisal.

All nibs, protrusions, and excess mortar on the surface of the bricks/blocks or irregularities in the slab must be ground off prior to plastering.

All surfaces to receive a direct bonded application of the EZpanel System 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.

Some smooth, dense concrete surfaces must be slush coated before the application of the EZpanel bonding plaster to ensure suitable adhesion is created, please refer to Specialized Construction Products for specialist advice before you proceed. Tilt slab and other precast concrete items should be cleaned with Dulux Acratex 400/4 Tilt-Wash to ensure any mould release agents are removed before the plaster is applied. All very porous surfaces should be sealed with Dulux Acratex 501/10 Green Render Sealer prior to the application of the bonding plaster. Failing to correctly prepare the masonry substrate, may affect the aesthetic appearance of the finished wall.

Do not wet down masonry surfaces before plastering and do not apply base coat plaster to surfaces that are wet from rain or overnight dew.

11 EZpanel Battens

20mm Cavity – EZPanel battens for a 20mm cavity installation are manufactured from Ultra High Density (Class UHD) expanded polystyrene with an approximate density of 28kg/m³ and measure 21mm X 50mm.

40mm Cavity – EZpanel battens for a 40mm cavity installation are manufactured from either; (a) Ultra High Density (class UHD) expanded polystyrene with an approximate density of 28kg/m³ measuring 41mm X 50mm and are fixed with glue or 50mm galvanised flat head nails or (b) 40 X 40 X 200 H3.2 timber batten blocks with a minimum slope of 15 degrees on the top edge, fixed with two 75mm galvanised ring shank nails.

All battens must be fixed to the framing over the surface of the chosen building underlay in accordance with the batten layout shown in the detail data sheets. Additional vertical battens may be required at internal and external corners and openings. At the soffit the airflow must be blocked off with a continuous horizontal batten and gables must be lined or incorporate an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. Non-rigid air barriers must have an air resistance of >0.1MN s/m³. Where rigid sheathings are used, the fixing length must be increased by a minimum of the thickness of the sheathing. Horizontal battens must be a maximum length of 100mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.2 (f) and must be fixed into place on all nogs/dwangs where required for fixing with a minimum of a 5-degree angle on the top edge. The fewer horizontal battens that are used the better.

12. EZpanel battens for Firewall Solutions

EZpanel battens for fire walls must be 50mm wide by 20mm thick H3.2 timber battens fixed to studs with a 50mm galvanised clout.

EZpanel's are then fixed through the timber battens with a 100mm long class-4 galvanised or Grade 302 stainless steel screws that have a head size of 14mm.

13. Installing the Specialized uPVC flashing kit with Cavity Jamb Flashings

Begin by marking and cutting your sill flashing so that it extends approximately 4-5mm past either end of the aluminium joinery (i.e., overall, approximately 8-10mm wider than the window). Once the sill is cut, wipe the left-hand end with PVC solvent welding cement and slide it onto the prongs of the corner socket. Next wipe the right-hand end with PVC solvent welding cement and slide on the right-hand corner socket. Slide the sill and socket combo into place under the window flange and staple it into place at the corner socket.

Next cut your jamb flashings 25mm longer than the length of the window and cut the capillary lip off the top so that the top edge of the capillary lip will finish flush with the top of the joinery when it is slid into place (i.e., overall, the jamb should protrude 40mm above the top of the window). Once the jambs have been cut and test fitted, choose one side, and wipe the top of the corner socket with PVC solvent welding cement. Immediately tuck the capillary lip of the jamb flashing behind the flange of the joinery and slide the jamb down into place onto the top of the socket and then repeat the same set of instructions for the other side.

When the jambs are in place, cut your head flashing approximately 6mm wider than the joinery. Remove tape from head flashing adhesive strip and install to joinery head, staple rubber back to building wrap. Using MS Sealant, seal the ends of the head flashing to the jamb flashing. Install head flashing tape over the head flashing building wrap junction and extend the tape on to

jamb flashing on either side to form a stop end. Ensure the head flashing tape laps on to the jamb flashings by 40mm to form an adequate stop end.

Once all the flashings are in place seal the jamb flashing to the joinery in the 5mm gap provided by the small block on the jamb flashing and then seal the corner socket to sill flashing. You must also run a bead of sealant along under the joinery to seal the vulnerable gap where the sill flashing meets the joinery. Where joinery weep holes are on the bottom of the joinery rather than the front, do not seal to the sill where the weep holes are situated. (I.e., leave a 20mm gap in the sealant).

When installing the female portion of the head flashing, ensure you seal the junction between the two flashings after installed and before plastering and painting.

14. Installing the Specialized uPVC flashing kit with Sticky Jamb Flashings

Begin by marking and cutting your sill flashing so that it extends approximately 4-5mm past either end of the aluminium joinery (i.e., overall, approximately 8-10mm wider than the window). Once the sill is cut, wipe the left-hand end with PVC solvent welding cement and slide it onto the prongs of the corner socket. Next wipe the right-hand end with PVC solvent welding cement and slide on the right-hand corner socket. Next cut your sticky jamb flashings 25mm longer than the length of the window and cut the capillary lip off the top so that the top edge of the capillary lip will finish flush with the top of the joinery when it is slid into place (i.e., overall, the sticky jamb should protrude 40mm above the top of the window). Once the sticky jambs have been cut and test fitted, choose one side and remove the sticky cover tape. Immediately tuck the capillary lip of the jamb flashing behind the flange of the joinery and install the sticky jamb flashing with the bottom starting 15mm up from the bottom of the joinery and then repeat the same set of instructions for the other side. Next wipe PVC solvent welding cement on both spikes of the corner socket of the sill and socket combo and slide the spikes into the bottom of the sticky jamb flashings thus installing the sill and corner socket combo into position under the window flange sill. When the sticky jambs and sills are in place, cut your head flashing approximately 6mm wider than the joinery. Remove tape from head flashing adhesive strip and install to joinery head, staple rubber back to building wrap. Install an EZpanel batten to the side of the sticky jamb flashing to provide support for forming a stop end. Using MS Sealant, seal the ends of the head flashing to the sticky jamb flashing. Install head flashing tape over the head flashing building wrap junction and extend the tape on to the sticky jamb flashing on either side to form a stop end. Ensure the head flashing tape laps on to the sticky jamb flashings by a 40mm to form an adequate stop end.

Once all the flashings are in place seal the jamb flashing to the joinery in the 5mm gap provided by the small block on the jamb flashing and then seal the corner socket to sill flashing. You must also run a bead of sealant along under the joinery to seal the vulnerable gap where the sill flashing meets the joinery. Where joinery weep holes are on the bottom of the joinery rather than the front, do not seal to the sill where the weep holes are situated. (I.e., leave a 20mm gap in the sealant).

(When installing the female portion of the head flashing, ensure you seal the junction between the two flashings after installed and before plastering and painting). Sealing around windows is one of the most critical operations for the success of the EZpanel system. The data sheets detail in pictorial terms how the instruction above should be carried out. Follow these details explicitly. Basic principles to apply when sealing your windows:

- Don't be mean with your application of sealant or pipe cement. All beads of sealant must be 5mm across.

- The sealant has to have a reasonable area to seal against so make sure the background is clean and dry.
- Always lightly tool or spread your sealant into place with your finger (Must wear gloves)

15. Fitting Sill and Jamb Flashings

The use of the EZpanel uPVC sill and uPVC Jamb flashings is **MANDATORY**. It is also **MANDATORY** that the sill and jamb flashings are joined in the corner with a Specialized Construction Products EZpanel corner socket.

16. Soffits, Gable Ends and Unlined Walls

Soffits shall be fixed into place before the cladding is installed and allowance made to close off the cavity with framing or battens to stop airflow into the roof space. After the mesh and plaster system has been completed a 5mm bead of MS Sealant or 'no more gaps' should be installed at the soffit EZpanel intersection. In the case of reverse raking soffits, a flashing or piece of Protecto EIFS tape shall be provided in accordance with the details shown in the technical literature.

To ensure the EZpanel substrate is not affected by timber shrinkage in areas that are not traditionally lined (e.g., gable ends), it is highly recommended that the internal walls of these areas are adequately braced with a thin sheet of plywood or an alternative bracing material. Alternatively, the timber in these areas must have a moisture content of no greater than 18% and must remain that way throughout the entire construction process.

17. Fixing the EZpanel

The panels are butt jointed except at external corners where one panel overlaps the other to form a straight finish. The EZpanel must be supported at fixing locations with cavity spacers a maximum of 100mm long in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.2(f). Each additional layer of panels must be installed so that the panel joints are staggered by a minimum of 150mm. Anti-corrosion paint must be applied to all exposed reinforcing in the panels. All panels must have their edges and their ends buttered with EZFix PU glue as they are being installed. The edges of all the EZpanel panels must be free of all dust and debris (preferably blown down with compressed air) and should be sprayed down with a mist of water immediately before the glue is applied. The glue should be laid in a bead approximately 6-8mm in width before the next panel is laid onto its edge. This practice should be done as quickly as possible to ensure the glue remains as pliable as possible to aid in the adhesion of the panels. Care must be taken when applying the glue to ensure it does not ooze either into the cavity or onto the outside of the dwelling. Once the panels have been joined and screwed into place any glue excess that oozes out of the joints between the panels should be wiped off or cut from the surface before it has fully cured. The glue must be allowed to dry before the application of the mesh coat. Care should be taken to carefully cut any irregular shaped holes that may be required. A jigsaw with a steel tooth blade is ideal for this purpose. It is not acceptable to simply cut a square hole for a round outlet and then assume the remaining gap will be plugged with plaster. Gaps and holes in and between the panels must only ever be filled with Ezstop Plaster and must not be filled with expanding foam. The differential thermal characteristics of the expanding foam and the AAC panels will generate a weak point in the

system that can be susceptible to thermal cracking. At the base of walls, the finished level of the EZpanel must be at least 50mm below the supporting framing. Additional framing maybe required at soffits, internal and external corners and window and door openings for the support and fixing of sheet edges. As edge fixing is not required for EZpanel control joints can be created off stud and off nog.

EZpanel fixings are a minimum of 50mm from the edge of the panel it is there for recommended that EZpanel walls are a minimum of 100mm wide.

18. Construction joints must be provided as follows:

Vertical control joints – at maximum 8m centres; aligned with any control joint in the structural framing, or where the system abuts different cladding types.

Horizontal control joints – at maximum 6m centres and at inter-storey floor levels where unseasoned timber floor joists are used. Construction joint details are provided in the drawings provided with the system. Inter-storey drained joints must be provided for walls over 2 stories or maximum 7m in height in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph .1.4. Inter-storey junctions must be constructed in accordance with the technical literature. Care should be taken with the chosen placement of control joints. If placing control joints directly above and below the corners of joinery in the EZpanel system where multi-faceted joints between the various uPVC extrusions exist, care should be taken to ensure there is no water ingress if there is excessive movement or the joint is not maintained.

The bottom edges of the EZpanel can either be capped with a 50mm High Back U-Channel which is attached to the bottom plate of the dwelling prior application or with a 50mm lipped base bead once they have been fixed into place and trimmed as may be necessary.

19. Timber Framing

There are five categories listed in NZS 3604: Low, Medium, High, Very High, and Extra High. The “Wind Zone” for the job must be clearly understood before the application of any EZpanel.

20. Fixing over EPS battens

EZpanel panels are fixed through the polystyrene cavity battens and spacers to the studs with 100mm or 120mm long Class 4 galvanised or Grade 302 stainless steel screws that have a head size of 14mm. Two screws should be put into each stud per panel.

Refer to the table 1 for fixing centres.

Table 1: EZpanel fixing centres

Wind Zone / Wind Pressure	Fixing Centres (mm) to studs ¹
NZS 3604 Wind Zones up to and including Extra High and specific design wind pressures up to design differential 2.5 kPa ULS with studs at maximum 600 mm centres	300

1. Fixings to be positioned 150 mm in from the panel edge giving an overall fixing layout of 300 mm vertical centres.

21. Fixing over timber batten blocks

For timber framed buildings, installations in NZS3604 Wind Zones up to, and including, 'Extra High' and specific design wind pressures up to and including design differential 2.5kPa ULS, the timber battens/ blocks must be fixed to the timber framing with two 75mm long galvanised or stainless-steel ring-shank nails. The battens are fixed to the studs at maximum 600mm horizontal centres (stud centres), and at maximum 600mm vertical centres (at all horizontal joints between the EZpanel). Additional battens may be required at corners and around openings. The EZpanel's are fixed to the battens with 10g x 75mm long, countersunk head Class 4 galvanised screws (Grade 302 Stainless in sea spray zones). The screws must be positioned 50mm minimum from the edge of the panel and the fixing heads should finish 5mm below the surface of the panel. The need to screw off at 200mm centres on bottom plates is not required for timber battens. However, if more fixing is preferred this can easily be achieved by correctly positioning additional timber batten blocks.

22. Steel Framing

The same fixing centres apply as for timber framing. Use Specialized Construction Products self-drilling 100mm long AS 3566 Corrosion Class 4 self-drilling screws with a head diameter of 14mm and a shank diameter of 5.1mm in NZS 3604 defined Exposure Zones B, C and D. EPS battens only for steel frame. 40mm polystyrene battens must only be used in situations where the bottom edge of the sheet is fully supported by a rebate in the slab or an appropriate weight bearing lintel.

23. Concrete & Masonry

(Note: This application is outside the scope of the BRANZ Appraisal.)

To bond EZpanel to masonry surfaces mix up Specialized Construction Products Fine Mesh Coat plaster with the addition of 1 litre of Specialized Construction Products resin per bag. Cut the EZpanel to size and check the fit. All the EZpanel is to receive a coat of Fine Mesh Coat must be properly sealed prior to the application of the plaster.

To seal the panel a mix of 2 parts water to 1-part Specialized Resin must be painted over the surface and allowed to dry before bonding commences. Failing to correctly prepare and seal the aerated concrete substrate may cause delamination or failure in the system. Once sealed apply the Fine Mesh Coat plaster to the back of the sheet with a grooved trowel around the perimeter and in vertical strips every 400mm. If there isn't a rebate in the concrete slab, EZpanel masonry anchors must be installed at 600 centres to hold the sheets in place while the plaster is drying and to provide a mechanical fixing for the EZpanel.

Bed each sheet back against the wall, keeping a check that the sheets 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.

24. Finishing the EZpanel

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 EZpanel surfaces. Use a Durarasp to sand off any large irregularities or Specialized 'Ezstop' plaster to fill any large hollows in the surface of the EZpanel to ensure the surfaces are level and the corners and edges are straight. When sanding and/or skimming is complete, sweep the walls clean of any loose material or dust.

Only once you are satisfied with the flatness of the EZpanel and the lines of the edges, fix any additional uPVC beading (i.e., uPVC corners and base U-channels) and seal around the perimeter (i.e., under the soffit).

25. Fixing the PVC Beads

All exposed EZpanel corners and bottom edges must be protected by gluing on the appropriate uPVC section. Your detail drawings show what bead goes where.

The beads are glued on with Maxilam

PB Adhesive. Apply glue to all contact surfaces. With the cartridge glue, slide each PVC bead along the EZpanel edge to spread the glue, pull away slightly for 20 seconds, and then slide into place. This spreading of the glue and allowing a few seconds for the solvents to "flash off" is very important. If you don't, the bead can come unstuck. Be careful not to cover the drainage holes punched in the base extrusions with glue.

26. Masking

Careful masking of windows, doors, roofing, decks, and any other areas where plaster overspray or plaster droppings may occur is critical. Don't be mean with your protection work as it is a very costly exercise to replace roof areas and glazing because your masking wasn't up to the job. Use PVC or vinyl tape for masking, wet strength masking paper or preferably plastic sheet material.

- Mask out windows or doors completely to the edge of the aluminium. This will provide a nice finishing line for the 5mm sealant detail. Mask all other areas 5mm away from the edge of the EZpanel to allow for plaster build-up. Use PVC, cloth or vinyl tape around the perimeter.
- Don't be tempted to use the paper-backed masking tape where it will get plastered over. The tape softens and falls off.
- After the mesh/plaster coat or subsequent base coats (not the final texture coat) remove excess plaster by running your finger around the edge masking tape, and then clean the wet plaster edge with a damp paint brush. This ensures the masking tape isn't buried under hard plaster.

27. Stopping Up

After the EZpanel has been sanded flat and cleaned down, the uPVC flashings are in place, the windows are sealed, and all the masking is complete, all surfaces that are to be plastered must be sealed using EZpanel sealer. Using a Hawke and trowel, or broad knife and EZstop plaster; fill all the screw head holes, stop up and level out the edges of all PVC beading and fill in any remaining out of level areas of sheet joints. It is important not to "over-stop" screw holes or joints. Don't leave thick edges of plaster because they will "grin through" the finished work.

28. Sealing the Substrate

The surface of the EZpanel's must be properly sealed prior to the application of any plaster. To seal the EZpanel's, apply one good coat of undiluted Specialized EZpanel sealer over the entire surface of the dwelling and allow it too completely dry before plastering commences. EZpanel sealer can be applied with a pump-up sprayer, long nap roller or wide paint brush at a spread rate of 10-12m² per litre. Failing to correctly prepare and seal the surface of the aerated concrete panels may cause delamination, chalking or failure in the base coat.

29. EZpanel Plaster Preparation

The instructions for mixing 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.

If you are spraying fine base coat plaster to provide a textured finish it is acceptable to add small amounts of water to maintain a regular consistency. In fact, if you don't keep the plaster mix adjusted with a little water every now and then, your texture coat will vary. Clean your hopper gun, stirrer, and bins between mixes. This will stop you getting contamination in fresh mixes and will keep your gun spraying evenly. EZpanel Base Coat plaster is usually trowel applied with a long 20" x 4" or 20" x 5" steel trowel. The large trowel ensures the first coat of plaster can't be squeezed out too thin.

- Start at the corner of a wall. Check all masking is done and drop cloths are in place. Plaster a full height section of wall about one and a half metres wide (the width of the mesh). You are aiming for 3mm thickness with this first coat.
- Cut a length (drop) of mesh slightly longer than the wall area to be covered. Place the mesh against the wet plaster at the top of the EZpanel. The outer corner edge of the mesh must be 100 to 200mm past the corner of the wall.
- Wipe the mesh very lightly at first into the plaster, starting at the middle and working out. Make sure there are no bubbles or wrinkles in the mesh. Once the mesh is flat against the plaster, apply an even trowel pressure and embed the mesh just below the surface of the plaster. Do not force the mesh hard down onto the surface of the EZpanel. 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. Drops of hard mesh do not have to overlap but should be tightly butt joined. If the mesh isn't going to be overlapped any butt join that is created must offset any vertical join in the panels by a minimum of 150mm. The mesh and plaster

coat must cover all EZpanel surfaces including the EZpanel 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.

WARNING - Only acrylic textures should be applied over Powaflex acrylic system.

30. Plaster & Mesh Coat

The areas around all penetrations should be completed using either EZpanel Base Coat or Fine Mesh Coat to bed soft flexible 160g/m² alkali resistant mesh for the cement-based system or Powaflex for the Acrylic system. A piece of soft mesh must be used to reinforce the sill, jamb, and head flashing onto the surface of the panels and in the corner of any penetration where the sills and jambs meet. Make sure the plaster is scraped hard back to the EZpanel on the outer edges of the mesh. Once all the window reveals, parapet tops and backs, bottom edges and other awkward areas have been completed using the soft flexible narrow mesh, all the flat areas of wall should be done using a 160g/m² alkali resistant hard mesh combined with EZpanel Base Coat plaster for the cement-based system or Powaflex for the Acrylic system.

31. Finishing Texture Options

There are ten finishing options once the EZpanel base coat plaster and mesh have been applied:

Option 1: Stucco Texture

Each 20kg bag of Fine base coat plaster is mixed with approximately 5 litres of clean drinking water. Place all the water for your plaster mix into a clean bucket and while stirring with a powered whisk, add the 20kg bag of plaster and mix to an even consistency. Let the mix stand for 5 minutes and give it a quick restir before application and adjust the final consistency if it is necessary.

The object is to spray on a “wet” second coat of plaster 1 to 2mm thick that will flow together to form a solid flat looking texture coat. The technique could be likened to spray painting where you move on once you have achieved a “wet” finish. Fine base coat plaster mixed wetter than for a mesh coat, sprayed through a hopper gun with a 9mm tip is best for this type of texture. Once the first spray coat is starting to “tack-off” or going grey dry, you can start to apply the final texture coat. The plaster mix for this third and final coat is about the same as for the mesh coat or slightly stiffer and is known as a “flick coat”. The object is to have a plaster mix that won’t run together like the previous coat. Use a 6mm nozzle.

The final texture coat is only meant to be a quick flick. The “flick-coat” will even out any discrepancies and provide a uniform texture finish. You will only use approximately 20% of the amount of plaster you used to do your first coat of spray texture. Spray part of this final texture in horizontal bands and part in vertical bands to ensure a uniform even finish. Do not stay too long in one area, as the texture coat will flow together, causing patchiness.

Always texture the external and internal corners first before doing the adjacent large wall areas. It is also good practice to spray the reveals around windows from the inside out and then fill in the areas of wall between these places.

A stucco spray texture must be finished with one coat of Dulux Acratex 501/10 Green Render Sealer and two coats of 955 Acrashield Advance acrylic paint exterior paint system in accordance with the paint specification.

Option 2: Float Finish

Float Finish is a polymer modified cement-based plaster which is polished flat to achieve a fine granular finish. The smooth plaster will not cover up background imperfections, particularly when walls are subject to side lighting at certain times of the day.

Each 20kg bag of Float Finish is mixed with approximately 5 litres of clean drinking water. Place all the water for your plaster mix into a clean bucket and while stirring with a powered whisk, add the 20kg bag of plaster and mix to an even consistency. Let the mix stand for 5 minutes and give it a quick restir before application and adjust the final consistency if it is necessary.

On large walls float finish should be applied by two or more people to ensure a wet edge is maintained. Float finish must be applied in two coats to ensure an even texture is achieved. Begin by trowelling on one tight coat of the float finish plaster with a large steel trowel using the aggregate in the plaster to establish the thickness. Once the first coat has dried, trowel on another coat of the same material (mixed to a slightly thinner consistency) over its surface. As soon as this coat has been laid down with the steel trowel flat, begin polishing its surface with a hard plastic float in a circular motion. This will cut the surface of the wall flat. Regularly clean the excess plaster off the plastic float with a broad knife to reduce the potential for swirl marks. If the plastic float is picking up too much material or is leaving swirl marks on the surface, this indicates that the plaster has not been laid on tight enough with the steel trowel. Finish with a gentle polish of the surface with the plastic float to minimise any slight swirl marks or surface irregularities. Every now and again stand back a couple of metres from the wall and inspect your work to ensure an even finish is being achieved.

Float finish can either be left as it has been finished with the plastic float or while it is still wet (but firm to touch), normally only 5 minutes after application, it can be polished with a damp sponge to close the pores

in the texture. Polishing the surface of the walls with a sponge will also remove a small amount of the fines in the plaster giving the wall a grainy look.

Float Finish must be finished with one coat of Acratex 501/10 Green Render Sealer followed by two coats of 955 Acrashield Advance acrylic paint system in accordance with the paint specification.

Option 3: Spanish Finish

Spanish Finish is 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.

Each 20kg bag of Spanish Finish is mixed with approximately 5 litres of clean drinking water. Once you have established how much water gives you the consistency you want, maintain this measured amount of water for the rest of your mixes. Place all the water for your plaster mix into a clean bucket and while stirring with a powered whisk, add the 20kg bag of plaster and mix to an even consistency. Let the mix stand for 5 minutes and give it a quick restir before application and adjust the final consistency if it is necessary.

The finished thickness of the Spanish Finish must be between 2 to 10mm. To achieve an uneven application of the Spanish finish, use a short steel trowel and apply the plaster in a random fashion using a good amount pressure. Avoid excessive movement of the plaster under the trowel once it has been applied to the wall, otherwise you run the risk of delamination. Allow a little time for the plaster to

'suck off' and then polish all the sharp marks out of the surface using a damp sponge. If a very thick layer of Spanish finish is being applied for a heavy pattern, wiping over the undulations using a wet soft bristled paint brush can help to soften the surface before it is sponged.

Spanish Finish must be finished with one coat of Acratex 501/10 Green Render Sealer followed by two coats of 955 Acrashield Advance acrylic paint system in accordance with the paint specification.

Option 4: Fine Spray Texture

Spray texture is a granular plaster designed to give a fine stippled appearance. Spray texture is best applied using a Sagola gun with a 6mm tip and with the compressor set at approximately 60psi.

32. Powaflex Acrylic System

The areas around all penetrations should be completed first using Powaflex imbedded in soft flexible 160g/m² alkali resistant mesh to all reveals. A piece of soft mesh must be used to reinforce the head flashings, jambs, and sills onto the surface of the panels and in the corner of any penetration where the sills and jambs meet. Once all penetrations and awkward areas have been completed all the flat areas of wall should be done using a 160g/m² alkali resistant hard mesh.

Drops of hard mesh do not have to overlap but should be tightly butt joined. If the mesh isn't going to be overlapped any butt joint that is created must offset any vertical joint in the panels by a minimum of 150mm.

33. Acrylic Finishing Texture Options

Below are the options once the Powaflex Base Coat has been applied:

Option 5: Acratex 951 Coventry Coarse Acrylic Texture - 15L

Option 6: Acratex 951 1mm Super Trowel Acrylic Texture - 15L

Option 7: Acratex 951 Sienna Coarse Sand Finish Acrylic Texture - 15L

Option 8: Acratex 951 Sienna Natural Acrylic Texture - 15L

Option 9: Specialized FlexiFloat - 20kg (This product is a bagged texture and not tintable)

Option 10: Specialized FlexiFlat -20kg (This product is a bagged texture and not tintable)

Acrylic textures are to be mixed thoroughly with a stirrer before application. The consistency can be adjusted by adding a little bit of water. Acrylic textures are to be applied to the entire surface with a rust-free steel trowel or sprayed on with a suitable plaster machine, levelled to grain thickness and rubbed with a plastic plasterer's float. Do not mix with other substances. Work evenly and without interruption during processing and setting. Protect façade against direct solar radiation, rain, or strong wind (e.g., scaffolding protection net). High temperatures during summer shorten the drying time and can lead to untimely drying out of the plaster. Air, material, and subsurface temperatures have to be higher than +5 degrees Celsius

Note:

When using acrylic textures over a modified cement base, seal the cement base with one coat of Acratex 501/10 Green Render Sealer prior to applying the acrylic texture.

34. Curing

The curing time of finishing plaster 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 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 some finishes contain cement and will not fully cure for 28 days prior to painting, it can be painted after the finish texture coats have cured for a minimum of 3-4 days using Dulux Acratex 501/10 Green Render Sealer. Acrylic plaster finishes can be painted as soon as the finished surface has hardened enough for application to take place.

35. Painting

The following paint system must be used over the EZpanel finishing plasters to make the system weathertight and give the desired finish colour to exterior walls. 955 Acrashield Advance is a 100% acrylic-based paint that has been specially formulated for use over cement-based plasters. All cement based plastered surfaces must be coated with Dulux 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/litre. All acrylic based plastered surfaces must be coated with 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/litre.

The Dulux Acratex 955 Acrashield Advance exterior paint system complies with all of Parts 7, 8, 9 or 10 of AS 3730. The paint system must be applied in accordance with the paint manufacturer's instructions.

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 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.

36. Plaster Site Storage

Products in dry form must be stored in a dry area, off the floor on a timber pallet or timber dunnage and must be protected from the weather and from mechanical damage. Stock must be rotated to ensure that the oldest material is used first. Plaster stock that is older than six months must be discarded. EPS battens, uPVC flashings and profiles must be protected from direct sunlight and physical damage. They should be stored flat and under cover. Liquid components must be stored in a frost-free area.

37. Limitations

DO NOT apply plaster when the ambient or surface temperature is below 4°C 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 with the 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.

DO NOT add any more water than prescribed by the technical data sheet for the individual products.

DO NOT wet the wall prior to the application of any plaster.

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 manufacturer's written specifications could result in the following but not limited to spalling, cracking, peeling, chipping, delamination, discoloration, wash off, and overall system failure.

38. General

- Use longer steel trowels rather than short ones. The longer trowel covers the area quicker and gives a flatter finish and as they are unable to push the mesh back into a thin coat of plaster.
- Have plenty of plaster buckets and water buckets on the job. Keep a 3" paint brush and water bucket handy for finishing those narrow edges and corners.
- When applying a stucco texture keep your hopper gun clean and adjusted and your compressor pumping out 90 to 100 PSI. Remember once or twice every day to clean out your air jet with a 1/8" drill bit. A piece of wire or nail will not do this job and is unacceptable.
- When you are spraying, maintain your plaster mix consistency as you use the plaster. Add a little water when you feel the plaster has stiffened a little. This is critical for a good texture coat. Do not attempt this with plaster that is older than 30 minutes.
- Organise your day to try and keep out of the hot summer sun particularly round the middle hours of the day.
- Try and complete a full length of wall in one go, otherwise it can be difficult to disguise the "cold" joint where you restart the next day. If circumstances prevent you finishing a complete wall, try and stop under the middle of a window opening or something similar. Ensure that you leave a leading edge of mesh uncoated so that you can overlap the new drop of mesh the next day. Also scrape off any excess plaster to further reduce the chances of the "cold" joint showing.
- The fibreglass mesh must not bridge over any construction joints.
- There must be no horizontal surfaces of EZpanel wall cladding which will be subject to water ponding.
- Ensure there is no possibility of water leaking in behind the coating due to poor sealing around projections, etc.
- Any exposed top or bottom edges of sheets must be protected by PVC beads or by continuing the plaster system over the edges of the sheets.
- Carefully peel back masking tape so that the masked edge is left undisturbed. Remember, it is important not to leave this job till last. Pull off masking tape as soon as is practicable,

- preferably while the finish coat is still “green”. This will enable you to clean all masked edges with a dry paintbrush and remove/knock off any larger dags of plaster texture.
- Alkaline EZpanel plaster will mark aluminium joinery and “Colorsteel” roofing. Any overspray must be cleaned off immediately.

39. Maintenance

Any paint film damage must be repaired as soon as possible to prevent water penetration and ensure that the high strength properties of the fibreglass mesh are maintained. Any impact damaged areas must be thoroughly cleared of any loose material and repaired with a 1:1 mixture of resin and water mixed with the required amount of EZpanel plaster. This will ensure a positive bond between the original plaster and the repaired area. Repaint within the following week. The wall cladding system should be regularly 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 re-coated with Dulux Acratex 955 Acrashield Advance paint system at 5 to 8 yearly intervals or sooner if required to maintain weather-tightness. Regular checks, at least annually, must be made of the system to ensure that the weather resistant coating is maintained watertight, 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. For further information please refer to Specialized Construction Products plaster maintenance guide.

40. 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.

The long-term durability of the EZpanel system is dependent upon the correct preparation and application of all components in strict accordance with all the relevant written instructions and detail sheets. On-site application is beyond the control of Specialized Construction Products and it cannot guarantee workmanship or the correct preparation and application of its products or systems. The certified EZpanel contractor shall take the overall responsibility for, on-site supervision, staff training, installation, and quality control.

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.