

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: **TD STRUCTURES LTD**
(Design Firm)

TO: Lifestyle Cabin Co Limited
(Owner/Developer)

TO BE SUPPLIED TO: Any Territorial Authority within New Zealand
(Building Consent Authority)

IN RESPECT OF: Oakridge Solid Wood cabin 7.55X3.9m
(Description of Building Work)

AT: Various locations within NZ within the limitations of the schedule
(Address)

Town/City: **LOT** **DP** **SO**
(Address)

We have been engaged by the owner/developer referred to above to provide:

Structural design review of Oakridge Solid wood cabin

.....
(Extent of Engagement)

services in respect of the requirements of Clause(s) **B1** of the Building Code for:

☐ All or ☒ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☒ Compliance Documents issued by the Ministry of Business, Innovation & Employment **B1/VM1** or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule.....

The proposed building work covered by this producer statement is described on the drawings titled:

As per attached schedule and numbered ;
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

- (i) Site verification of the following design assumptions as per attached schedule
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☒ CM1 ☐ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, **DAMIAN LINEHAN** am: ☒ CPEng 1004738 # ☐ Reg Arch #
(Name of Design Professional)

I am a member of: ☒ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE (Hons)

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$200,000*.

The Design Firm is a member of ACENZ: ☐

SIGNED BY **DAMIAN LINEHAN** (Signature)
(Name of Design Professional)

ON BEHALF OF **TD STRUCTURES LTD** Date **27/04/2022**
(Design Firm)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000.*

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.
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Schedule to Producer Statement PS1

Job Title: Oakridge Solid Wood Cabin 7.55x3.9m

Job #: 21149

27/04/2022

Lifestyle Cabins import the Oakridge Solid Wood Cabin kitset cabin which falls under the category of a “single-story detached buildings up to 30m²” which are building consent exempt.

TD Structures have been engaged by lifestyle cabins to provide a design review of the Oakridge cabins in accordance with the building consent exemption requirements.

The following schedule to the PS1 outlines the assumptions and documentation required for this review. It should be noted that any deviation from the requirements in this document will void this design certificate/producer statement.

Register of Documentation:

1. Production drawings for the Oakridge Solid Wood Cabin 7.55X3.9m
2. TDS Design features report
3. TDS Additional fixing detail requirements

Design Assumptions:

1. Foundations and foundation connections (from provided bearers to chosen foundation solution) are assumed to be on “good ground” as per NZS 3604 and constructed in accordance with acceptable solutions provided within NZS 3604 2011.
2. No substitution with the products included in this design certificate is permitted.
3. Local authority and planning regulations should be confirmed by the owner prior to installation.
4. The installation will be carried out by a competent person with a thorough understanding of the building techniques required.

Durability: (NB: this Design certificate does not cover B2 Durability)

1. To maintain the timber and to extend the expected life of the individual elements, it is highly recommended that the timber walls be treated appropriately for their specific environmental exposure. Lifestyle Cabins have provided guidance in relation to this. Additionally, a coating specialist will be able to advise on this.
2. To maintain durability to the subfloor and foundations elements, the acceptable solutions within NZS 3604 are to be used.

Additional Requirements to the standard Installation:

1. Rafters to be nailed down into walls as per attached mark up
2. Door jambs and lintels to be fixed to wall sections as per attached mark up
3. Exterior braces to be fixed as per attached mark up
4. Floors to be screwed down to bearers as per attached mark up
5. Additional 90x90SG8 posts are installed along door jambs and other locations where indicated

TDS Job No: 21149

Date: 27-04-22

Author: DL

Reviewer: DL

These calculations pertain to Oakridge Solid Wood Cabin 7.55x3.9m

at Various locations within the limitations detailed in the schedule and cover the following design aspects:

Superstructure design only of the timber cabins for wind, snow and Earthquake loads

IL = 1

Design life = 15 years with time to first maintenance (TTFM) of 5 years

Standards referenced

AS/NZS1170.2:2021 - Wind
NZS 3603:1993 A1,2,4 - timber
NZS 3604:2011 - timber buildings

Wind loads

NZS3604 Wind Zone Medium
SED AS/NZS1170 - Quls 0.7 KPa

Snow loads

Sub alpine regions only

Structural form

Gravity:

Tongue and groove timber ceiling spanning between timber joists onto solid timber walls. Walls and floor span between timber bearers onto non-engineer designed 3604 type foundation solution.

Lateral Loads:

Timber walls span horizontally between return walls and/or door/window jambs. Additional timber posts are supplied at door jambs to span vertically. Window jambs span vertically to floor and/or composite lintel beam. At each exterior edge vertical battens provide mechanical anchorage from the roof to the floor so that the walls can act in plane. Fixings to the foundations resist overturning forces.

Permanent actions (dead loads) and live loads

Dead loads

	Roof	Floor	External walls	Internal walls
Description	lightweight roofing	timber framed floor	solid timber wall	solid timber wall
Unit load	0.25 kPa	0.2 kPa	0.25 kPa	0.25 kPa

Live loads (Refer table 3.1 & 3.2 Part 1 AS/NZS 1170)

	Roof	Floor	Deck	Garage
Distributed load	N/A	1.5 kPa*	N/A	N/A
Point load	N/A	1.8 kN	N/A	N/A

*Denotes reductions allowable in specific cases

Barrier loads

N/A

Designed using requirements of clauses 3.6 and 3.8 of AS/NZS 1170.1 as modified by B1/VM1 (clauses 2.2.7 and 2.2.8) with imposed actions as specified in Table 3.3 of AS/NZS 1170.1.

Ductility

ductility = 3

Soil class and seismic coefficient

NZS 3604 bracing elements		SED bracing elements	
Soil class (cl.5.3.3)	D	Soil class =	D
EQ Zone (figure 5.4)	4	$S_p =$	0.93
		Cd type 1 element =	0.294
		Z =	0.13
		T_1	< 0.4 sec
		Cd type 2 element =	

Soil parameters

Shallow Footings - dependable bearing limit ($\phi=0.5$)	150	KPa
Pile Footings - dependable limit ($\phi=0.5$) end bearing	not applicable	KPa
skin friction	not applicable	KPa

Soil Type	ϕ (degrees)	Density (kN/m ³)	Expansive class type S, M or H to AS2870 or B1/AS1
Assumed good ground	N/A	N/A	N/A

Liquefaction risk (select from dropdown)

Low

Foundations

Standard slab on grade or ordinary piles as per NZS 3604

Corrosion

External areas

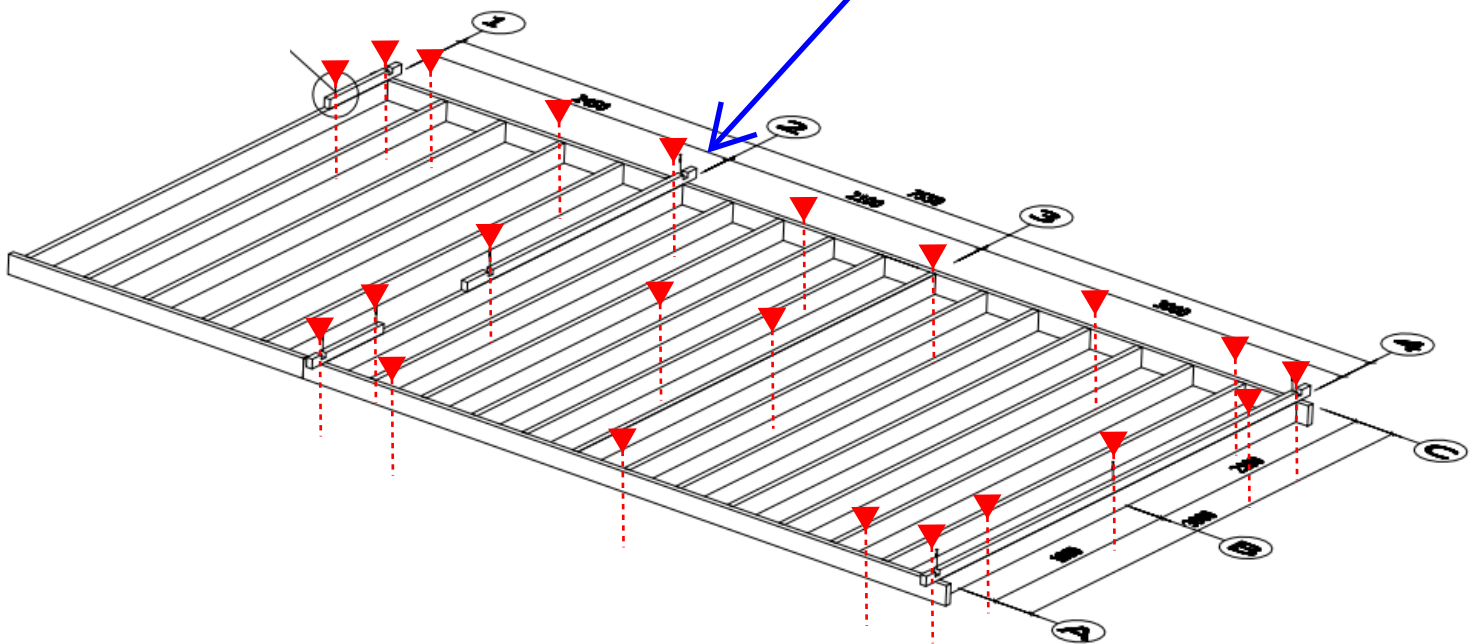
	Timber	Structural Steel	Concrete	Masonry
Zone	C NZS3604 Fig 4.2	N/A	B2 NZS3101, F3.1 T2	N/A
Provision	Treatment NZS3602, fixings NZS3604 T4.1	N/A	N/A	N/A

Sheltered areas

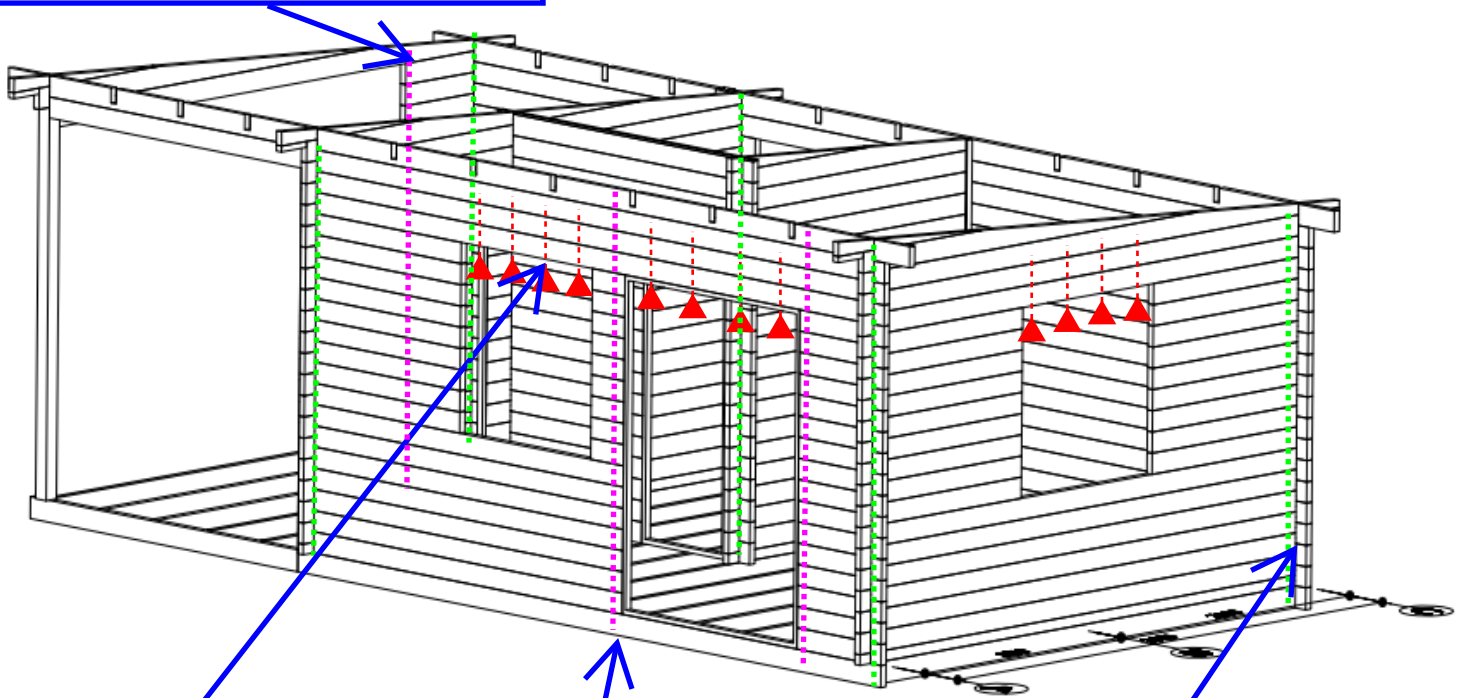
	Timber	Structural Steel	Concrete	Masonry
Zone	C NZS3604 Fig 4.2	N/A	A2 NZS3101, F3.1 T2	N/A
Provision	Treatment NZS3602, fixings NZS3604 T4.1	N/A	N/A	N/A

4:
Spax Washer head
screws connecting
wall members to
flooring elements

6mm X 160mm Long



5:
90X90SG8 Timber post.
3X Skewed nails (2.8mm) each side
to base and bottom wall plate
3X Skewed nails each side to base
and bottom wall plate
2X skewed nails to wall at every
third wall beam



2:
4 X 160mmx6mm
Spax Washer Head
screws typical at
every lintel

5:
90X90SG8 Timber
post.
3X Skewed nails
(2.8mm) each side to
base and bottom wall
plate
3X Skewed nails
each side to base
and bottom wall plate
2X skewed nails to
wall at every third
wall beam

3:
External braces shall
be nailed 2x2.8mm
Galv nails at each
timber section to
both sides. NB this is
on internal
intersections also

1:
Rafters to be nailed
down (2x2.8mm Galv
nails) at each rafter

