



**ROOFING & PROFILES (FIJI) PTE LTD**

**Build With Confidence**

# SuperDek®

Profiles Tested for Cyclonic Conditions



**Colorbond®**

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**RPFL SuperDek® Roofing Profile**

RPFL SuperDek® is a cutting-edge ribbed profile roofing that brings together style, strength, and lasting protection. Designed with stiffeners in the pans for added durability and long spanning capability, this roofing is engineered to excel in domestic, industrial, and commercial applications. The innovative Capillary Flute design prevents the collection of rainwater between sheet laps, eliminating the risk of corrosion. With RPFL SuperDek®, you can trust your roof to withstand the test of time and weather.

**Specifications**

- Profile:** RPFL SuperDek® 5 ribbed Roofing Profile
- Material:** G300 & G550 Steel Coated with AZ150 or AZ200 Zinalume, Z450 Hot Dipped Galvanized and Aluminium Substrate.
- Coating Options:** Colorbond®, Zinalume®, Galvanised
- Thickness:** 0.42bmt, 0.48bmt, 0.55bmt, 0.90bmt (Aluminium Only)
- Minimum Roof Pitch:** 3° (1 in 27)
- Length:** Customizable to suit your project requirements

**Warranty**

As per New Zealand Steel Specification & Installation Guide - March 2011.  
 Note: Warranty will only be provided on Colorbond® XRW®, Colorbond® Ultra® & Colorsteel® Altimate® products.

**Features**

- Resistant to extreme weather conditions
- Excellent water shedding
- Easy installation
- Excellent structural strength

**Why Choose RPFL SuperDek®**

- Proven Performance:** RPFL SuperDek® has been extensively tested to ensure superior performance and longevity.
- Custom Solutions:** We offer a range of customization options to meet your specific project requirements, including different thicknesses and lengths.
- Expert Support:** Our team of roofing professionals is ready to assist you throughout the entire process, from selecting the right profile to providing installation guidance.
- Industry-Leading Warranty:** We stand behind the quality of RPFL SuperDek® profile with a comprehensive manufacturers backed warranty, demonstrating our commitment to customer satisfaction.

**Experience RPFL SuperDek® in Colorbond® XRW®, Colorbond® Ultra® & Colorsteel® Altimate®**

- Colorbond® XRW®** is a world leader in roofing and wall cladding applications, **Colorbond® XRW®** with Zinalume AZ150 Substrate provides ultimate protection against the elements in moderate and inland environments.
- Colorbond® Ultra®** delivers superior resistance to corrosion, especially in coastal and severe environments, the Zinalume AZ200 substrate enables us to offer extended warranties to your next project.
- Colorsteel® Altimate®** is a marine grade aluminium substrate with the tried and tested Colorsteel® paint system. Designed for superior corrosion protection, Altimate® is the ideal roofing and cladding solution for extreme conditions.

Contact us today to learn more about the availability of RPFL SuperDek® in **Colorbond® XRW®, Colorbond® Ultra®** and **Colorsteel® Altimate®** and discover how it can enhance your next roofing project.

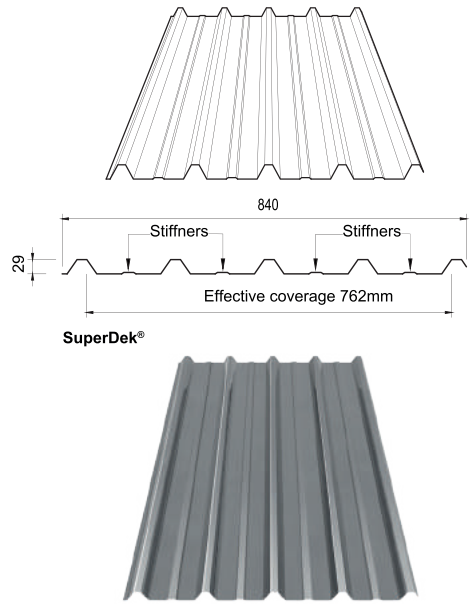
**Colorbond Colour Chart**

**Colorbond XRW®** 0.42BMT / 0.48BMT / 0.55 BMT

**Colorbond Ultra®** 0.48BMT / 0.55 BMT



\*The colours you see on screen will vary from actual product colours. We recommend ordering a colour sample to view in natural light before making your final colour selection.





## Technical Specifications

Maximum Roof Lengths for Drainage - Rainfall						
Peak Rainfall Intensity	Roof Slope					
	1°	2°	3°	5°	7.5°	10°
100		218	255	318	380	437
150		144	170	212	253	291
200		108	127	158	189	218
250		86	101	126	151	174
300		70	84	105	125	144
400		53	62	78	94	108
500		42	49	62	74	86

Thermal Expansion And Contraction Of Steel Cladding			
Sheet Length (mm)	Expansion Or Contraction (mm)		
	10° Change	50° Change	75° Change
5000	0.6	3	4.5
10000	1.2	6	9
15000	1.8	8	13.5
20000	2.4	12	18
25000	3	15	22.5
30000	3.6	18	27

Base Materials		Tolerance	
Steel Grade	G550 & G300	Length	+10mm, -10mm
Coating	AZ150, AZ200 & Z450	Width	+4mm, -4mm
Aluminium Alloy	5005H34 / 5052H36		

Base Metal Thickness		BMT Mass	
0.42mm	0.50TCT	0.42mm	3.47kg/m <sup>2</sup>
0.48mm	0.53TCT	0.48mm	3.76kg/m <sup>2</sup>
0.55mm	0.60TCT	0.55mm	4.27kg/m <sup>2</sup>
0.90mm	0.90TCT	0.90mm	2.45kg/m <sup>2</sup>

\*Note that TCT on above table is for Colorbond® range, TCT will vary for unpainted products. 0.90mm is available in Aluminium only.

Sheet Coverage																						
Width Of Room (m)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	30	40	50	60
Number Of Sheets	4	6	7	8	10	11	12	14	15	16	17	18	19	20	21	23	24	25	27	40	53	66

## Recommended Fasteners

We recommend BRA Fasteners type with new superi- or B8 coating protection to AS 3566 minimum Class 4 with 25mm diameter Marine Grade Aluminium/ EPDM universal BRA Cyclone washer (Specially designed cyclone washer). BRA Fasteners exclusively available at RPFL.

## Important Publications

For your installation to perform to its full potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

- NZ Steel Specification & Installation Guide March 2011.
- NZ Metal Roof & Wall Cladding code of practice version 3.0 / June 2021.

## For Best Results

These suggestions will improve the appearance of the RPFL SuperDek® Roof and make installation easier.

- Keep the roofing sheets dry when closely stacked OR keep the sheets well ventilated if subjected to wet condition.
- Care should be taken to avoid dragging sheets which will cause scratching and scouring to the coated surface.
- Always walk over battens / purlins positions and wear soft soled shoes.
- Lay sheets from right to left to ensure tight fitting. Note that the trailing edge of any sheet should not be fixed until the following sheet is installed beneath it.
- Ensure the sheets are not bent unintentionally at the steps during handling.
- Install sheets with fasteners at the eave and ridge only until all sheets have been installed. Fix the roof permanently in position using the required fastener frequency.
- Heads of fasteners to be matching colour-available from RPFL.
- When cutting or trimming RPFL SuperDek® sheets, use large metal snips.
- Metal abrasive/ cutting discs should NOT be used at any time.
- Turn up sheet ends at ridges and hips and cover with suitable accessories.
- All accessories should be installed in accordance with good plumbing practice.
- On a daily basis always clean and sweep roof with a soft broom and ensure gutters are free from pop rivets, loose screws and swarf to avoid rust spots. Upon completion of works clean and wash roof with a soft broom.



Profile: RPFL SuperDek®  
Finish: Colorbond® steel



Profile: RPFL SuperDek®  
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### Residential Projects With RPFL SuperDek® Roofing Profile

Whether you're building a new house or renovating an existing one, RPFL SuperDek® roofing profile offers exceptional durability, versatility, and timeless style to elevate the aesthetic appeal and safeguard your investment.

### Why Choose RPFL SuperDek® For Your Residential Project?

**Enhanced Curb Appeal:** RPFL SuperDek® design adds character and visual appeal to your home, making it stand out in the neighbourhood.

**Superior Protection:** Invest in a roofing solution that provides unmatched durability and safeguards your home from the elements, giving you peace of mind.

**Expert Guidance:** Our team of roofing professionals can provide guidance throughout the project, from material selection to installation techniques, ensuring a smooth and successful experience.

**Industry-Leading Warranty:** We stand behind the quality of our RPFL SuperDek® profile with a comprehensive warranty, showcasing our commitment to customer satisfaction.





# PROJECTS



Profile: RPFL SuperDek®  
Finish: Colorbond® steel



Profile: RPFL SuperDek®  
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Profile: RPFL SuperDek®  
Finish: Colorbond® steel





## **1. Cyclonic Testing Of 0.42bmt RPFL SuperDek® G550 Steel Grade Fixed Into Timber Purlin (Cyclic Wind Load to NCC 2019 LHL)**

Testing on the RPFL SuperDek® roofing profile has been carried out at The University of Adelaide, EngTest, South Australia. The cyclic tests have produced the following results refer to Report No's:

- C310901-13C-Rev A, dated 27th February 2014
- C130901-18-Rev A, dated 24th February 2014
- C130901-20-Rev A, dated 26th February 2014
- C130901-24-Rev A, dated 27th February 2014

The cyclic test results have been used as a basis for development of the load span table below.

### **Lo-Hi-Lo Cyclonic Wind Uplift Resistance Strength Limit - State Test Results Load Span Table**

- 0.42bmt RPFL SuperDek® sheeting, G550.
- 1 Timber purlin batten, minimum width 45mm and minimum depth 45mm, MGPI2 Pine, joint group JD4.
- Bremick Type 17 x 75mm long screw with 25mm diameter, 1.0mm thick Aluminium. Bonded washer used under the head of each screw and fastened at alternate crests.

#### **Load Span Table**

Span (mm)	Strength (kPa) End Span (Trend Line)	Span (mm)	Strength (kPa) Internal Span (Trend Line)	Screw Force (kN)
480	9.72	600	9.72	0.73
600	7.81	750	7.81	0.81
750	6.24	950	6.24	0.88
950	4.96	1200	4.96	0.94

## **2. Cyclonic Testing Of 0.42bmt RPFL SuperDek® G550 Steel Grade Fixed Into Steel Purlin**

Testing on the RPFL SuperDek® roofing profile has been carried out at The University of Adelaide, EngTest, South Australia. The cyclic tests have produced the following results refer to Report No's:

- C130901-2-Rev A, dated 19th February 2014
- C130901-4c-Rev A, dated 19th February 2014
- C130901-8-Rev A, dated 19th February 2014
- C130901-10-Rev A, dated 19th February 2014

The cyclic test results have been used as a basis for development of the load span table below.

### **Lo-Hi-Lo Cyclonic Wind Uplift Resistance - Strength Limit State Test Results Load Span Table**

- 0.48bmt RPFL SuperDek® sheeting, G550.
- Minimum steel purlin thickness, 1.55mm G450 grade
- Bremick 14-10 x 65mm screw with 25mm diameter aluminium bonded washer used under the head of each screw and fastened at each crest.

#### **Load Span Table**

Span (mm)	Strength (kPa) End Span (Trend Line)	Span (mm)	Strength (kPa) Internal Span (Trend Line)	Screw Force (kN)
480	9.52	600	9.52	0.71
600	7.90	750	7.90	0.82
750	6.52	950	6.52	0.92
950	5.36	1200	5.36	1.02



### 3. Cyclonic Testing of 0.48bmt RPFL SuperDek® G550 Steel Grade, Fixed into Timber Purlin

Testing on the RPFL SuperDek® roofing profile has been carried out at The University of Adelaide, EngTest, South Australia. The cyclic tests have produced the following results refer to Report No's:

- C130901-14-Rev A, dated 19th February 2014
- C130901-14-Rev A, dated 24th February 2014
- C130901-14-Rev A, dated 26th February 2014
- C130901-14-Rev A, dated 26th February 2014

The cyclic test results have been used as a basis for development of the load span table below.

#### Lo-Hi-Low Cyclonic Wind Uplift Resistance - Strength Limit State Test Results

##### Load Span Table

- 0.48bmt RPFL SuperDek® sheeting, G550.
- 1 Timber purlin batten, minimum width 45mm and minimum 45mm, MGPI2 Pine, joint group JD4
- Bremick Type 17 x 75mm long screw with 25mm diameter, 1.0mm thick Aluminium Bonded washer used under the head of each screw and fastened at alternate crests.

##### Load Span Table

Span (mm)	Strength (kPa) End Span (Trend Line)	Span (mm)	Strength (kPa) Internal Span (Trend Line)	Screw Force (kN)
480	11.28	600	11.28	0.84
600	9.28	750	9.28	0.96
750	7.59	950	7.59	1.07
950	6.18	1200	6.18	1.17

### 4. Cyclonic Testing of 0.48bmt RPFL SuperDek® G550 Steel Grade, Fixed into Steel Purlin

Testing on the RPFL SuperDek® roofing profile has been carried out at The University of Adelaide, EngTest, South Australia. The cyclic tests have produced the following results refer to Report No's:

- C130901-3-Rev A, dated 19th February 2014
- C130901-5-Rev A, dated 24th February 2014
- C130901-9-Rev A, dated 26th February 2014
- C130901-11-Rev A, dated 26th February 2014

The cyclic test results have been used as a basis for development of the load span table below.

#### Lo-Hi-Low Cyclonic Wind Uplift Resistance - Strength Limit State Test Results

##### Load Span Table

- 0.48bmt RPFL SuperDek® sheeting, G550.
- 1 Steel purlin batten, minimum width 45mm and minimum depth 45mm, MGPI2 Pine, joint group JD4
- Bremick Type 17 x 75mm long screw with 25mm diameter, 1.0mm thick Aluminium Bonded washer used under the head of each screw and fastened at alternate crests.

##### Load Span Table

Span (mm)	Strength (kPa) End Span (Trend Line)	Span (mm)	Strength (kPa) Internal Span (Trend Line)	Screw Force (kN)
480	9.72	600	9.72	0.73
600	7.81	750	7.81	0.81
750	6.24	950	6.24	0.88
950	4.96	1200	4.96	0.94

## 5. Cyclonic Testing of 0.55bmt RPFL SuperDek® G300 Steel Grade, Fixed into Steel Purlin

Testing on the RPFL SuperDek® roofing profile has been carried out at the James Cook Cyclone Testing Station in Queensland, Australia. The cyclic tests produced no observable damage to the sheet, screws or washers (refer to Report No. TS986 Revision A)

### Description of Cladding and Set-Up Tested

Product name: RPFL SuperDek®

Cladding details: 0.55mm bmt G300 grade steel tested and cover width of 762mm

Sheet Profile: Rib/Pan with 5 ribs per sheet, with peaks about 29mm high and spaced at 190mm centres.

Span Configuration: Multiple un-equal triple spans.

Cladding Fastener: 14 gauge, 10 thread per inch self drilling metal screw with length of 65mm.

### Fixed to Supports

Assembly: with one fastener at every rib of the pan profile ( about 190mm fastener pitch)

Cyclone Washers: 25 circular Aluminium bonded.

Supports: 1.5mm bmt C15015 purlins. Strength of the supports was not evaluated.

Installation: Fixed to the purlins with screw assemblies through the ribs of the cladding into the supports.

Installed with one rib overlapped for each side lap and four fastener assemblies per support per sheet.

### Manufacturer's Details

Name of Manufacturer : Roofing & Profiles (Fiji) Pte Ltd.

Address of Manufacturer : P.O.Box 9. Ba, Fiji Islands

### Report and Test Details

Report Details: Cyclone Testing Station Report No. TS986 revision A, dated 27 March 2015

Report Title: Cyclic Simulated Wind Load Strength Testing of RPFL SuperDek® Cladding

Test Regimes: Cyclic wind load to NCC 2014 LHL.

The cyclic test results have been used as a basis for development of the load span table below.

## Lo-Hi-Lo Cyclonic Wind Uplift Resistance - Strength Limit State Test Results

### Load Span Table

- 0.55bmt RPFL SuperDek® sheeting, G300
- Minimum steel purlin thickness, 1.55mm G450 grade
- Bremick 14-10x65mm screw with 25mm diameter Aluminium Bonded washer used under the head of each screw and fastened at each crest.

### Load Span Table

Cladding Base Metal Thickness (mm)	End Span Length (mm)	Internal Span Length (mm)	Recommended Cyclonic Ultimate Limit State
0.55	950	1200	7.04
0.55	750	950	9.09
0.55	600	750	11.57
0.55	480	600	14.04



## Notes

- It is recommended that a local qualified structural engineer check the suitability of the provided Ultimate Limit State Design Wind Capacities provided in the load span table for the intended use/structure and site location.
- It is recommended that in the event of an extreme storm/extreme winds the cladding is inspected by a suitably qualified builder/engineer to confirm the adequacy of the cladding and fasteners post event.
- It is our opinion that a qualified structural engineer may extrapolate for shorter spans and higher pressures provided that the screw force is not exceeded.

After exposure of cladding to an extreme wind event, it is recommended that inspection be performed to confirm fixing and cladding integrity.

We, Fyfe Pty. Ltd., confirm that the procedures used in carrying out the cyclonic load tests on requirements of the National Construction Code Series 2014 (NCC) and the relevant Australian Standards:

- NCC 2014 (also known as the Building Code of Australia)
- Volume 1: Specification B1.2 – Class 2 to 9 buildings
- Volume 2: Part 3.10.1 – Class 1 and 10 buildings.
- AS 1562.1 – 1992 - Design and installation of sheet roof and wall cladding (Amdt 3-2012)
- AS 4040 – 1992 - Methods of testing sheet roof and wall cladding
- Part 0: Introduction, list of methods and general requirements
- Method 3: Methods of testing sheet roof and wall cladding - Resistance to wind pressures for cyclone regions, pressure test regime as per BCA Lo-Hi-Lo.

## **6. Windborne Debris Impact Testing of 0.42bmt RPFL SuperDek®** **Roof Application - Vertical Trajectories**

Tests were carried out by the James Cook University, Cyclone Testing Station (CTS), Townsville, Queensland, Australia. Refer to their report no.: TS987

### Test Description

Where windborne debris loading is specified, the debris impact shall be equivalent to -

- (a) timber member of 4kg mass with a nominal cross-section of 100 mm x 50 mm impacting end on at 0.1 VR for vertical trajectories; and
- (b) spherical steel ball 8mm diameter (approximately 2 grams mass) impacting at 0.3 VR for vertical trajectories where VR is the regional wind speed given in Clause 3.2

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### Target Velocity-Vertical Trajectories

Timber member: 10.9m/s  
Spherical steel ball: 32.7m/s

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### Equivalent Regional Wind Speed (V500)

Vr= 88m/s (Region D)

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### Tested Sheeting

Type: RPFL SuperDek®  
Base Metal Thickness: 0.42bmt  
Material Grade: G550

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### Tested Spans

Triple Equal Span: 1200mm

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### Tested Fixings

Screws: 14-10 x 65mm fixed at each rib.  
Base Metal: Minimum Steel Purlin  
Thickness: 1.5mm thick, G450

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## **7. Re: Letter of Opinion: Roofing & Profiles (Fiji) LTD Windborne Debris Impact Testing of 0.48bmt RPFL SuperDek®**

### **Roof application – Vertical Trajectories**

Dear Sir,

Fyfe Pty Ltd acted as a consultant technical advisor on your behalf for the Windborne Debris Impact Testing of the 0.42bmt RPFL SuperDek®. The James Cook University in accordance with the requirements of the National Construction Code 2014 (NCC 2014) and AS/NZS 1170.2:2011 Structural Design Actions, Part 2: Wind actions, Section 2.5 Wind actions, Part 2.5.8 Impact loading from windborne debris-Vertical trajectories (roofing).

The following details for the 0.42bmt RPFL SuperDek®

### **Windborne Debris Impact Testing – Vertical Trajectories**

#### **Target Velocity-Vertical Trajectories**

Timber member: 10.9m/s  
Spherical steel ball: 32.7m/s

#### **Equivalent Regional Wind Speed (V500)**

Vr= 88m/s (Region D)

#### **Tested Sheeting**

Type: RPFL SuperDek®  
Base Metal Thickness: 0.42bmt  
Material Grade: G550

#### **Tested Spans**

Triple Equal Span: 1200mm

#### **Tested Fixings**

Screws: 14-10 x 65mm fixed at each rib.  
Base Metal: Minimum Steel Purlin thickness  
Thickness: 1.5mm thick, G450

It is our opinion that the 0.48bmt RPFL SuperDek® G550, sheeting profile with three equal 1200mm spans can achieve the wind debris impact testing results equivalent to the 0.42bmt RPFL SuperDek® G550, sheeting profile listed above if the following criteria are met:

- 0.48bmt RPFL SuperDek® sheeting is to be manufactured from the identical steel grade, G550, manufactured using the same roll former, have identical profile and dimensions to that of the 0.48bmt RPFL SuperDek® sheeting.
- 0.48bmt RPFL SuperDek® Sheeting is to be installed to the identical purlin material and fixed using the same screw and washer assembly. The screws are to be manufactured from the same screw material, have undergone the same heat treatment, have the same thread form and dimensions remain unaltered.

## **8.RPFL Windborne Debris Impact Testing of 0.55bmt RPFL SuperDek® G550**

### **Roof application – Vertical Trajectories**

Tests were carried out by the James Cook University, Cyclone Testing Station (CTS), Townsville, Queensland, Australia. Refer to their report no.: TS987





## Test Description

Where windborne debris loading is specified, the debris impact shall be equivalent to -

- (a) timber member of 4kg mass with a nominal cross-section of 100 mm x 50 mm impacting end on at 0.1 VR for vertical trajectories; and
- (b) spherical steel ball 8mm diameter (approximately 2 grams mass) impacting at 0.3 VR for vertical trajectories where VR is the regional wind speed given in Clause 3.2

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### Target Velocity-Vertical Trajectories

Timber member: 10.9m/s  
Spherical steel ball: 32.7m/s

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### Equivalent Regional Wind Speed (V500)

Vr= 88m/s (Region D)

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### Tested Sheeting

Type: RPFL SuperDek®  
Base Metal Thickness: 0.42bmt  
Material Grade: G550

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### Tested Spans

Triple Equal Span: 1200mm

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### Tested Fixings

Screws: 14-10 x 65mm fixed at each rib.  
Base Metal: Minimum Steel Purlin  
Thickness: 1.5mm thick, G450

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The wind debris impact tests on the 0.42bmt and 0.55bmt G550 RPFL SuperDek® roof sheeting conform to the structural requirements of the following Australian Standard & CTS Technical note:-

- AS/NZS 1170.2 :2011                      Structural Design Actions, Part 2: Wind actions, Section 2.5 Wind actions, Part 2.5.8 Impact loading from windborne
- CTS Technical Note No.4 Notes:        Simulated Windborne Debris Impact Testing of Building Envelope Components (Version 3)

## Notes:

- It is recommended that in the event of an extreme storm/extreme winds the cladding is inspected by a suitably qualified builder/engineer to confirm the adequacy of the cladding and fasteners post event.

We, Fyfe Pty. Ltd., confirm that the procedures used in the testing program has been carried out in accordance with the requirement of the National Code Construction Series (NCC, 2013). The results listed above for the Wind Debris Impact Testing for vertical trajectories only conform to the structural requirements of NCC and the following Australian Standards.

- AS 1170.2 – 2011: Structural Design Actions, Part 2: Wind actions.

