Building Code Clause(s)..B1..

PRODUCER STATEMENT – PS1 – DESIGN

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

ISSUED BY: ..MiTek New Zealand Limited..
(Design Firm)

TO:..Owner / Developer in New Zealand..
(Owner/Developer)

TO BE SUPPLIED TO:..Building Consent Authorities in New Zealand..
(Building Consent Authority)

IN RESPECT OF:..LUMBERLOK Deck Joist Fixing..
(Description of Building Work)

AT:..Various Locations in New Zealand..
(Address)

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

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

Generic Design of Timber Deck Joist Fixing for Cantilever Handrail.

.....
(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.....or
(verification method/acceptable solution)

■ Alternative solution as per the attached schedule..Test Results & Design Calculations DJF R1 for Wet Timber.....

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

LUMBERLOK DECK JOIST FIXING brochure.....and numbered ..2024 Edition V1.....;
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 ..For all wind zones up to Extra High; Installation as per brochure.....
(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, ..IN LING NG..... am: ■ CPEng ..146585.. # ☐ Reg Arch ..... #
(Name of Design Professional)

I am a member of: ■ Engineering New Zealand ☐ NZIA and hold the following qualifications:..BE Civil, CMEngNZ, CPEng.....
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..IN LING NG.....(Signature)..In Ling Ng.....
(Name of Design Professional)
Digitally signed by In Ling Ng
Date: 2025.03.26 15:29:26 +13'00'

ON BEHALF OF ..MiTek New Zealand Limited.....Date..26/03/2025.....
(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.

MiTek New Zealand Limited		Ref:	***DJF R1***
Job:	**DECK JOIST FIXING**	Page:	***1***
Address:	**NZ**	By:	***ILN***
Client:	**LUMBERLOK**	Date:	***6/11/2018***

BALUSTER POST - SIZE & SPACING

ϕ = 0.8

	Residential		Commercial		
Handrail load =	0.75	kN/m	0.75	kN/m	AS/NZS 1170.1 : 2002 Table 3.3
Live Load factor =	1.5		1.5		
Handrail Ht =	1.05	m	1.15	m	
M* =	1.181	kNm	1.294	kNm	
Bolt size =	12	mm			

						GREEN	RESIDENTIAL	COMMERCIAL
Grade	B (mm)	B* (mm)	D (mm)	Zxx (mm^3)	fb (Mpa)	ϕMn (kNm)	Max. Spacing (m)	Max. Spacing (m)
SG8	90	78	90	105300	11.7	0.985608	0.834 m	0.762 m
SG10	90	78	90	105300	11.7	0.985608	0.834 m	0.762 m
No.1/SG6	125	113	125	294270.83	7.5	1.76563	1.495 m	1.365 m
SG8	125	113	125	294270.83	11.7	2.75438	2.332 m	2.129 m
Prolam PL8	88	76	88	98090.67	15.2	1.19278	1.010 m	0.922 m
Prolam PL8	112	100	112	209066.67	15.2	2.54225	2.152 m	1.965 m
Prolam PL8	135	123	135	373612.5	15.2	4.54313	3.846 m	3.512 m

B* = B - 12mm bolt hole

						DRY	RESIDENTIAL	COMMERCIAL
Grade	B (mm)	B* (mm)	D (mm)	Zxx (mm^3)	fb (Mpa)	ϕMn (kNm)	Max. Spacing (m)	Max. Spacing (m)
SG8	90	78	90	105300	14	1.17936	0.998 m	0.912 m
SG10	90	78	90	105300	20	1.6848	1.426 m	1.302 m
No.1/SG6	125	113	125	294270.83	10	2.354	1.993 m	1.820 m
SG8	125	113	125	294270.83	14	3.296	2.790 m	2.548 m
Prolam PL8	88	76	88	98090.67	19	1.491	1.262 m	1.152 m
Prolam PL8	112	100	112	209066.67	19	3.178	2.690 m	2.456 m
Prolam PL8	135	123	135	373612.5	19	5.679	4.808 m	4.389 m

MiTek New Zealand Limited

Date of Tests: 04-12-2014

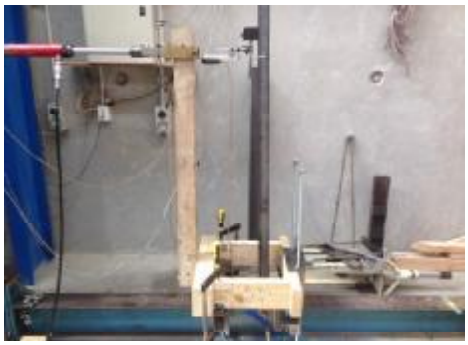
DECK JOIST FIXING - BRANZ EM1 R1 Test 1

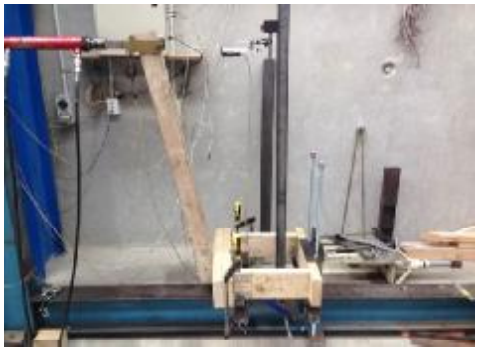
140X45 Joist @ 400c/c (90 X 90 Post with 2 M12 Bolts & 50x50x5mm washers)

1.50mm SSCPC40 with Type 17 - 14g x 35mm & 75mm SS screws

CHARACTERISTIC STRENGTH FOR LESS THAN 10 SPECIMENS

Specimen	Number	Results (kN)
CPC40 01	1	2.324
CPC40 02	2	2.208
CPC40 03	3	2.037
CPC40 04	4	2.045
CPC40 05	5	2.077
CPC40 07	6	2.347





Total Number n =	6	
Average =	2.173 kN	
Standard Deviation = s =	0.140	
CoV = v =	0.065	(= s/average)
P_{min} =	2.037 kN	
Characteristic Strength = R_k =	1.849 kN	(= P_{min} $(n/27)^{v}$)

Note: 1) Ht of applied load = 1040mm from top of joists
2) Tests were carried out on dry timber

AS/NZS 1170:2002

LL load factor =	1.5	
ϕ =	0.8	
Green timber factor k =	0.8	(Cl. 4.3.2 & 4.3.3 of NZS 3603:1993)
Handrail Horizontal Load =	0.75 kN/m	x 1.5 = 1.125 kN/m

Max Baluster Spacing = 1.849 kN x 0.8 x 0.8 / 1.125 kN/m

= 1.052 m

MiTek New Zealand Limited

Date of Tests: 09-02-2015

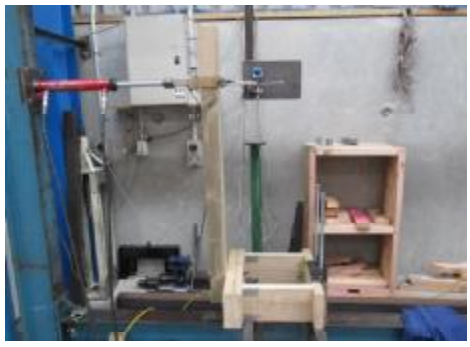
DECK JOIST FIXING - BRANZ EM1 R1 Test 2

190X45 Joist @ 400c/c (90 X 90 Post with 2 M12 Bolts & 50x50x5mm washers)

1.50mm SSCPC40 with Type 17 - 14g x 35mm & 75mm SS screws

CHARACTERISTIC STRENGTH FOR LESS THAN 10 SPECIMENS

Specimen	Number	Results (kN)
CPC40 B	1	3.074
CPC40 F	2	2.928
CPC40 G	3	3.047
CPC40 I	4	3.267
CPC40 J	5	3.275
CPC40 K	6	3.636



Total Number n =	6	
Average =	3.205 kN	
Standard Deviation = s =	0.250	
CoV = v =	0.078	(= s/average)
P_{min} =	2.928 kN	
Characteristic Strength = R_k =	2.603 kN	(= P_{min} $(n/27)^{v}$)

Note: 1) Ht of applied load = 1040mm from top of joists
2) Tests were carried out on dry timber

AS/NZS 1170:2002

LL load factor =	1.5	
ϕ =	0.8	
Green timber factor k =	0.8	(Cl. 4.3.2 & 4.3.3 of NZS 3603:1993)
Handrail Horizontal Load =	0.75 kN/m	x 1.5 = 1.125 kN/m

Max Baluster Spacing = 2.603 kN x 0.8 x 0.8 / 1.125 kN/m

= **1.481 m**

MiTek New Zealand Limited Date of Tests: 21-04-2015

DECK JOIST FIXING - BRANZ EM1 R1 Test 3

240X45 Joist @ 400c/c (125x125 Post with 2 M12 Bolts & 50x50x5mm washers)

1.50mm SSCPC40 with Type 17 - 14g x 35mm & 75mm SS screws

CHARACTERISTIC STRENGTH FOR LESS THAN 10 SPECIMENS

Specimen	Number	Results (kN)
24C402	1	3.819
24C403	2	3.874
24C404	3	4.571
24C405	4	4.284
24C406	5	3.99
24C407	6	3.881

Total Number n =	6	
Average =	4.070 kN	
Standard Deviation = s =	0.297	
CoV = v =	0.073	(= s/average)
P_{min} =	3.819 kN	
Characteristic Strength = R_k =	3.422 kN	(= P_{min} $(n/27)^v$)

Note: 1) Ht of applied load = 1040mm from top of joists
2) Tests were carried out on dry timber

AS/NZS 1170:2002

LL load factor =	1.5	
ϕ =	0.8	
Green timber factor k =	0.8	(Cl. 4.3.2 & 4.3.3 of NZS 3603:1993)
Handrail Horizontal Load =	0.75 kN/m	x 1.5 = 1.125 kN/m

Max Baluster Spacing = 3.422 kN x 0.8 x 0.8 / 1.125 kN/m

= **1.947 m**