

PERMADECK Latitude Composite Decking Boards

Product Technical Statement
TWL PTS 3256-01
10 March 2014

Technology **works**
UNITEC

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1 Product



1.1 PERMADECK™ decking boards are a polymer and wood fibre composite material used as an substitute for timber decking.

PERMADECK™ offers the following different decking board profiles plus various finishing fascia's and trims:

- Latitude EverX (23.9mm thick ribbed)
- Latitude Architectural (23.9mm thick solid)
- Latitude Marine (31.8mm thick solid)

1.2 The material used to extrude these boards uses Strandex Technology. The Strandex technology fully encapsulates recycled wood fibre in a UV Stable recycled plastic.

1.3 All PERMADECK™ products are quick and easy to install. Cutting PERMADECK™ is similar to working with MDF, being easy to saw, cut and plane. It can be mitred, planed and drilled as necessary.

1.4 The products are manufactured by:

UFP Venture II, Inc.
1801 E. Lessard St
Prairie du Chien,
Wisconsin WI 53821
USA

2 Statement Purpose

2.1 Product Technical Statements have been introduced by the NZ Department of Building & Housing, in their "Using the Product Assurance Framework to Support Building Code Compliance – A guide for Manufacturers and Suppliers of Building Products – April 2010", as a response to providing a range of product certification.

2.2 Product Technical Statements are a technical information statement intended to summarise technical information for the NZ market to address the needs of designers, specifiers, builder, building owners and building consent officials.

3 Scope

3.1 The PERMADECK™ decking boards have been assessed for use as external decking material, as an alternative to timber or other conventional materials, within the following scope:

3.1.1 The New Zealand Building Code (NZBC):

- Clause B1 Structure
- Clause B2 Durability
- Clause C1 Fire
- Clause D1 Access
- Clause F2 Hazardous Building Materials

3.1.2 Other Scope Limitations:

PERMADECK™ boards do not perform the function of structural bracing elements. Where bracing is required by the NZBC, a separate bracing system shall be provided.

3.1.3 Conflict in Documentation

In the event of a conflict between any information contained within this Product Technical Statement and any clause in any other specification or drawings, this Product Technical statement shall take precedence.

4 Building Regulations

4.1 Technologyworks Ltd consider, based on information contained within:

- a) the scope of this product technical statement, and
- b) the ICC-ES Evaluation Report ESR-1573 dated 1 June 2013, and
- c) the CCMC Evaluation Report 13378-R dated 22 July 2011, and
- d) PERMADECK™ Installation Guidelines

that, if manufactured, designed, used, installed and maintained in accordance with the above documents, the PERMADECK™ Latitude Evertex, Architectural and Marne decking boards, will provide an Alternate Solution in terms of the New Zealand Building Code compliance that meets the provisions of the following compliance documents for NZBC:

Clause B1 STRUCTURE: Performance-Acceptable Solutions B1/AS1 (NZS 3604 : 2011 - 7.4 Timber Decks)

Clause B2 DURABILITY: Performance - B2.3.1(b) 15 years Acceptable Solutions B2/AS1

Clause C1 FIRE
Acceptable Solution C/AS1 (Residential Risk Group SH)

Clause D1 ACCESS
Acceptable Solution D1/AS1
Clause 2 Level Access Routes

Clause F2 HAZARDOUS BUILDING MATERIALS
F2.3.1

5 Design Requirements

5.1 General design guidance is covered by the documentation on the PERMADECK™ website (www.permadeck.co.nz).

5.2 New Zealand specific design shall be in accordance with the relevant sections of the Compliance Document for NZ Building Code - Clause B1 Structure – Acceptable Solution B1/AS1 and subject to the following additional requirements:

5.2.1 Joist Spacing

The following reduced joist spacing/span shall be substituted for the joist spacing/span

requirements in section 7 and 14 of NZS 3604:2011

EverX and Architectural Boards (23.9mm thick)

2kPa (Wet in service)	Cr to cr Span (m) at 400mm crs
140*45 joist	1.5
190*45 joist	2.7
240*45 joist	4.0
290*45 joist	4.9
3kPa (wet in service)	
140*45 joist	1.1
190*45 joist	1.9
240*45 joist	3.2
290*45 joist	4.0

Marine Boards (31.8mm thick)

2kPa	Cr to cr Span (m) At 400mm crs	Cr to cr Span (m) At 600mm crs
140*45 joist	1.5	1.5
190*45 joist	2.6	2.4
240*45 joist	4.1	3.9
290*45 joist	4.9	4.0
3kPa wet (decking)		
140*45 joist	1.0	1.0
190*45 joist	1.9	1.8
240*45 joist	3.4	3.2
290*45 joist	3.9	3.4

5.2.2 Supporting Timber Framing

- grade, spacing, moisture content and construction shall be in accordance with NZS3604:2011
- treatment shall be in accordance with NZS3602

6 Installation Instructions

6.1 General installation, handling and storage are covered by documentation on the PERMADECK™ website (www.permadeck.co.nz)

6.2 New Zealand specific installation shall be in accordance with the following:

6.2.1 Handling & Storing

PERMADECK™ composite decking should be stored covered, flat and off the ground. Standard 5800mm long packs of PERMADECK™ require a minimum of eight gluts (supports) under the length of the pack.

6.2.2 Foundation & Sub-structure

PERMADECK™ composite decking should be connected to supporting timber joists, except where being used for a non-structural floating deck overlay.

PERMADECK™ composite decking is not suitable for use with steel supporting, attaching directly to an adjacent structure or any part of a watertight flooring system.

To allow for surface water runoff away from any adjacent structure a fall of no less than 3mm per metre shall be incorporated in the top levels of the supporting joist.

PERMADECK™ decking will follow the alignment of the supporting joists, therefore it is important that:

- care is taken to ensure joists are in line, straight and square.
- the maximum joist span and spacing specific for each profile is not exceeded (refer Section 5.2.1)
- decking is fully supported by the joists
- any overhang of decking boards at the ends or sides of the deck should not exceed 50mm.
- the temperature of the planks be the same at the time of cutting and installation.

6.2.3 Gapping

PERMADECK™ board design is based on the provision of gapping around the boards to aid air flow, drainage and expansion and contraction.

A 5mm gap shall be provided between each PERMADECK™ composite decking board and up to a 6mm gap between the plank ends and breaker board (see section 6.2.4. below for expansion gapping).

The Hidden Fastener deck clips provide the recommended gaps between the sides of the planks for air flow and drainage.

6.2.4 Expansion, Contraction & Breaker Boards

PERMADECK™ composite decking planks are susceptible to temperature variations and expand when temperatures increase. This expansion must be allowed for when planning the layout of boards, cutting and installation.

It is recommended that the boards are spread out evenly over the deck surface to allow the planks to be at the same temperature prior to cutting and installation.

PERMADECK™ boards will elongate by a maximum of 1mm per metre when heated from cold (A guide for expected expansion and contraction is provided on the PERMADECK™ website).

The preferred method of deck design incorporates the use of breaker boards that are run across the deck at 90 degrees to the ends of the long boards so that the maximum gap possible is 6mm. This gap can be halved if the board is fixed in the middle with the expansion evenly distributed to either end of the board. Additional joists/supports are required in the substructure wherever a breaker board is being used with the breaker boards being fully supported by a nog or joist. The breaker boards can be screwed directly into the sub-structure.

Butt joining of boards is not recommended.

6.2.5 Fastening the boards to the joists

PERMADECK™ composite decking planks shall be fixed to the joists using the PERMADECK™ hidden fasteners.

PERMADECK™ composite decking breaker boards, starter boards and finishing boards may be screw fixed directly to their supporting timber nogs or joists using minimum 60mm long 305 stainless steel decking screws.

6.2.6 Screw fixing

Pre-drilling and countersinking is recommended for all screw fixing to reduce the risk of splitting.

Drivers should be adjusted to a low or medium torque and screws should not be over tightened into the decking.

6.2.7 Installer Skill Level Requirements

PERMADECK™ decking can be installed by persons with an understanding and experience of deck installation. The installation instructions

from Permadeck Ltd must be followed.

7 Care and Maintenance Requirements

7.1 Mould and Mildew

PERMADECK™ has an antifungal agent added as part of its formulation.

Mould or mildew will however, develop on any hard surface if foreign matter is allowed to build up. If this occurs, it is recommended that the deck is washed using a mild solution of warm water and bleach (such as 30 Seconds Spray & Walk Away), in accordance with the manufacturer's written recommendations for use, and that a test of the solution is carried out on a non- prominent area of the deck in the first instance.

A pressure washer may be used providing the position of the nozzle is no closer than 300mm to the deck surface, as marking may result if the nozzle is located any closer.

7.2 Scratching

The surface of PERMADECK™ will conceal minor scratches, but will gouge and mark if heavy objects are dragged across the surface.

It is recommended that protective mats or furniture pads are used to protect against high point loads such as thin furniture legs, BBQ's or planter stands.

Larger scratches can be removed by lightly sanding the face of the board or using a good wire brush. Please note that heavy sanding will mark the surface, although this will fade as it weathers.

7.3 Staining

The PERMADECK™ composite decking surface will stain if oil, grease, wine, plant matter or rust is allowed to remain on the surface and penetrate the fibres.

To prevent staining clean the area immediately, before it has the opportunity to soak into the cellulose fibre.

A strong solution of detergent and hot water, applied immediately after the spill has occurred, will remove most stains. Always test the cleaning solution in a non-prominent area of the deck to make sure that the solution will not bleach the colour.

In order to avoid grease staining, a protective mat placed over the decking and covering the area immediately around BBQ's is recommended.

7.3.1 Painting or Staining

PERMADECK™ does not require any painting or staining over the life of the product.

If it is intended to paint over the boards then it is recommended that a sample or off cut of PERMADECK™ is provided to the paint supplier and tested for adhesion before applying to the whole deck surface to ensure that a suitable bond between the deck and the finishing coat is achieved.

8 Product Support

8.1 The products are imported and supplied to the New Zealand market by:

Supplier: Permadeck Ltd
Address: 11 Maru Street
Mount Maunganui 3116
New Zealand
Phone: 07 928 6564
Email: info@permadeck.co.nz
WWW: www.permadeck.co.nz

9 Basis of Assessment

Technologyworks Ltd have carried out an independent assessment of the technical and other information provided by PERMADECK™, including the following:

9.1 The Manufacturers Statement (Appendix A) provided by UFP Ventures II, Inc. that outlines their company background and history, position, performance and acceptance in their market place.

9.2 The manufacturer's Technical Literature has been examined, and found to be satisfactory, subject to the New Zealand specific modifications identified in this statement.

9.3 Materials Manufacture Quality

The products are manufactured by Universal Consumer Products under a quality assurance system that is monitored by an accredited third party (PFS Corporation) with quarterly audits in compliance with ICC-ES (US) and CCMC (Canada).

9.4 Materials Performance Standards Comparison

A comparison on the material, performance and quality parameters of the New Zealand and US/Canadian standards under which decking materials are required to comply with has been undertaken and the US/Canadian Standards have been found to be comparable to the New Zealand Standards.



10 Product Technical Statement Validity

10.1 This product technical statement is valid until further notice, subject to the following:

Sandra D Hardie
CPEng IPEng 175445
date of first issue: 10 March 2014

10.1.1 That this product technical statement:

- relates only the product as described in this product technical statement.
- together with the Appendices shall be read, considered and used as a whole document.
- is copyright to Technologyworks Ltd
- is applicable only in New Zealand

10.1.2 That Permadeck Ltd undertakes to have the product reviewed by Technologyworks Ltd at:

- either five yearly intervals, or at a lesser interval coinciding with such time as the relevant clauses of the Building Code as referred to under this document are revised, or
- when any change is made to the product specification or quality assurance measures, or the manufacturers published brochure, or
- when either of the ICC-ES or CCMC Evaluation Reports is modified or is no longer valid.

11 Liability Disclaimer

Technologyworks Ltd make no representation as to the:

- a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship
- b) any guarantee or warranty offered by Permadeck Ltd.

12 Signature

On behalf of Technologyworks Ltd

Appendix A

Manufacturers Statement

UFP Venture II, Inc.



UFP Ventures II, Inc.

A Universal Forest Products Company

Universal Forest Products, Inc., is a holding company of businesses that combine to create one of the largest producers of wood and wood-alternative products in North America. We are a key supplier to important markets: retail building materials, industrial packaging and components, residential construction, manufactured housing and commercial construction and concrete forming.

We are international, with operations in the United States, Canada and Mexico, and business partners around the globe. We are powered by hard-working people who believe in a strong work ethic, the integrity with which we go about our business, the opportunities we offer to those who are successful, and our work hard/play hard culture. We're known for top-quality products and services, for being companies that are good for their word, and for being employers that reward people who work hard and exhibit an entrepreneurial spirit, whether in an office or a plant.

In 2005, Universal Forest Products began producing Latitudes composite decking and focused on using green practices, strict quality controls, and state of the art technology and design. With Latitudes, you can have it all: a natural-looking composite decking in a variety of finishes with the widest range of colors, railing options and accessories available. Fortified with Strandex® technology, Latitudes provides maximum protection against weathering and insect damage.

Our partner, The Strandex corporation has been dedicated to composite technology for more than 20 years-and their staff has over 200 years of combined experience in extrusion and composites. Decking and railing using Strandex technology has a proven record for strength, durability, and low maintenance. Latitudes decking also has one of the lowest moisture absorption rates in the industry because each "strand" of wood fiber is encased in high-density polyethylene.

**Uncompromising beauty and durability. Unbelievably easy upkeep. Unparalleled design flexibility.
Everything tells you that Latitudes decking and railing is the right way to go.**