

## Roof Panel Span Tables - Technical Note

### 1. Introduction

To date, determining roof panel spans for NZSIP smart panels have been based on specific engineering design involving reviews of project specific load conditions and panel test data from SCION.

As a stepping stone towards our comprehensive technical manual, the following information is provided to simplify checking of roof panel spans for projects.

Please note, using this information for design does not exempt projects from the requirement for a producer statement issued by a structural engineer.

This information is subject to updates, so please keep in touch.

### 2. How to use Span tables

The tables are grouped by panel thickness and snow loading. Further parameters include cladding weight, wind zone and maximum pitch.

For example (refer to example table on right) a 165mm thick roof panel with a 1.5 kPa Snow load, a max roof pitch of 25°, in a very high wind zone with light roof cladding can span a maximum of 2.7m without any additional support (see point 3 below).

### 3. Exceeding max panel span & Over length panels

To exceed the spans indicated in the tables in this document, specific engineering design with rafters will be required. Please follow the guidance on the last page of this document.

Manufacturing constraints currently limit the maximum single panel length to approximately 3.5 - 3.6m, depending on roof pitch and panel layout.

To specify longer panels, specific engineering design with rafters will be required.

Please follow the guidance on the last page of this document.

Example Table

<b>Allowable Spans (m) for <u>165mm Thick</u> NZSIP Roof Panels</b>			
<b><u>1.5 kPa Snow Load</u></b>			
	<b>Wind Zone</b>	<b><u>Max roof pitch 25°</u></b>	<b>Max roof pitch 45°</b>
<b><u>Light Roof Cladding</u></b>	Low	2.7	3.1
	Medium	2.7	3.1
	High	2.7	3.1
	<b><u>Very High</u></b>	<b><u>2.7</u></b>	3.1
	Extra High	2.7	3.1
<b>Heavy Roof Cladding</b>	Low	2.5	2.9
	Medium	2.5	2.9
	High	2.5	2.9
	Very High	2.5	2.9
	Extra High	2.5	2.9

#### 4. Span Tables for 165mm Thick Roof Panels

Allowable Spans (m) for 165mm Thick NZSIP Roof Panels			
1.0 kPa Snow Load			
	Wind Zone	Max roof pitch 25°	Max roof pitch 45°
Light Roof Cladding	Low	2.95	3.35
	Medium	2.95	3.35
	High	2.95	3.35
	Very High	2.95	3.35
	Extra High	2.95	3.35
Heavy Roof Cladding	Low	2.7	3.05
	Medium	2.7	3.05
	High	2.7	3.05
	Very High	2.7	3.05
	Extra High	2.7	3.05

Allowable Spans (m) for 165mm Thick NZSIP Roof Panels			
1.5 kPa Snow Load			
	Wind Zone	Max roof pitch 25°	Max roof pitch 45°
Light Roof Cladding	Low	2.7	3.1
	Medium	2.7	3.1
	High	2.7	3.1
	Very High	2.7	3.1
	Extra High	2.7	3.1
Heavy Roof Cladding	Low	2.5	2.9
	Medium	2.5	2.9
	High	2.5	2.9
	Very High	2.5	2.9
	Extra High	2.5	2.9

Allowable Spans (m) for 165mm Thick NZSIP Roof Panels			
2.0 kPa Snow Load			
	Wind Zone	Max roof pitch 25°	Max roof pitch 45°
Light Roof Cladding	Low	2.5	2.9
	Medium	2.5	2.9
	High	2.5	2.9
	Very High	2.5	2.9
	Extra High	2.5	2.9
Heavy Roof Cladding	Low	2.35	2.7
	Medium	2.35	2.7
	High	2.35	2.7
	Very High	2.35	2.7
	Extra High	2.25	2.7

## 5. Span Tables for 215mm Thick Roof Panels

Allowable Spans (m) for 215mm Thick NZSIP Roof Panels			
1.0 kPa Snow Load			
	Wind Zone	Max roof pitch 25°	Max roof pitch 45°
Light Roof Cladding	Low	3.3	3.6*
	Medium	3.3	3.6*
	High	3.3	3.6*
	Very High	3.3	3.6*
	Extra High	3.3	3.6*
Heavy Roof Cladding	Low	3.05	3.4
	Medium	3.05	3.4
	High	3.05	3.4
	Very High	3.05	3.4
	Extra High	3.05	3.4

Allowable Spans (m) for 215mm Thick NZSIP Roof Panels			
1.5 kPa Snow Load			
	Wind Zone	Max roof pitch 25°	Max roof pitch 45°
Light Roof Cladding	Low	3.0	3.5
	Medium	3.0	3.5
	High	3.0	3.5
	Very High	3.0	3.5
	Extra High	3.0	3.5
Heavy Roof Cladding	Low	2.8	3.2
	Medium	2.8	3.2
	High	2.8	3.2
	Very High	2.8	3.2
	Extra High	2.8	3.2

Allowable Spans (m) for 215mm Thick NZSIP Roof Panels			
2.0 kPa Snow Load			
	Wind Zone	Max roof pitch 25°	Max roof pitch 45°
Light Roof Cladding	Low	2.8	3.25
	Medium	2.8	3.25
	High	2.8	3.25
	Very High	2.8	3.25
	Extra High	2.8	3.25
Heavy Roof Cladding	Low	2.7	3.1
	Medium	2.7	3.1
	High	2.7	3.1
	Very High	2.7	3.1
	Extra High	2.7	3.1

\*Manufacturing constraints currently limit the maximum single panel length to approximately 3.5 - 3.6m, depending on roof pitch and panel layout.