

# PALLISIDE

the **smart choice** in weatherboards



## **PALLISIDE TECHNICAL GUIDE** march 2015

# PALLISIDE TECHNICAL GUIDE

march 2015

## table of contents

### **1.0 INTRODUCTION**

- 1.1 Product Description
- 1.2 Product Information
- 1.3 Our Quality 25-Year Product Guarantee
- 1.4 Independently Assessed
- 1.5 Continual Improvement

### **2.0 SCOPE AND SPECIFICATION**

- 2.1 Site Requirements
- 2.2 Structure Requirements
- 2.3 Bracing
- 2.4 Wind Loading
- 2.5 Establishing Weathertightness Risk
- 2.6 Weathertightness
- 2.7 Fire Properties
- 2.8 Building Underlay
- 2.9 Joinery Fabrication
- 2.10 Weatherboard Installation Outside the Scope of This Document
- 2.11 Scaffolding
- 2.12 Drained Cavities
- 2.13 References

### **3.0 DESIGN DETAILS**

- 3.1 Design Considerations for Palliside

### **4.0 MAINTENANCE**

- 4.1 Maintenance and Cleaning
- 4.2 Painting Palliside
- 4.3 Matching Palliside Colours
- 4.4 Graffiti Removal
- 4.5 Replacing Damaged Weatherboards

### **5.0 TECHNICAL SUMMARY**

- 5.1 Compliance with the New Zealand Building Code
- 5.2 BRANZ Appraisal
- 5.3 Material
- 5.4 Weight of Board
- 5.5 Durability
- 5.6 Colours
- 5.7 Painting
- 5.8 Colourfastness
- 5.9 Matching Palliside Colours
- 5.10 Impact Resistance
- 5.11 Thermal Resistance
- 5.12 Internal Moisture
- 5.13 Thermal Expansion
- 5.14 Technical Data Sheet - Fasteners
- 5.15 Sealants

CAD details, which support the information contained in this document, are available to be downloaded from the Palliside website ([www.palliside.co.nz/CAD](http://www.palliside.co.nz/CAD)).

A table listing these details can also be found under Section 3 of the Palliside Technical Guide. Refer to the back of this document for Dynex Extrusions Ltd contact details.

# INTRODUCTION

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## 1.1 Product Description

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When selecting the exterior cladding on a home there are many options available. With today's busy lifestyle it is important to choose a cladding that not only looks smart on day one, but will keep on looking smart without continual time-consuming maintenance.

Pallside weatherboards are a solid, smart looking cladding, which provides the natural shadow-lines and definition of timber weatherboards with a low maintenance finish. This ensures the product will keep on looking good without the continual maintenance often associated with weatherboards.

Pallside can be handled and worked like timber with no requirement for special tools, though unlike timber once it's up it requires only an occasional wash down to uphold its smart looks.

Designed and manufactured in New Zealand specifically for the rigours of this country's unique climate, Pallside weatherboards have a strong cellular core and a tough co-extruded outer layer. This outer layer provides additional impact and scratch resistance as well as excellent Ultra-Violet protection.

Pallside's uPVC cellular foam construction absorbs most expansion and contraction within itself<sup>1</sup> and allows the board to be face nailed without the need of pre-drilling or expansion slots.

Pallside weatherboards are 5.8m long with a double profile. This enables them to be installed quickly and boards can be joined off stud<sup>2</sup> further helping to reduce wastage.

Pallside weatherboards are available in two shapes and in a range of colours (refer to paragraph 5.6). The **Rusticated** weatherboard is available in a *smooth* or *woodgrain* finish. The **Traditional** (bevel-backed) weatherboard is available in a *smooth* finish only. A full range of custom designed accessories is also available to complement and finish the Pallside weatherboard system.

Forget the thought of rotting, peeling weatherboards and forget the sanding, scraping and painting. Get on with life with Pallside, the Smart Choice in Weatherboards.

## 1.2 Product Information

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Pallside is suitable as an exterior cladding subject to the design scope and details specified in this technical guide.

Over time there will be gradual fading and chalking of colours as is standard with all exterior pigmented finishes. This will not affect the long-term durability and weather protection of Pallside. Chalking can be removed by periodic cleaning (refer to paragraph 4.1 in this Technical Guide).

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1. Pallside weatherboards have a thermal expansion coefficient of  $3 \times 10^{-5}$  per °C
  2. Providing that the flat soaker option is selected.



## 1. INTRODUCTION

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### 1.4 Independently Assessed

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As well as our own testing, Palliside Weatherboards have undergone independent structural, durability and weathertightness assessment at BRANZ.

Two BRANZ Appraisals are available on request.

Palliside Weatherboard System for Direct Fix Construction - Appraisal No. 490 (2015).

Palliside Weatherboard System for Cavity Construction - Appraisal No. 491 (2015).

### 1.5 Continual Improvement

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Dynex Extrusion Limited value feedback and correspondence that helps to ensure that the product literature is accurate and kept up to date.

If you believe there is an area we have over looked or have any suggestions that will assist others in working with and installing Palliside please let us know.

To contact us, please refer to contact details shown on the back page of this document.

# SCOPE AND SPECIFICATION

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## 2.1 Site Requirements

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The site on which the building (to be clad in Palliside) is situated must comply with the requirements of NZBC Acceptable Solution E1/AS1.

Foundation design, in all cases, must be either timber or concrete pile, or concrete slab in accordance with NZS 3604.

### 2.1.1 Ground Clearances

Minimum ground clearances specified in Table 18 of NZBC Acceptable Solution E2/AS1 must be observed when setting out Palliside weatherboards. Weatherboards must be kept clear of paved surfaces by a minimum of 100mm and unpaved by a minimum of 175mm. The setting out must also take into consideration the chosen starting accessory ensuring that the base of the board has a minimum overhang of at least 50mm below the bottom plate.

### 2.1.2 Ground Level Timber Framing

When installing Palliside direct to the frame on a concrete slab the setting out of framing at ground floor level needs to be offset horizontally by a minimum of 6mm to prevent capillary action (refer CAD detail DF05)<sup>1</sup>.

Palliside weatherboards must overlap the timber floor structure by at least 50mm.

Note:

This 6mm offset is not required when installing Palliside over a drained cavity.

## 2.2 Structure Requirements

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Palliside may be installed utilising one of the following methods:

- **Fixed directly to timber frame.**
- **Fixed to timber frame over a drained cavity.**
- **Fixed to steel framing with the allowance for a thermal break between the framing and the Palliside.**
- **Fixed over battens on concrete or masonry walls.**

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1. CAD detail can be found on the Palliside website ([www.palliside.co.nz/CAD](http://www.palliside.co.nz/CAD)).

## 2. SCOPE AND SPECIFICATION

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### 2.2.1 Timber Framing

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. In all cases studs must be at maximum 600mm centres in Low, Medium, High and Very High Wind Zones, and maximum 400mm centres in the Extra High Wind Zone and specifically designed buildings. Dwargs must be fitted flush between the studs at maximum 800mm centres.

All framing must be true to provide a level surface for fixing. As a guide a deviation of 4mm measured from a 2.4m straight edge is the maximum deviation recommended.

A maximum moisture content of 18% is recommended prior to final straightening and application of the building underlay/rigid sheathing and Palliside.

### 2.2.2 Timber Treatment

Timber wall framing must be treated as required by NZBC Acceptable Solution B2/AS1.

### 2.2.3 Steel Framing

Steel framing must be to a specific design in accordance with NASH 3405 design requirements, while meeting the requirements of the NZBC.

The minimum framing specification is 'C' section studs and dwargs of overall section size of 75mm web and 32mm flange. Steel thickness must be minimum 0.55mm.

In all cases studs must be at maximum 600mm centres in Low, Medium, High and Very High Wind Zones, and maximum 400mm centres in the Extra High Wind Zone and specifically designed buildings. Dwargs must be fitted flush between the studs at maximum 800mm centres.

A matrix showing set out for Palliside to steel frame can be accessed via the Palliside website ([www.palliside.co.nz/steelframe](http://www.palliside.co.nz/steelframe)).

## 2.3 Bracing

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Palliside weatherboards do not have any bracing qualities and cannot be used as a substitute for bracing panels.

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## 2.4 Wind Loading

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The Palliside weatherboard system has been structurally tested by BRANZ and meets the requirements for Wind Zones up to and including Extra High as defined by NZS3604 and for specific design wind pressures up to and including design differential 2.5kPa Ultimate Limit State (ULS).

- For Wind Zones up to and including Very High, stud spacings can be at a maximum 600mm centres.
- For Wind Zones greater than Very High and for wind pressures up to and including design differential 2.5kPa (ULS), stud spacings must be reduced to maximum 400mm centres.

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, and rigid underlays for buildings in the Extra High wind zone and specifically designed buildings up to 2.5kPa design differential ULS wind pressure.

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 Palliside fixing lengths must be increased by a minimum of the thickness of the underlay.

## 2.5 Establishing Weathertightness Risk

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As with all exterior claddings a risk assessment of the proposed design needs to be carried out in accordance with Tables 1 and 2 of NZBC Acceptable Solution E2/AS1.

Once the risk score for each elevation has been defined, the decision can be made whether to install Palliside weatherboards **direct to the frame** or over a **drained cavity**.

- **For elevations with a score calculated at between 0 and 12 points Palliside weatherboards can either be installed direct to the frame or over a drained cavity.**
- **For elevations with a score calculated between 13 and 20 points Palliside weatherboards must be installed over a drained cavity.**

### 2.5.1 Jointing Limitation - Direct to the Frame Weathertightness Risk Score 7-12

When installing Palliside direct to the frame the Palliside moulded flat soaker is only suitable for installations up to 6 points.

For elevations calculated between 7 and 12 points the Palliside 2-part flat jointer must be used as the jointing option (with the base of this jointing option fixed on the stud before cladding of weatherboards commences).

**Note:**

When installed over a drained cavity the Palliside moulded flat soaker is suitable for all elevation scores up to 20 points.



## 2. SCOPE AND SPECIFICATION

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### 2.6 Weathertightness

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It is the responsibility of the Architect/Designer:

- To recommend an appropriate solution for any flashing detail relevant to the project and,
- To include standard Palliside CAD details on the consented plan drawings and,
- To provide robust detailing of any area not addresses by published Palliside literature and,
- To ensure that Palliside is specified in accordance with its design and scope of the use.

It is the responsibility of the Builder/Product Installer:

- To ensure that Palliside is installed in accordance with the consented plan and,
- To make sure that Palliside is made weathertight using appropriate Palliside components and,
- To only install Palliside in accordance with the published CAD details and installation literature.

Where applicable, all customised flashings must be designed, made and installed in accordance with this document and/or consistent with those shown in NZBC Acceptable Solution E2/AS1.

All Palliside components have been specically designed for use within the overall Palliside weatherboard system and they must not be used for purposes outside this scope or design.

### 2.7 Fire Properties

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Palliside weatherboards do not have a peak heat release or total heat release rating. The Palliside cladding system is suitable for use on buildings with a SH Risk Group classification, a building height of  $\leq 10\text{m}$  high and a distance of  $\geq 1.0\text{m}$  to the relevant boundary. Refer to NZBC Acceptable Solutions C/AS2 - C/AS6 Paragraph 5.8.1 for the specific exterior surface finish requirments for other building Risk Groups.

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## 2.8 Building Underlay

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When installing Palliside direct to the frame an **absorbent** building underlay complying with NZBC Acceptable Solution E2/AS1 Table 23 must be installed over the framing.

Note:

Some synthetic flexible building underlays are not suitable for use with direct fixed non-absorbent claddings (such as uPVC, Steel or Aluminium), as they do not have a minimum absorbency rating of 100g/m<sup>2</sup>.

In the situation where Palliside weatherboards are to be installed over a drained cavity it is not necessary for the building underlay to be absorbent.

The installer needs to ensure that the method of fitting the building underlay is addressed in accordance with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.7, or in accordance with the manufacturer's instructions.

Flexible underlays must be installed as tight as possible, be continuous around corners, lapped 75mm minimum at horizontal joints and 150mm over studs at vertical joints. Special care should be taken above and around all openings and all punctures or tears must be repaired.

Generic rigid underlay 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.

### 2.8.1 Dressing Around Openings

The installer needs to ensure that the method of fitting the building underlay around openings is addressed in accordance with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.5.

Flashing tapes across the sill and at corners of openings shall be installed in accordance with the relevant manufacturers or distributors instructions.

### 2.8.2 Air Barriers

In accordance with NZBC Acceptable Solution E2/AS1, any exterior walls that are not to have an internal lining (such as attic spaces or gable ends) must have a rigid sheathing or air barrier complying with Table 23 fixed to the framing prior to fixing the cladding or cavity battens.

For attached garages, wall underlays must be selected in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.4.

### 2.8.3 Airseals

Windows, doors and other penetration openings shall be fitted with flexible air seals that comply with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.6.

## 2. SCOPE AND SPECIFICATION

### 2.9 Joinery Fabrication

When selecting new aluminium joinery with Pallside weatherboards, ensure your selected aluminium joinery fabricator is aware of the depth of the Pallside jamb detail.

While there is a difference between the depth of the traditional and rusticated profiles, the Pallside jamb flashing base is suitable for use with either profile and has a depth of 26mm. This is important for window fabrication to ensure the window is set out correctly.

Depth to Allow for Aluminium Joinery Fabrication			
Pallside Profile Type	Depth of Profile <sup>2</sup>	Fabricator to allow <sup>3</sup>	
		Direct Fix	Drained Cavity <sup>4</sup>
<b>Rusticated</b>	17.8mm	26mm	46mm
<b>Traditional</b>	21.0mm	26mm	46mm

Note:

We also suggest allowing for an additional 1mm-2mm above the dimensions shown in the joinery setout table to allow for thickness of flashing tapes around the window opening.

#### 2.9.1 Aluminium Joinery Fabrication Parameters

The aluminium fabricator must ensure that all aluminium joinery is sized to allow for a minimum flange overhang of the cladding material or associated back flashing of 10mm at the jamb and 8mm at the sill, as specified in NZBC Acceptable Solution E2/AS1 Paragraph 9.1.10.

Joinery must be fabricated ensuring there are no screws that sit proud to the head of the joinery.

Window sizing must allow for the provision of an airseal complying with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.6 to be applied after the windows have been installed.

#### 2.9.2 Head Flashings

The prefinished and modular nature of Pallside makes the use of the system's 2-part head flashing more practical (installed in front of the battens in combination with a cavity closer as shown in CAD detail DC01). This method has successfully undergone testing to the building code verification method E2/VM1. For direct fix refer to CAD detail DF01.

Alternatively, the use of the more conventional head flashing layout (utilising a standard aluminium type head flashing) is acceptable. When using this method, it is important to consider that it may be difficult to fit the cut board around the head flashing (particularly when joinery is close together) and the use of additional joiners (flat soakers) at this height may become necessary.

2. Nominal.

3. In addition to depth of framing, internal lining, and where applicable rigid air barriers.

4. Providing that the jamb flashing base and nominal 20mm cavity battens are used. If jamb flashing base is not used, allow for profile depth plus cavity batten depth.

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### 2.9.3 Sill Trays

When installing Palliside in a direct fix configuration a flat sill tray must be provided. This needs to meet the requirements of NZBC Acceptable Solutions B2/AS1 and E2/AS1, refer to Palliside Window Sill Layout (CAD Detail DF04).

## 2.10 Weatherboard Installation outside the scope of this document

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The Architect/Designer is responsible for detailing Palliside in accordance with the scope of this document. While it may be possible to use Palliside weatherboards and accessories for other applications not covered within this Technical Guide, written permission must be sought by Dynex Extrusions Ltd. Refer to contact details later in this document.

## 2.11 Scaffolding

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Palliside weatherboards must be installed from the base up. For applications where the wall cannot be accessed from ground level such as 2-storey applications, a freestanding scaffold is required.

Unlike many other claddings, selecting Palliside ensures that scaffolding can be removed quickly once the weatherboards (including trims) have been installed, as there is no need for painting, staining or plastering.

## 2.12 Drained Cavities

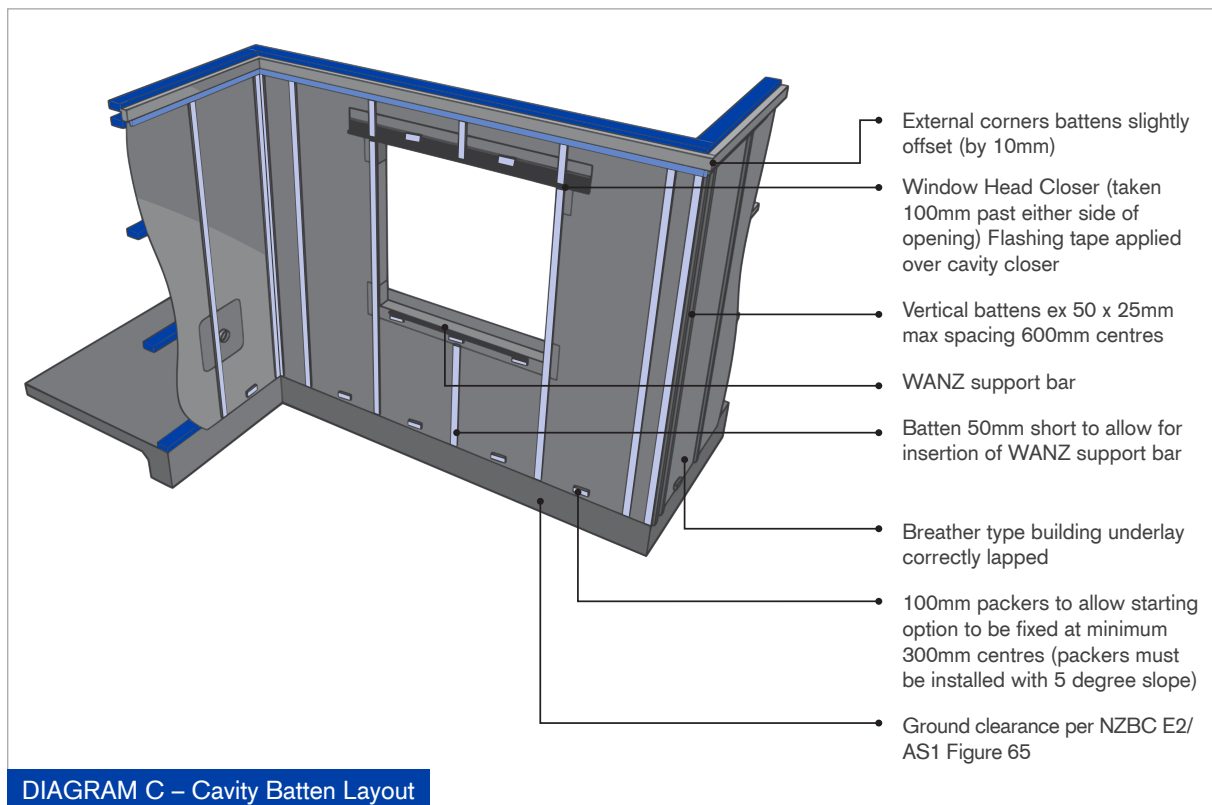
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### 2.12.1 Layout

A drawing showing typical cavity batten layout (refer Diagram C on page 14 and CAD detail DC39) can be accessed from the product website ([www.palliside.co.nz/CAD](http://www.palliside.co.nz/CAD)) and the following should be applied:

- (a) All Vertical battens must be installed at maximum 600mm centres when studs are at 600mm centres, and 400mm centres when studs are at 400mm centres.**
- (b) A continuous horizontal batten is permissible at the soffit only, for use of castellated battens refer 2.12.4.**
- (c) Spacers are required to allow Palliside horizontal starting trims to be fixed at the required 300mm centres. If installing Palliside to a timber subfloor these spacers should be vertically fixed. Horizontal spacers may also be used providing that they are:**
  - A maximum 100mm in length.
  - Installed with a minimum slope of 5°.
  - Spaced at least 100mm away from any vertical batten or edge of window opening.

## 2. SCOPE AND SPECIFICATION



### 2.12.2 Cavity Battens

In accordance with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.8.4, Cavity Battens should be:

- (a) Nominal 20mm (between the limits of 18mm and 25mm) in thickness.
- (b) At least the same width as the stud.
- (c) Made of timber treated as required by NZS 3602 or,
- (d) Proprietary cavity battens covered by a valid BRANZ Appraisal.

### 2.12.3 Fixing of Battens

For Wind Zones up to and including Very High, cavity battens can be structurally fixed (allowing for a standard 40mm x 2.5mm Palliside Nail to be used to install the boards). If not structurally fixed then a HDG 60mm x 2.8mm flat head nail must be used to fix the Palliside through the cavity batten.

For installations in Wind Zones above Very High, Palliside must be nailed through the batten using HDG 60mm x 3.15mm annular groove nails regardless of the type or method of fixing the cavity batten.

- A structural batten must be minimum “H3.1 treated MSG 8 framing grade quality” and must be fixed at maximum 500mm centres using 60mm x 2.8mm HDG flat head nails (or 64mm x 2.8mm air driven nails)<sup>5</sup>.

5. This method has been verified by BRANZ.

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## 2.12.4 Vermin-proofing

The requirements for Vermin-proofing are set out in NZBC Acceptable Solution E2/AS1 Paragraph 9.1.8.3.

The Palliside weatherboard system includes a vermin tray that meets requirements of this clause and can be attached to the base of the starter strip when installing over a concrete floor. For other applications standard vermin-proofing must be used behind all gaps greater than 4mm.

Castellated battens may be installed horizontally below joinery or used as an alternative to standard vermin protection of the cavity providing that they meet standard durability requirements, allow for the minimum ventilation of 1000mm/m<sup>2</sup> and are sloped to the top edge by 20 degrees.

## 2.12.5 Inter-Storey Junction Requirements

When installing Palliside over a drained cavity and the wall to be clad is greater than 7 metres or 2 storeys in height, NZBC Acceptable Solution E2/AS1 paragraph 9.1.9.4 stipulates that a horizontal inter-storey drainage flashing is required. The requirements for this can be accessed via [www.palliside.co.nz/CAD](http://www.palliside.co.nz/CAD) (refer CAD detail DC42).

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## 2.13 References

- **AS/NZS 1170: 2002 Structural design actions.**
- **NZS 3602: 2003 Timber and Wood-Based Products for use in Building.**
- **NZS 3603: 1993 Timber Structures Standard.**
- **NZS 3604: 2011 Timber Framed Buildings.**
- **NZS 4211: 2008 Specification for Performance of Windows.**
- **Compliance Document for the New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005 (Amendment 5, 1 August 2011).**
- **Ministry of Business, Innovation and Employment Record for Compliance Documents and Handbooks.**
- **The Building Regulations 1992.**

# DESIGN

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## 3.1 Design Considerations for Palliside

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### 3.1.1 CAD Details

A wide range of specific two dimensional details are available for designing with Palliside for both direct fix and drained cavity construction. These details are accessible from the product website ([www.palliside.co.nz/CAD](http://www.palliside.co.nz/CAD)).

Palliside system details and cladding junctions relevant to the design must be included within the consented plans. Please be aware that in many cases, the details show an indicative method of how to meet the requirements of NZBC Acceptable Solution E2/AS1. Alternative methods of installation may be possible, providing that they demonstrate the use of robust weathertightness principles.

The inclusion of these details in a plan does not exempt the installer from familiarising themselves with other relevant published Palliside literature.

### 3.1.2 Longer Length Weatherboards

While Palliside weatherboards are manufactured to a standard 5.8m length, longer boards can be made to order (up to 8.0m). Minimum order levels and leadtimes apply, so it is worthwhile talking to Dynex about any specific requirements you may require.

To support the installation of these longer boards we recommend the use of 40mm x 2.8mm HDG annular groove type nails, (60mm x 2.8mm when installed over a cavity). Alternatively, a Class 4 type, 8-gauge countersunk screw of equivalent length may be used.

### 3.1.3 Jointing Options and Extra Long Wall

It is worthwhile considering the placement of weatherboard joins at the design stage in order to minimise the number along each wall, e.g. strategic placement of the Palliside 2-part jointing option, so that it can be covered by a downpipe. Customised longer lengths may also work in minimising the number of jointers required per elevation.

**Note:**

For walls where a course of weatherboards is going to extend beyond 20m in a run unbroken by a corner or window, we recommend that the designer/architect contact Dynex during the design stage to discuss jointing and fixing options in more detail.

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### 3.1.4 Timber Facings and Corners

If preferred a series of drawings are available covering the use of timber facings, planted sills and boxed corners to provide additional character to the finish around openings and corners.

These drawings can be accessed via [www.palliside.co.nz/CAD](http://www.palliside.co.nz/CAD) (refer CAD details DF32-35 or DC32-35).

### 3.1.5 Vertical and Diagonal Installation

While it is possible to install Rusticated Palliside weatherboards vertically such applications require careful consideration in both their design and installation. The tapering nature prevents the traditional profile from being installed vertically.

Careful consideration needs to address the method of flashing around openings, avoiding the scallop of the profile finishing at the side of a window. A custom-made window flashing system may be required to complete this method of installation to the satisfaction of the applicable Building Consent Authority.

- **For vertical installation the weatherboard should be installed so the lap of the weatherboard is placed away from the prevailing wind.**
- **Dwangs must be reduced to 600mm and the weatherboards installed over a drained cavity with vertical battens spaced as required at the weatherboard cover width of 260mm centres.**

Diagonal installation of Palliside weatherboards is possible and as per vertical installation requires careful consideration into the detailing around openings.

- **For diagonal installation the weatherboard should be installed so the lap of the weatherboard is placed away from the prevailing wind.**
- **Dwangs must be reduced to 600mm and the weatherboards installed over a drained cavity with vertical battens spaced at 300mm centres with each weatherboard fixed at every batten.**

#### Note:

The Architect/Designer is responsible for structural and weathertightness design implications when installing Palliside in either a vertical or diagonal configuration. These applications are also outside the scope of the BRANZ Appraisals.

### 3.1.6 Curved Walls

Palliside can be installed horizontally along a curved wall providing the radius of the wall is at least 3.0m.

For best results it is recommended that the weatherboards are fixed using screws over a rigid sheathing such as plywood to smooth out the radius between studs.

Consideration needs to be made regarding the effect of curved walls on other accessories such as corner options.

### 3.1.7 Coloured Downpipes

Colour matched 80mm Round uPVC Downpipes along with 95 degree bends and clips are available as part of the Palliside range.



### 3. DESIGN

CAD Details					
System Details	Direct Fix	Drained Cavity	System Details	Direct Fix	Drained Cavity
Window Head (recommended)	DF01	DC01	Palliside-Brick Sill Junction	DF29	DC29
Window Sill	DF02	DC02	Palliside-Brick Vertical Junction	DF30	DC30
Window Jamb	DF03	DC03	Palliside Above Joinery Between Brick	n/a	DC31
Sill Layout	DF04	DC04	90° Boxed Timber Corner	DF32	DC32
Starter Strip	DF05	DC05	Timber Facing Window Head	DF33	DC33
90° External Corner Soaker	DF06	DC06	Timber Facing Window Head	DF34	DC34
90° 2-Part External Corner Boxed	DF07	DC07	Timber Facing Window Jamb	DF35	DC35
90° 2-Part Internal Corner Boxed	DF08	DC08	Palliside Wall/Fascia Junction	n/a	DC36
Flat Soaker Joint	DF09	DC09	135° 2-Part boxed Corner	DF37	DC37
2-Part Boxed Joint	DF10	DC10	Alternative Cavity Head Flashing Detail	n/a	DC38
Finish at Soffit	DF11	DC11	Cavity Batten Layout	n/a	DC39
Parapet/Enclosed Balustrade	n/a	DC12	Window Head Layout	DF40	DC40
Meter Box Head	DF13	DC13	Enclosed Deck Starter Layout	DF41	DC41
Meter Box Jamb	DF14	DC14	Inter-storey Drainage Joint	n/a	DC42
Meter Box Base	DF15	DC15	Timber Floor Layout	DF43	DC43
Non Cantilevered Deck Junction	DF16	DC16	Door Sill Layout	DF44	DC44
Apron Flashing Raked	DF17	DC17	Garage Door Jamb	DF45	DC45
Apron Flashing Horizontal	DF18	DC18	Garage Door Head	DF46	DC46
Gutter Wall Apron	DF19	DC19	Palliside Rake Finish - Traditional	DF47	DC47
Pipe Penetration	DF20	DC20	Palliside-Profiled Metal - External Corner	n/a	DC48
Wall Fascia Junction	DF21	DC21	Palliside-Profiled Metal - Internal Corner	n/a	DC49
Reverse Raking Soffit	DF22	DC22	Palliside-Profiled Metal - Vertical Joint	n/a	DC50
Parapet/Enclosed Balustrade	n/a	DC23	Palliside-Plaster - External Corner	n/a	DC51
Parapet/Wall Junction	n/a	DC24	Palliside-Plaster - Internal Corner	n/a	DC52
Non-standard Corner	DF25	DC25	Palliside-Plaster - Vertical Joint	n/a	DC53
Palliside-Brick External Corner	DF26	DC26	Palliside-Plywood - External Corner	n/a	DC54
Palliside-Brick Internal Corner	DF27	DC27	Palliside-Plywood - Internal Corner	n/a	DC55
Palliside-Brick Inter-storey	DF28	DC28	Palliside-Plywood - Vertical Joint	n/a	DC56

#### Note:

Drawings are diagrammatic and are not intended to be scaled. For exact dimensions of any of the Palliside system componentry please contact Dynex Extrusions Ltd.

# MAINTENANCE AND PAINTING

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## 4.1 Maintenance and Cleaning

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The appearance of Palliside, like other exterior finishes, is best maintained by periodic cleaning, especially to the south side of the home and areas that do not receive as much sun light. Any build-up of residue, mould or dirt can be removed easily by soapy water or the use of a sprayed on hypochlorite cleaner such as '30 Seconds' followed by washing down with water.

Avoid using abrasive cleaners, which may have a tendency to cause a dulling of the surface of the Palliside finish. Note: Cleaning with thinners, petrol or solvents should be avoided.

All areas where flashings, sealants and penetrations occur should be checked regularly to ensure that their integrity is intact. If any deterioration has taken place, sealants should be reapplied or further action taken if required. Checking such areas should form part of a regular maintenance check, which should also include clearing of spouting and blocked pipes.

## 4.2 Painting Palliside

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If required, Palliside weatherboards and trims can be painted. The paint colour must have a TSR value (total solar reflectance) equal to or greater than 62%. For further clarification on the suitability of a colour please contact Dynex Extrusions Ltd.

**While the following instructions are given as a guide we would always recommend seeking advise from a qualified painter and/or paint supplier before undertaking such work.**

To prepare the surface prior to painting, either use soapy water or a sprayed-on hypochlorite cleaner such as '30 Seconds' followed by washing down with water. This removes any filmy residue that can prevent the paint from adhering to the boards as well as removing built up residue on weatherboards that have been installed some time ago.

Ensure that any cleaning agent is thoroughly rinsed off and the surface has dried before paint application begins.

Apply two coats of the desired colour using 100% acrylic paint.

**Note:**

A colour's LRV (light reflectance value) should not be used to determine suitability even if the colour has the same LRV value of an existing Palliside colour. For further clarification on the suitability of a colour please contact Dynex Extrusions Ltd.

## 4. MAINTENANCE AND PAINTING

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### 4.3 Matching Palliside Colours

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If required, trims etc can be colour-matched to the Palliside colours. Matching paint formulations can be made up by your local paint manufacturer. It is also possible to get a spray can of colour matched spraypaint for all Palliside colours. For more information on matching paint colours see paragraph 5.9 of this document.

### 4.4 Graffiti Removal

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Graffiti can be removed by applying the following method. For best results it is necessary to remove any graffiti as soon as possible and preferably within 48 hours of the graffiti taking place.

Using a kitchen Scotch Bright with liberal amount of Methylated Spirits, lightly rub the affected area. Take care not to apply too much pressure which may mark the Palliside if approached too vigorously. Do not become alarmed when the surface appears very messy due to the liquidising of the ink/paint, which causes the graffiti to seemingly spread over a wider area of the surface. Use a rag liberally coated in Methylated Spirits to wipe clean the affected area. Continue this process until the residue has been removed.

Other products available from your local hardware store such as 'Philm Off – Quikleen' or 'De-Solv-It' may also be applied. Like the methylated spirits, the initial contact of the cleaner may give the appearance of causing the graffiti to spread. This will cease and the ink/paint disappear on the continuation of wiping the surface with a rag and cleaner.

When using cleaners it is advisable to wash the surface down immediately once the graffiti has been removed to remove excess cleaner from the weatherboard.

### 4.5 Replacing Damaged Weatherboards

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Depending on the situation damaged Palliside weatherboards can be repaired or replaced by a skilled tradesman. For further details and suggested procedure on how to repair or replace Palliside weatherboards contact Dynex Extrusions Ltd or visit the website [www.palliside.co.nz](http://www.palliside.co.nz)

# TECHNICAL SUMMARY

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## 5.1 Compliance with the New Zealand Building Code

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The Palliside Weatherboard System meets the requirements of the NZBC as an Alternative Solution.

## 5.2 BRANZ Appraisal

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Palliside has been appraised by BRANZ and is covered by the following Appraisals:

- No. 490 (2015) (Palliside Weatherboards installed direct to the frame)
- No. 491 (2015) (Palliside Weatherboards installed over a drained cavity)

## 5.3 Material

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The Palliside weatherboard system comprises extruded foamed uPVC weatherboards with a co-extruded Ultraviolet protection uPVC exterior layer. The range of accessories are either extruded or injection moulded utilising UV protected impact modified uPVC.

## 5.4 Weight of Board

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The Palliside weatherboard system is defined as a light weight wall cladding in accordance with NZS 3604.

Palliside weatherboards have a nominal weight of 8.4kg per 5.8m weatherboard (5.58kg/m<sup>2</sup>) or 1.45kg per lineal metre.

## 5.5 Durability

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Palliside is manufactured from uPVC which is impervious to moisture. Accordingly it will not rot or corrode and Palliside is resistant to attack from termites and vermin.

## 5. TECHNICAL SUMMARY

### 5.6 Colours

The following colours are available in all weatherboard choices (Traditional, Rusticated Smooth, and Rusticated Woodgrain). If required a set of samples can be obtained from Dynex Extrusions Ltd.

Calico	Riverstone	Sandstone	Slate	Tea	White
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### 5.7 Painting

Pallside weatherboards and trims can be painted, providing that the paint colour used does not increase the heat absorption and therefore expansion and contraction of the boards. For more information on painting see paragraph 4.2 of this document.

### 5.8 Colourfastness

Pallside has been formulated for use in our harsh climate but like all coloured surfaces incorporating pigments it will experience some colour change with time. The rate of change will be dependent upon the installation situation and will manifest itself as fading or lightening of the surface. Any chalking that may occur but can be removed by periodic cleaning of the product. Any colour change will not affect the performance of the Pallside weatherboards.

### 5.9 Matching Pallside Colours

Matching finishes for the Pallside Weatherboard colours can be sourced from your local paint supplier. Details below should provide the supplier with relevant details on matching the chosen Pallside colour.

Pallside Colour	Taubmans/Wattyl (formula Ref)	Dulux (formula Ref)	Resene (formula Ref)	Powdercoat Colour
Calico	Pallside Calico (59803)	Calico <sup>1</sup> (EE16 M1)	Pallside Calico (MPAL13)	Off White 08/06 (915 58804)
Riverstone	Pallside Riverstone (59805)	Riverstone <sup>1</sup> (EE7 G1 LL1 M5)	Pallside Riverstone (MPAL10)	O'Keefe Grey 05/07 (915 58721)
Sandstone	Pallside Sandstone (59804)	Sandstone <sup>1</sup> (EE11 LL7 M4)	Pallside Sandstone (MPAL11)	Rivergum Beige (Interpon D1010, GD185A)
Slate	Pallside Slate (59806)	Slate <sup>1</sup> (EE4 LL1 M7)	Pallside Slate (MPAL12)	Silver Quill 02/06 (288 58728)
Tea	Traditional Tea (29769)	Half Tea (tinting EE8 G1 M3 - 1)	Pallside Tea (MPAL6)	Light Grey Gloss (ML029A)
White	White	White	Pallside White (MPAL5)	Appliance White 07/05 (915 58853)

1. Dulux Vivid White Base - 1 L.

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## 5.10 Impact Resistance

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Palliside has been tested to and meets the impact requirements of AS 2921 Appendix B for soft body impacts. This test simulates the impact the weatherboards would be subjected to with a large adult falling into the weatherboard with an impact energy of 250J minimum directed between the studs. In addition Palliside meet the hard body impact requirements of 44J which simulates the impact from the likes of stones etc.

## 5.11 Thermal Resistance

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Palliside weatherboards have a thermal resistance of  $0.18\text{m}^2 \text{ }^\circ\text{C}/\text{W}$ . As such, installations using Palliside require additional insulation to comply with the requirements of NZBC Clause H1 Energy Efficiency. As with all claddings, the thermal resistance value is reduced by 45% when installing over a 20mm cavity.

## 5.12 Internal Moisture

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Buildings must be constructed with an adequate combination of thermal resistance and ventilation, and space temperature must be provided to all habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or may accumulate.

## 5.13 Thermal Expansion

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Palliside has a thermal expansion coefficient of  $3 \times 10^{-5}$  per  $^\circ\text{C}$ . The recommendations for fixing allow for this expansion (5mm per length), which takes place primarily in the length of the plank.

Weatherboards must not be cut to a tight fit between accessories. The light colour of the board reflects solar heat keeping the surface temperature of the cladding low and minimising expansion.

## 5.14 Technical Data Sheet - Fasteners

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Refer to Paragraph 1.5 of the relevant installation guide for information on fixings.

## 5.15 Sealants

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Colour matched MS Sealant is available as part of the Palliside product range. White MS Sealant is available from building merchants.

Otherwise, Neutral Cure and MS Sealants may be used with the Palliside Weatherboard System. These Sealants must meet the requirements of the NZBC. Acid Cure Sealants must not be used with the Palliside Weatherboard System.

## Contact Details

For further information visit the website ([palliside.co.nz](http://palliside.co.nz)) or alternatively contact:

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