



**BEVELBACK AND REBATED BEVELBACK
WEATHERBOARD CAVITY SYSTEM
INSTALLATION SPECIFICATION**

Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System

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1.0 General Information

1.1 Introduction

The Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System is a cavity-based external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

The cladding system consists of horizontally fixed Hermpac Bevelback and Rebated Bevelback cedar weatherboards installed over cavity battens, flashings and accessories and is finished with a premium penetrating oil stain to Herman Pacific Limited specifications.

The system incorporates a primary and secondary means of weather resistance (first and second line of defence) against water penetration by separating the cladding from the external wall frame with an 18 mm drained cavity.

1.2 BRANZ Appraisal

The Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System has been appraised by BRANZ. Refer to Appraisal No. 663 (2009).

1.3 Hermpac Bevelback and Rebated Bevelback Weatherboards

Hermpac Bevelback and Rebated Bevelback weatherboards are manufactured from Canadian Coastal Western Red Cedar (*Thuja plicata*) and Canadian Coastal Yellow Cedar (*Chamaecyparis nootkatensis*).

The weatherboard lap and rebate profiles are in accordance with NZS 3617 and BRANZ Bulletin 411. The weatherboards are minimum 18.5 mm thick and are available in a range of widths and face profiles. They are supplied in 1.83 to 4.88 m lengths. Lengths outside of the general specification may be available by special contract.

1.4 Cavity Battens

The Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System uses either treated timber cavity battens or Cavibat polypropylene cavity battens to separate the weatherboards from the wall frame and form the cavity. Cavibat cavity battens can be installed horizontally over the wall framing to provide support for the weatherboards at fixings points, e.g. at window openings. Refer to www.cavibat.co.nz and BRANZ Appraisal No. 524 (2007) for full specifications.

1.5 Accessories

Accessories supplied by Herman Pacific Limited for use with the Hermpac Bevelback and Rebated Bevelback Cavity System include:

- Hermpac cover boards – 18 mm thick boards in widths of 69 and 90 mm. The cover boards are supplied in lengths 1.8 m and longer.
- Hermpac eaves moulding – 40 x 27 mm bevelled profile, supplied in 1.8 m and longer.
- Hermpac scribes – 10 mm wide x 40 mm, 17 mm wide x 40 and 60 mm pre-cut scribes with arised edges supplied in 1.83 to 6.1 m lengths.

(Note: All timber accessories are manufactured from Canadian Coastal Western Red Cedar.)

- Hermpac weatherboard fixings – silicon bronze, Grade 304 or Grade 316 stainless steel annular grooved Hermpac Crown Head, Rose Head or Flat Head nails. The nail shank must be minimum 3.15 mm diameter and the length must allow minimum 30 mm penetration of the wall frame.
- Hermpac cover board fixings – 50 x 2.8 mm silicon bronze, Grade 304 or Grade 316 stainless steel annular grooved Hermpac Crown Head, Rose Head or Flat Head nails.
- Hermpac scribe fixings – 60 x 2.8 mm stainless steel ring shank jolt head nails.
- Hermpac corner soakers – 90° soakers available in copper, stainless steel and powder coated Zinalume.

1.6 Handling and Storage

Hermpac Bevelback and Rebated Bevelback weatherboards must be stacked flat and true, clear of the ground by a minimum of 150 mm and supported on dry and clean timber bearers at maximum 900 mm centres.

The weatherboards must be kept dry at all times either by storing within an enclosed building or when stored externally an additional secondary cover to the plastic wrapping is required. Care must be taken to avoid damage to edges, ends and the weatherboard surfaces.

2.0 Design Information

2.1 Design Responsibility

The Specifier for the project must ensure that the details in this literature are suitable for the intended application and that additional detailing is provided for specific design or any areas that fall outside the scope and specifications of this literature.

2.2 Scope

This specification covers the use of the Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System as an external horizontally fixed wall cladding system for buildings within the following scope:

- the scope limitations of NZBC Acceptable System E2/AS1, Paragraph 1.1; and,
- constructed with timber framing complying with the NZBC; and,
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

This specification also covers the weathertightness and structural wind loading of the Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System when used on timber framed buildings subject to specific design up to a design differential ultimate limit state (ULS) wind pressure of 2.5 kPa.

For applications which are outside the scope of this literature and details which are not in this literature the specifier must ensure that the design meets the relevant performance requirements of the NZBC.

Herman Pacific Limited recommends that professional design advice is sought in these circumstances.

2.3 Building Regulations

The Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System if designed, used and installed in accordance with the statements and conditions of this literature and the supporting BRANZ Appraisal, will meet the following provisions of the New Zealand Building Code:

- Clause B1 Structure
- Clause B2 Durability
- Clause E2 External Moisture
- Clause F2 Hazardous Building Materials

2.4 Ground Clearances

The finished floor level must have a minimum clearance to paved or unprotected ground as required by NZS 3604:1999.

Hermpac weatherboards must overhang the bottom plate on a concrete slab by a minimum of 50 mm as required by NZBC Acceptable Solution E2/AS1, Table 18.

The bottom edge of the Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System must finish a minimum of 100 mm above paved surfaces or 175 mm above unprotected ground.

At deck or low pitch roof/wall junctions, the bottom edge of the Hermpac weatherboards must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35 mm.

2.5 Structure & Framing

Timber wall framing behind the Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System must be treated as required by NZS 3602:2003 *Timber and wood-based products for use in building*.

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. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604. Use of timber framing must be in accordance with framing manufacturer's specifications.

In all cases studs must be at maximum 600 mm centres, with dwangs fitted flush between the studs at maximum 800 mm centres.

2.6 Framing Tolerances

In order to achieve an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the requirements of NZS 3604:1999.

2.7 Cavity Vent Strip

The Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System must incorporate a cavity vent strip to close off the bottom of the cavity and provide resistance against the penetration of vermin. The vermin strip must be in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3. The vent strip must be manufactured from PVC, aluminium or stainless steel, and be punched with 3 - 5 mm holes or slots

which provide a minimum ventilation opening area of 1000 mm² per lineal metre of wall.

2.8 Building Wrap

The Herculac Bevelback and Rebated Bevelback Weatherboard Cavity System must be installed over building paper or wrap complying with NZBC Acceptable Solution E2/AS1, Table 23, or other BRANZ Appraised breather-type membranes.

Unlined gables and walls must incorporate a rigid sheathing or an air barrier fixed to the framing, which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. Where rigid sheathings are used, the fixing length must be increased by a minimum of the thickness of the sheathing.

2.9 Inter-storey Junctions

Inter-storey drained joints must be provided for walls over two storeys in height in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4(b).

2.10 Herculac Bevelback and Rebated Bevelback Weatherboards

Herculac Bevelback weatherboards must be overlapped a minimum of 32 mm. Herculac Rebated Bevelback weatherboards must be overlapped a minimum of 25 mm with an expansion gap of 2 mm at the overlap between boards. Herculac Bevelback and Rebated Bevelback profiles are all manufactured in accordance with BRANZ Bulletin 411 (Refer to E2/AS1 page 106, paragraph 9.4.1.1).

The weatherboards shall be pre-coated with the selected coating (prior to site delivery and installation) by Herman Pacific Limited associate Machinecoat (NZ) Ltd, by the flood coat inundation method or in-line spray coat system (subject to coating type selected).

Pre-finished Bevelback and Rebated Bevelback weatherboards shall be over-coated and maintained in accordance with the coating manufacturer's specification. All cut ends and/or uncoated surfaces shall be coated during installation to protect against the penetration of moisture, post installation.

The weatherboards shall be fixed through the cavity battens to the studs at maximum 600mm centres using Herculac weatherboard fixings (refer to Section 1.5 of this specification).

External corners shall be weatherproofed by the use of corrosion resistant corner flashings and Western Red Cedar corner battens HP 201 or HP 202 with Herculac scribes, or Herculac corner soakers.

Internal corners shall be weatherproofed by the use of corrosion resistant internal corner flashings.

3.0 Installation Information

3.1 System Installation

This section of the literature should be read in conjunction with the installation details.

The selected building wrap and flexible sill and jamb tape system must be installed in accordance with the manufacturer's instructions prior to the installation of the cavity battens. The building wrap must be installed horizontally and be continuous around corners. Wrap must be lapped 75 mm minimum at horizontal joints and 150 mm minimum over studs at vertical joints. Particular attention must be paid to the installation of the building wrap and sill and jamb tapes around window and door openings to ensure a continuous seal is achieved and all exposed timber wall framing in the opening is protected. All penetrations through the building wrap must be sealed and joints sealed or lapped 150 mm.

The selected cavity vent strip must be installed so a minimum 15 mm drip edge to the bottom of the weatherboards is maintained at all times.

Cavity battens must be installed over the building wrap to the wall framing at a maximum of 600 mm centres where the studs are at 600 mm centres, or at 400 mm centres when studs are at 400 mm centres. Cavibat cavity battens must be fixed in place with 40 x 2.5 mm hot-dip galvanised flat head nails or galvanised or stainless steel finishing brads at 400 mm centres. Refer to BRANZ Appraisal Number 524 (2007) for further information. Timber cavity battens must be fixed in place with 40 x 2.8 mm hot-dip galvanised flat-head nails at maximum 800 mm centres.

Where the studs are at greater than 400 mm centres, a building wrap support, e.g. polypropylene strap, 75 mm galvanised mesh, galvanised wire, or additional vertical battens must be installed over the building wrap between the cavity battens at maximum 300 mm centres to prevent the building wrap bulging into the drainage cavity.

3.1.1 Aluminium Joinery Installation

Aluminium joinery and associated head flashings must be installed in accordance with the window manufacturer's instructions. A 7.5 - 10 mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and air seal can be installed in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.6 after the joinery has been secured in place.

3.1.2 Hermpac Bevelback and Rebated Bevelback Cedar Weatherboard Installation

Hermpac Bevelback and Rebated Bevelback weatherboards must not be wet prior to installation. Prior to installation, the back, face and edges of the Hermpac Bevelback and Rebated Bevelback weatherboards must be sealed with an exterior grade oil-based penetrating stain. During installation, cut ends must be sealed with an exterior grade oil-based penetrating stain.

Before the weatherboards are installed, the corner detail must be prepared to suit the selected option, e.g. external box corner, external corner moulding etc. The necessary flashings must be installed before commencing weatherboard fixing and the cavity closure must be installed continuously around the bottom of the cavity.

The first course of weatherboards must be full length, i.e. 4.88 m and commence from an external corner. The first weatherboard must be installed level to assist with the installation of subsequent weatherboards. The weatherboards must overhang the bottom plate by a minimum of 50 mm.

Immediately prior to installing the weatherboards over the internal and external corner flashings, a continuous bead of sealant must be applied to the face of the flashing along the fixing line.

Hermpac bevelback weatherboards must be overlapped a minimum of 32 mm. Hermpac rebated bevelback weatherboards must be overlapped a minimum of 25 mm with an expansion gap of 2 mm at the overlap. The top of the weatherboard lap must be restrained using the Hermpac clinch nail at every cavity batten.

Hermpac Bevelback and Rebated Bevelback weatherboards must be pre-drilled with a hole slightly smaller than that of the nail. Fix each weatherboard with one nail per board at every cavity batten. Fixing must be carried out using silicon bronze or Grade 316 stainless steel ring shank Hermpac Crown Head, Rose Head or Flat Head nails. The nail shank must be minimum 3.15 mm diameter and the length must allow minimum 30 mm penetration of the wall frame. The fixing must be located 35-40 mm above the bottom of the weatherboard, be located no closer than 32 mm from the end of the board, and must finish flush onto the surface of the weatherboard, not into or below the surface.

Fix weatherboards in full lengths where possible. Where joints are unavoidable, scarf the weatherboard at 45° over a cavity batten and fix with one fixing through the overlapping board.

3.1.3 Boxed Corners, Cover Battens and Mouldings

External and internal corners must be finished in accordance with the installation detailing.

3.1.4 Finishing

At least two coats of an exterior grade quality oil-based penetrating stain must be used over the front face of the Hermpac Bevelback and Rebated Bevelback weatherboards to protect the weatherboards and give the desired finish colour to the exterior walls. The stain must be recommended for use as a wall cladding stain by the manufacturer and must be brush or Machinecoat NZ Ltd applied. Herman Pacific Limited recommends the use of oil based stains manufactured by WoodX, Resene, Dulux and Dryden's.

Follow the stain manufacturer's instructions at all times for application of the stain finish.

Refer to Section 4.0 for maintenance requirements.

4.0 Maintenance

Building owners are responsible for the maintenance of the Hermpac Bevelback and Rebated Bevelback Weatherboard Cavity System. Annual inspections must be made to ensure that all aspects of the cladding system, including flashings remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress, must be repaired immediately. Sealant, stain coatings, flashings or the weatherboards must be repaired in accordance with the relevant manufacturer's instructions.

Regular cleaning (at least annually) of the stain finish with water and a mild detergent is recommended to remove grime, dirt and organic growth, to maximise the life and appearance of the cladding.

Recoating of the stain finish will be necessary throughout the life of the cladding system. Re-staining must be carried out every 2-3 years in accordance with the stain manufacturer's instructions. Re-staining will be required more frequently on exposed northern and western facing walls. When re-staining, care must be taken to ensure bottom edges and ship lap edges are well covered and penetrated with the stain.

5.0 Health & Safety

Cutting of Hermpac Bevelback and Rebated Bevelback weatherboards must be carried out in well ventilated areas and dust masks, eye and hearing protection must be worn.