

MPT Fibreclad Technical Manual

MPT FIBRECLAD SYSTEM

The MPT and Mineral Plaster Technology brands are owned and marketed by Petros Holdings Limited throughout New Zealand and the South Pacific. The FibreClad system is a jointing and coating system for use over 9mm AS/NZS 2908.2 compliant fibre-cement board.

The MPT FIBRECLAD Jointing and Coating System has been designed for use over a cavity-based fibre cement cladding system by Petros Holdings Limited (BRANZ Appraisal 793 (2019)). The fibre cement sheets and cavity must be installed in accordance with the current Technical Specification.

**Appraisal**

MPT Fibreclad is suitable for use as a jointing and exterior plaster system over the cavity system formed as part of the Craftstone Real Stone Veneer System on buildings within the following scope:

* The scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 and,
* With a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
* Situated in NZS 3604 Wind Zones up to, and including Extra High.

MPT Fibreclad is also suitable for use over the Craftstone Real Stone Veneer System (BRANZ Appraisal 793 (2019)) cavity construction (as described herein) as a jointing and exterior plaster system for buildings within the following scope:

* the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
* constructed with timber framing subject to specific engineering design; and,
* situated in specific design wind pressures up to a maximum design differential ultimate limit state (ULS) of 2.5 kPa; and,
* within the scope limitations of BRANZ Appraisal No. 793 (2019) Craftstone Real Stone Veneer System.

The Craftstone Real Stone Veneer System Cavity Construction must be used, designed and installed as described in BRANZ Appraisal No. 793 (2019), and as described in this Technical Manual up to and including the installation of the fibre cement boards, but excluding the application of the EIFS tape.

Installation of components and accessories supplied by Petros Holdings Ltd must be carried out only by Petros Holdings Ltd Approved Applicators.

**Building Regulations**

The MPT Fibreclad Plaster System if designed, used, installed and maintained in accordance with the statements and conditions in this MPT Technical Manual, will meet or contribute to meeting the following provisions of the NZBC:

**Clause B2 DURABILITY:** Performance B2.3.1 (b), 15 years and B2.3.1 (c), 5 years. MPT Fibreclad meets these requirements.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. MPT Fibreclad when used as a finish over the Craftstone Real Stone Veneer Cavity System, meets this requirement.

MPT Fibreclad meets the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.7.4.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. MPT Fibreclad meets this requirement and will not present a health hazard to people.

DESIGN INFORMATION

**FRAMING STRUCTURE**

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 that are outside the scope of NZS 3604 must be to a specific design in accordance with NZS 3603 and the AS/NZS 1170 series. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604.

In all cases, the studs supporting the MPT Fibreclad System must be at maximum 600 mm centres.

Nogs must be fitted flush between the studs at maximum 800mm centres.

**E2 EXTERNAL MOISTURE**

When installed in accordance with the directions and provisions of Petros Holdings Ltd, the MPT Fibreclad System will meet the performance requirements of NZBC E2.3.2.

Junctions between the cladding substrate and the external joinery, at control joints and around window penetrations must be detailed to ensure the cladding system is installed and maintained weather-tight.

Sills and copings must be sloped a minimum of 15**°** from horizontal.

Weather-tightness Principles:

* Weather-proofing around aluminium joinery openings, penetrations, construction and expansion joints, and base and wall junctions, must be given particular attention by designers and substrate installers.
* Joinery heads must be protected by a metal head-flashing installed by others.
* If required, mechanical sill and jamb flashings can be supplied by Petros Holdings Ltd and fitted by the MPT Fibreclad Approved Applicator. For flush-mounted joinery, a gap of 3-5mm is required between the substrate surface and the back of the joinery flange.
* Designers must provide detailed drawings of all weather-tightness design features that are outside the scope of the technical literature of the substrate manufacturer or Petros Holdings Ltd.

**Penetrations**

* All penetrations, including doors and windows, are to be flashed or made waterproof in accordance with the technical literature of the substrate manufacturer or supplier, as well as the weather-tightness requirements of clause E2 of the New Zealand Building Code. This work must be carried out by the builder or respective trades-people.
* The Petros Holdings Ltd approved installers are not responsible for weather-tightness detailing. That is part of the substrate system and is the responsibility of other LBP-qualified trades.

**Drainage Planes**

* Designers must ensure that structures do not contain detail or design features where water ponding may occur.
* A minimum slope of 15 degrees is required to all sills and copings, and where required by the installation details, a water-proof membrane system or water management facility is to be specified.

**Ground Clearances**

Ground clearances for supporting substrate boards must be maintained in accordance with the requirements of NZS 3604. Bottoms of sheets are to finish minimum **35mm** clear of finished deck surfaces and roof flashings, minimum **100mm** clear of paved surfaces, and minimum **175mm** clear of unpaved ground; and must be sealed using MPT Amberseal along the bottom edge of the board and at least 50mm up the back of the board.

**Building Underlays**

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. Where rigid underlays are used, the fixing lengths must be increased by a minimum of the thickness of the underlay.

**Water Vapour**

The MPT Fibreclad System is not a barrier to the passage of water vapour, and when correctly installed, will not create or increase the risk of damage resulting from condensation.

**B1 STRUCTURE**

**Mass -** For structural design purposes, the MPT Fibreclad System has a mass of approximately 20 kg/m**2**.

**Impact Resistance -** The MPT Fibreclad System has good resistance to soft and hard-body impacts likely to be encountered in normal residential use.

**Wind Zones -** The MPT Fibreclad System is suitable for installation in all NZS 3604 defined Wind Zones, up to and including Extra High.

The System has also been tested for weather-tightness and structural wind loading when used for buildings subject to specific design up to a design differential ultimate limit state (ULS) wind pressure of 2.5 kPa.

**F2 HAZARDOUS BUILDING MATERIALS**

When the MPT Fibreclad System is used and installed in accordance with the instructions and technical literature of Petros Holdings Ltd, the product will not present a health hazard to people; therefore the provisions of NZBC F2.3.1 will be met.

**B2 DURABILITY**

When installed and maintained in accordance with the instructions and recommendations of Petros Holdings Ltd, the MPT Fibreclad System will have a serviceable life of at least 15 years.

The assessment of durability of the System to meet the requirements of the NZBC is based on the difficulty of access and replacement, and the ability to detect failure of the System both during normal use and maintenance of the building.

**OUTBREAK OF FIRE**

The MPT Fibreclad System does not require separation from chimneys and flues. However, when used in conjunction with heat sensitive materials, the heat sensitive material must be separated from chimneys and flues in accordance with the requirements of NZBC Acceptable Solution C/AS1, Part 7 for the protection of combustible materials and AS/NZS2918.

**METER BOX AND ELECTRICAL CABLES**

When cables must penetrate the substrate for exterior electrical connections, the cable must be supported appropriately and a suitable flashing or seal must be used to ensure that the penetration remains watertight.

When an external meter box is required, fit the meter box flashing option as per the MPT Fibreclad System technical detail, “MPT F085” or other suitably approved flashing method.

**CONTROL JOINTS**

Due to the framing or substrate requirements for construction joints to function correctly, designers must specify the location of the joints at planning stage.

For sheet claddings over timber framing, a double-stud sub-structure for vertical control joints with maximum spacing of 5.4m centres must be specified.

Horizontal control joints are required to accommodate movement caused by joist shrinkage and deflection and must be provided at all floor joists and wall-frame-to-truss connections. Elsewhere, horizontal control joints are required at a maximum spacing of 5.4m where the studs are running continuous to full height.

Control and expansion joint installation in the substrate is outside the scope of the MPT Fibreclad System and must be installed by the substrate installer or builder in accordance with the technical instructions of the substrate manufacturer or supplier.

**INTER-STOREY DRAINED JOINTS**

Inter-storey drained joints must be provided to limit continuous cavities to 2 storeys in height or 7m maximum in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4.

**HANDLING AND STORAGE**

Handling and storage of all materials on site is the responsibility of the Petros Holdings Ltd Approved Installer. Bags of plaster render require storage in dry conditions, preferably off the floor on pallets or dunnage. Crates and boxes of product should be stored under shelter or under protective covers if stored in the open.

**SHELF LIFE**

Due to the eventual static reaction of the additive components in modified mortar formulations, all MPT renders which are 12 months beyond manufacture date must be discarded. The batch-number is clearly stamped on all bags of MPT renders. If in doubt, Petros Holdings Ltd should be consulted to determine the product’s age.

**Technical Specification**

**Cavity & Substrate Installation**

The cavity and board installation must be carried out in strict accordance with the current fibre cement board manufacturers Technical Specification.

**Sealer Coat**

Sheets and sheet joints are to be sealed with MPT Amberseal (a clear penetrating sealer) prior to application of the jointing system, to protect the sheet edges and to prevent rapid moisture loss from the BONDCOAT plaster following application.

**Jointing Mesh**

The FIBRECLAD jointing system consists of two independently installed layers of hard woven alkali resistant fiberglass mesh, with a nominal 4 x 4 mm mesh size, weighing approximately 160g/m2. Mesh widths are 75mm for the initial layer and a continuous full mesh coat (1200mm width) with 100mm overlaps for the second, providing a double-meshed joint reinforcement.

**Plaster and Finish Coats**

**BONDCOAT Jointing Plaster**

* Is a factory mixed adhesive render for bonding jointing mesh over fibre-cement sheet joints and is the bedding compound used to install the first layer of jointing mesh.
* It is suitable for commercial plaster pumping machines or manual trowel application.
* Has high impact strength for residential and light commercial use over 9mm thick fibre-cement board.
* A 20 kg bag of BONDCOAT will joint approximately 50Lm at 4mm thickness of recessed jointing using the double mesh system (this is an approximate guideline and will vary depending on individual sheet set out from job to job).
* Note that the initial layer of bondcoat used in the recessed cavity must be mixed with 1 part Petralastic to 3 parts water, to provide additional strength, weathertightness and flexibility at the sheet joints.
* The second reinforcing layer for the full mesh-coat must be adhered using BONDCOAT mixed with water alone, to ensure superior vapour permeability.

**SKIMCOAT**

Following the installation of the jointing system, a flushing and levelling coat of SKIMCOAT is applied over the entire sheet surface including the joints.

* SKIMCOAT is an all-purpose skim coat render designed primarily as a levelling coat and can be laid up as a preparation coat to ensure a high standard of finish for subsequent finishing coats.
* It is suitable for commercial plaster pumping machines or manual trowel application.
* A 20kg bag of SKIMCOAT yields approximately 10 m2 at a thickness of 2mm.

**ABOBECOAT – Adobe/Undulating**

* Is a factory mixed dry plaster and can be applied as a final coat on top of a base coat.
* Specifically formulated as a fine sponge finish and is ideally suited where an adobe or undulating finish is required.
* Is suitable for commercial plastering machines or can be applied manually when mixed by drill or machine.
* Can be applied from 1 - 5mm thick and during setting the applied areas may be sponged or brushed with water to achieve the required finish.
* Can be easily worked to any desired effect, from bold rustic and undulating textures to smooth sponge finishes.
* A 20 kg bag of ADOBECOAT yields approximately 3 to 5m2 at 4 - 6mm thickness (Depending on the desired texture).

**FLOATCOAT – Float/Sponge/Texture**

* Is a factory mixed dry plaster and can be applied as a final coat on top of a base coat.
* Specifically formulated for finishing by plastic towel or sponged with water.
* Can also be sprayed through a hopper gun to achieve a fine to medium textured finish.
* To achieve a high quality finish, an application of SKIMCOAT is recommended prior to FLOATCOAT.
* Is applied manually when mixed by drill or machine and can be applied to a thickness of 1-2mm.
* Optimum working time is approximately 3-5 minutes following application to the wall surface.
* A 20 kg bag of FLOATCOAT yields approximately 7m2 at a 2mm thickness.

**SCRATCHCOAT MEDIUM\* – Scratch/Drag**

* Is a factory mixed dry plaster and can be applied as a final coat on top of a base coat.
* Specifically formulated as a medium texture drag of random scratch coat. Grain size varies from 0.5 - 3mm to produce the required texture pattern.
* During setting the applied areas are worked with a polystyrene or hard plastic float in circular or vertical directions.
* A 20kg bag of SCRATCHCOAT Medium yields approximately 5-6m2.

**SCRATCHCOAT COARSE\* – Scratch/Drag**

* Is a factory mixed dry plaster and can be applied as a final coat on top of a base coat.
* Specifically formulated as a coarse scratch or drag finish. Grain size varies from 0.5-4mm to produce the required texture pattern.
* During setting the applied areas are worked with a polystyrene or hard plastic float in a circular or vertical direction.
* A 20kg bag of SCRATCHCOAT Medium yields approximately 5m2.

**Spray Textures**

* FLOATCOAT, SPONGECOAT, and ADOBECOAT can be sprayed through a hopper gun or similar to produce varying grades of textures, from fine to very coarse. Variations are produced by sand particle size, nozzle size, and varying air volume.
* For further information regarding sprayed textures contact Petros Holdings Ltd.

\*these products are made-to-order.

**Important Information regarding MPT Plasters**

* Do not under any circumstances add foreign substances other than clean water to premixed mineral plasters (except by adding Petralastic to Bondcoat for jointing purposes).
* Do not add further water to any MPT plaster/water mixture more than 2 hours after original mixing.
* Any plastered surface must be protected from rain and bright sunlight for at least 12 hours after application.
* Always allow 24 hours drying time prior to applying further coats of plaster.
* All MPT Plasters have high water vapour permeability (breathability)
* All MPT plasters are cement based, non-acrylic plasters - containing only natural materials and additives.

**Paint System Specification**

**Petros Holdings Ltd have not specified any specific brand of paint for use as part of our Fibreclad system. Instead, we have specified the type of paint required and have left it to the paint manufacturers to provide a warranty on their paint for use over our plaster systems. This gives our customers the widest possible discretion in choosing what paints they prefer to use.**

**Efflorescence-blocking Primer**

Often referred to as Lime-lock, or Lime-stop, or Lime Blocker, this coat of primer is applied directly over the finishing render and must be designed to prevent the lime in the render from adversely effecting the finish coats. It must be applied in strict accordance with the manufacturers specifications and must meet the performance requirements of the NZBC.

**Elastomeric, Breathable or High-Build finishing coats**

Two coats of your finishing coat in either elastomeric, high-build or breathable paint finishes.

The paint colour selected must have a light reflectance value (LRV) of 40% minimum.

These coats must be applied in strict accordance with the manufacturers specifications and must meet the performance requirements of the NZBC.

**Application Standards**

As a condition of the MPT Producer Statement and Warranty, the MPT FIBRECLAD Jointing and Coating System can only be installed by Petros Holdings Ltd approved applicators who are qualified as LBP’s (License Building Practitioners) and hold a current LBP registration number.

Installation of the FIBRECLAD Jointing and Coating System must be carried out in a strict accordance with the Technical Literature provided in this document.

**Handling and Storage**

Handling and storage of all materials, whether on or off site, is the responsibility of MPT Approved Applicators. Dry storage must be provided on site for bags of plaster mix, preferably on pallets or dunnage. uPVC extrusions and profiles must be protected from direct sunlight and physical damage and should be stored flat and under cover.

Do not use plaster which has exceeded a 12 month period from the date of manufacture.

**Fire**

The MPT Fibreclad Plaster System is suitable for use on buildings with an SH Risk Group classification, a building height of ≤ 10 m and at a distance of ≥ 1.0 m to the relevant boundary. Refer to NZBC Acceptable Solutions C/AS2 – C/AS6 Paragraph 5.8.1 for the specific exterior surface finishing requirements for other building Risk Groups.

**Design**

Specifiers must ensure that the construction details for the cavity system specified in the Craftstone Real Strone Veneer System Technical Manual are appropriate for the intended application and that additional detailing is provided for specific design or areas that fall outside the scope and specifications of the technical data.

**Maintenance**

Regular maintenance is essential for the MPT Fibreclad System to continue to meet the NZBC durability performance provision and to maximise its serviceable life.

Annual inspections must be made to ensure that all aspects of the cladding system including the textured finish system, flashings, paint and any sealed joints remain in a weatherproof condition. Any damaged area or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Sealant, paint coatings, textured finish systems, flashings or the fibre cement sheets must be repaired in accordance with relevant manufacturer’s instructions.

Regular cleaning (at least annually) of the textured finish system is recommended to remove grime, dirt and organic growth, to maximize the life and appearance of the coating. Grime may be removed by brushing with a soft brush, warm water and detergent.

Re-coating of the paint system will be necessary throughout the life of the cladding system. The interval between re-coats depends on the paint selected and will be at approximately 5 - 10 yearly intervals in accordance with the paint manufacturer’s instructions.

Minimum ground clearance, as set out in the Appraisal, must be maintained at all times during the life of the cladding. Failure to adhere to the minimum ground clearances will adversely affect the long-term durability of the MPT FIBRECLAD plaster system.