EZPANEL SPECIFICATION

EZPanel

LIGHTWEIGHT CONCRETE CLADDING SYSTEM

EZPANEL FIREWALL SOLUTION

Project details

Project Name:

Project Address:

Specification Prepared For:

Specifier's Name:

Date:

Certified Specialized Plastering Contractor:

Licensed Building Practitioner Number:

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NEW ZEALAND MADE

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Introduction

This specification is for the application of 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 painted with a 100% acrylic paint system. EZpanels can also be bonded or mechanically fixed to concrete or masonry walls. (Note: This Application is outside the scope of the BRANZ Appraisal.)

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

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This specification has been set out as near as possible to the actual construction sequence and it must be read in conjunction with the detail data sheets for the EZpanel System and the EZpanel Installation Guide.

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.

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 under- lay. 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.

Head Flashings

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

Flashings 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.

Roofing

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

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 Silicone or another approved equivalent both before plastering and after the installation of the base coat. All meter boxes must be correctly flashed in accordance with the detailed drawings for the EZpanel System. 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 Silicone 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.

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.

Preparation of Masonry and Concrete Surfaces

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

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.

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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 chemically cleaned with a water blaster 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 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.

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. 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.
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. 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.

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.
EZpanels 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.

Sill and Jamb Flashings

The use of the EZpanel PVC sill and PVC 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.

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.

Fixing the EZpanel

The panels are butt jointed except at 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 Sabre Fix PU glue as they are being installed. The edges of all of 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.
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.
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 storeys 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.

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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.

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.

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. Typically the screws are placed into the panels 150mm from the outside edge giving overall fixing centres of approximately 300mm. Two screws should be put into each stud per panel. Refer to the table 1 for fixing centres.

Fixing to timber battens

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 EZpanels 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.

Table 1: EZpanel fixing centres through EPS battens

Wind Zone/Wind Pressure	Fixing centres (mm) to studs
Low - Very High NZS 3604 defined Wind Zones with studs at maximum 600 mm centres	300
NZS 3604 Wind Zone Extra High and specifically designed buildings up to design differential 2.5 kPa ULS wind pressure with studs at maximum 600 mm centres	300

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

Steel Framing

The same fixing centres apply as for timber framing. Use Specialized Construction Products Ltd 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.

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 of the EZpanel 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 used to hold the sheets in place while the plaster is drying and to provide a mechanical fixing.

Sealing the Substrate

The surface of the EZpanels must be properly sealed prior to the application of any plaster. To seal the EZpanels, 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.

PVC Beads

All exposed corners and bottom edges must be protected by gluing on the appropriate PVC section. The beads are glued on with Sbrefix PS Adhesive.

Stopping Up Prior to Mesh Coating

Once the EZpanels have been correctly fixed, a two metre straight edge should be used to check the flatness of the walls surface. Durarasps should be used to sand off any large irregularities. Deviations and holes in the surface of the EZpanels should be filled with EZstop plaster and screeded flat. Once the surface is flat and true all screw holes and PVC extrusions should be stopped with a layer of Fine Mesh Coat plaster. This will help to ensure any shrinkage in the preceding mesh coat is kept to a minimum. Only once the walls are flat and true and have been well stopped should mesh coating commence.

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CEMENT PLASTER OPTION (A)

Mesh Coating

The areas around all penetrations should be completed first by using Fine Mesh Coat imbedded in soft flexible 160g/m2 alkali resistant mesh to all reveals. A piece of soft mesh must be used to reinforce the head, sill and jamb flashing 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 embedded in EZpanel base coat. 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.

Finishing Options

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

Option 1: Stucco Texture

Fine base coat plaster can be sprayed through a hopper gun or a sagola gun to achieve a heavy stucco plaster finish.

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.

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.

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 7mm tip and with the compressor set at approximately 60psi.

Option 5: GranoporTop 1.5mm Acrylic Texture

Ready to use, synthetic resin-based render which is polished flat to achieve a fine granular finish.

Option 6: Granopor Fine 1.0 mm Acrylic Texture

Ready to use, synthetic resin-based render which is polished flat to achieve a fine granular finish or sprayed through a hopper gun or a sagola gun to achieve a fine stippled appearance. Smooth textures will not cover up background imperfections, particularly when walls are subject to side lighting at certain times of the day

ACRYLIC PLASTER OPTION (B)

Powaflex Acrylic System

The areas around all penetrations should 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 join that is created must offset any vertical join in the panels by a minimum of 150mm.

Finishing Options

There are two options once the Powaflex Base Coat as been applied:

Option 1: GranoporTop 1.5mm Acrylic Texture

Ready to use, synthetic resin-based render which is polished flat to achieve a fine granular finish.

Option 2: Granopor Fine 1.0 mm Acrylic Texture

Ready to use, synthetic resin-based render which is polished flat to achieve a fine granular finish or sprayed through a hopper gun or a sagola gun to achieve a fine stippled appearance. Smooth textures will not cover up background imperfections, particularly when walls are subject to side lighting at certain times of the day

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 affect. Although some finishes contain cement and will not fully cure for 28 days, as long as it is lightly hosed down with fresh water 12 hours prior to painting, it can be painted after the finish coats have cured for a minimum of 3-4 days.

Painting

One of the following paint systems must be used over the EZpanel finishing plasters to make the system weathertight and give the desired finish colour to exterior walls. Plastershield is a 100% acrylic-based paint that has been specially formulated for use over cement based plasters. Plastered surfaces must be coated with a minimum of 2 coats of Plastershield tinted to the selected colour and applied by brush and roller at a spread rate of approximately 6m2/litre.

As an alternative to Plastershield, a latex based exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730 may be used. 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 Ltd 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.

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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 Ltd.

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.

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 recoated with an approved 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.

Warranty

The recommendations, suggestions, statements and technical data provided by Specialized Construction Products Ltd 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 Ltd be liable for incidental or consequential damages. Specialized Construction Products Ltd 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 Ltd; 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 of its components in strict accordance with all the relevant written instructions and detail sheets. On-site application is beyond the control of Specialized Construction Products Ltd 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.

System 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 is available by calling Specialized Construction Products Ltd on **(09) 414 4499** or by e-mail at **info@specialized.co.nz.**