



**CERTIFICATE ATTACHED TO
PROJECT INFORMATION MEMORANDUM OR
BUILDING CONSENT**

Section 37, Building Act 2004

Restrictions on commencing building work under the Resource Management Act 1991

PIM No: *BCon21/0063*

Valuation or Property No: *7858*

Building Consent No: *BCon21/0063*

Restrictions on commencing building work under the Resource Management Act 1991

The building work referred to in the attached project information memorandum or building consent is also required to have a resource consent under the Resource Management Act 1991:

Resource Consent required

As this resource consent will or may materially affect the building work to which the attached project information memorandum or building consent relates, until it has been granted:-

1. No building work may proceed until the Resource Consent (Permitted Boundary Activity) has been approved and granted.

Failure to comply with the requirements of this notice may result in legal action being taken against you under the Resource Management Act 1991.

<i>On behalf of Whanganui District Council</i>	<i>Signature of Council Officer</i>
Dated 16-03-2021	 Bill Leslie Team Leader Assessments



WHANGANUI
DISTRICT COUNCIL
Te Kaunihera a Rohe o Whanganui

IMPORTANT NOTE

These documents are required to be onsite for all inspections and must be a complete and full copy of the WDC stamped “Approved” documents.

Failure to have a full and legible set of documents may result in a terminated inspection. A terminated inspection will incur additional charges.



INSPECTION RECORD

This record, together with the Building Consent and approved plans, is to remain on the construction site at all times.

Project Location	TO BOOK AN INSPECTION PLEASE PHONE WDC BUILDING CONTROL	BCon21/0063
31 Halswell St WHANGANUI	ON 349 0001 AND QUOTE THE FOLLOWING APPLICATION NUMBER:	
Description of Work	Additions & Alterations to the Existing Dwelling (21m2).	
Applicant	Mr PE Clark 65D Portal Street, Durie Hill, Whanganui 4500	

SUMMARY OF CONDITIONS

Building Consent Number BCon21/0063

PIM Conditions

Code	Condition
	All work on the project must comply with the requirements of the NZ Building Code.
	A PIM only document is not an approval to build. A Building Consent is required before building work commences.
	W.D.C will follow up on building work not completed within two years of building consent issue.
	A Building Consent lapses and is of no effect if the building work has not been started within 12 months of the date of issue.
	If the building is public premises it may not be occupied until either a code compliance certificate or certificate for public use has been issued.
	Please note [Electrical, and Gasfitting subtrades do not form part of the building consent inspection process. However, Council is required to receive 'Energy Certificates' from both of these trades before issue of a Code Compliance Certificate].

Building Consent Information

Code	Information
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Your project's inspections are listed on the next page...



101 Guyton Street
P O Box 637, Whanganui
Phone: (06) 349 0001
Fax: (06) 349 0000
Email: wdc@whanganui.govt.nz
Web: www.whanganui.govt.nz

Please Note: A minimum of 48 hours notice is required for the booking of an inspection. The inspection record sheet and accompanying building consent documentation must be on site for use by the inspector at the time of the inspection.

All inspections are to be carried out by BCA Building Inspectors unless prior arrangements have been made by the BCA to have an approved qualified person inspect specific items (eg. Engineer). Inspections shall be carried out in accordance with the attached schedule of inspection types. It is the owner's responsibility to ensure all necessary inspections are carried out as required. Please contact WDC if you are unsure what requires inspection – do not cover or endorse any building work without inspection.

Note: Further inspections may incur additional cost at time of Code Compliance Certificate issue.

Inspections Record For Building Consent Number BCon21/0063								
Inspection	When to Request	Date	Inspector	Complies with Code	Reinspect	Notes		
PILE AND/OR POST INSPECTION	Prior to placing Concrete							
SUBFLOOR COMBINED INSPECTION	Before covering up							
FRAMING INSPECTION	When all framing is complete.					Includes post footings.		
BUILDING PRELINE INSPECTION	Before Internal linings are fixed.							
POST LINE INSPECTION	To inspect fixings. Prior to covering up.							
PLUMBING PRELINE INSPECTION	Before Internal linings are fixed.							

CONSTRUCTION REVIEWS (NO INSPECTION)							Once the final inspection has been completed please apply for your Code Compliance Certificate and supply the following information: (Please note that the Code Compliance Certificate can be applied for online at www.whanganui.govt.nz) Memorandum of Restricted Building Work (RBW) for all required trades. As-Built Drainage plan. Energy certificate/s.		
FINAL BUILDING AND PLUMBING COMBINED INSPECTION	On Completion								



BUILDING CONSENT NUMBER BCon21/0063

Section 51, Building Act 2004

The building:

<i>Street address of building:</i>	<i>Legal description of land where building is located:</i>
31 Halswell St WHANGANUI	LOT 26 BLK I DP 936 0.0506 Ha LOT 24 BLK I DP 936 0.0506 Ha
<i>Building name:</i>	<i>Location of building within site/block number:</i>
<i>Level/unit number:</i>	

The owner:

<i>Name of Owner:</i>	
Mrs P Garland	
<i>Mailing address:</i>	<i>Street Address/registered Office:</i>
31 Halswell Street Whanganui 4500	31 Halswell Street Whanganui 4500

Phone numbers:

<i>Landline:</i>		<i>Mobile:</i>	0272268585
<i>Daytime:</i>		<i>After hours:</i>	
<i>Facsimile number:</i>			
<i>Email address:</i>		<i>Website:</i>	

First point of contact for communications with the building consent authority:

<i>Contact Person:</i>	
Mr PE Clark	
<i>Mailing address:</i>	<i>Street Address/registered Office:</i>
65D Portal Street, Durie Hill, Whanganui 4500	65D Portal Street, Durie Hill, Whanganui 4500

Phone number:

<i>Landline:</i>		<i>Mobile:</i>	0274457573
<i>Daytime:</i>	063453826	<i>After hours:</i>	
<i>Facsimile number:</i>			
<i>Email address:</i>		<i>Website:</i>	

Building Work

The following building work is authorised by this consent

<i>Project</i>
Additions & Alterations to the Existing Dwelling (21m2).



<i>Intended Use</i>	<i>Intended Life</i>
Single Detached Residential	50+ Years
<i>Estimated Value (\$)</i>	
\$180000.00	

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty of responsibility under any other Act relating to or affecting the building (or proposed building). This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition or removal would be in breach of any other Act.



CONDITIONS OF BUILDING CONSENT NUMBER BCon21/0063

Section 51, Building Act 2004

This Building Consent is issued Subject to the following conditions:

Building Act 2004, Section 90:

Inspections by Building Consent Authorities

Agents authorised by the building consent authority for the purposes of this section are entitled, at all times during normal working hours or while building work is being done, to inspect

- (a) land on which building work is being or is proposed to be carried out; and
- (b) building work that has been or is being carried out on or off the building site; and
- (c) any building.

Building Act 2004, Section 37:

Territorial authority must issue certificate if resource consent required

(1) This section applies if a territorial authority considers that—

- a. a resource consent under the Resource Management Act 1991 has not yet been obtained; and
- b. the resource consent will or may materially affect building work to which a project information memorandum or an application for a building consent relates.

(2) The territorial authority must issue a certificate, in the prescribed form, to the effect that until the resource consent has been obtained—

- a. no building work may proceed; or
- b. building work may only proceed to the extent stated in the certificate.

(3) The certificate must be—

- a. attached to the project information memorandum; or
- b. if no project information memorandum has been applied for, provided to the building consent authority.

Compliance Schedule:

A compliance schedule (CS) is not required for this building.

#Attachments

‡Copies of the following documents are attached to this building consent:

‡Project information memorandum number BCon21/0063

‡Inspection record

‡Informative notes

+Section 37 Certificate Building Act 2004

101 Guyton Street
P O Box 637, Whanganui
Phone: (06) 349 0001
Fax: (06) 349 0000
Email: wdc@whanganui.govt.nz
Web: www.whanganui.govt.nz



**WHANGANUI
DISTRICT COUNCIL**
Te Kaunihera a Rohe o Whanganui

Signed for and on behalf of the Whanganui District Council

GJ Hoobin
Building Control Manager

Date: 16 March, 2021



BUILDING CONSENT NUMBER BCon21/0063

Informative notes:

- The Building Consent, conditions, inspection sheet, and approved plans must be kept on site at all times until completion of the project.
- Failure to request inspections will risk the non-issuing of a code compliance certificate and the structure may be deemed non-complying.
- Any inspection time required over and above that allowed may incur a further charge.
- Under Section 52, a building consent lapses and is of no effect if the building work to which it relates is not commenced within 12 months after the date of issue.
- Under Section 93, if the owner has not made application within 24 months, the BCA (Building Control Authority), must decide whether or not to issue a CCC (Code Compliance Certificate).



PROJECT INFORMATION MEMORANDUM NUMBER BCon21/0063

Section 35, Building Act 2004

Mr PE Clark
65D Portal Street
Durie Hill
Whanganui 4500

<i>Project Location</i>	<i>Assessment Number/Legal Description</i>
31 Halswell St WHANGANUI	LOT 26 BLK I DP 936 0.0506 Ha LOT 24 BLK I DP 936 0.0506 Ha
<i>Category</i>	<i>Description of Work</i>
Adds/Alts to Private Residential - \$50001 & over	Additions & Alterations to the Existing Dwelling (21m2).
<i>Intended Life</i>	<i>Estimated Value (\$)</i>
50+ Years	180000.00

This Project Information Memorandum is confirmation that the proposed work may be undertaken, subject to the provisions of the Building Act 2004 and any requirements of the Building Consent (number BCon21/0063), which has been granted.

This Project Information Memorandum is subject to the following conditions:

- **All work on the project must comply with the requirements of the NZ Building Code.**

Building Act 2004, Section 37:

Territorial authority must issue certificate if resource consent required

(1) This section applies if a territorial authority considers that—

- a resource consent under the Resource Management Act 1991 has not yet been obtained; and
- the resource consent will or may materially affect building work to which a project information memorandum or an application for a building consent relates.

(2) The territorial authority must issue a certificate, in the prescribed form, to the effect that until the resource consent has been obtained—

- no building work may proceed; or
- building work may only proceed to the extent stated in the certificate.

(3) The certificate must be—

- attached to the project information memorandum; or
- if no project information memorandum has been applied for, provided to the building consent authority.



Signed for and on behalf of the Whanganui District Council

GJ Hoobin
Building Control Manager

Date: 15 March 2021



9 March 2021

Mr PE Clark
65D Portal Street
Durie Hill
Whanganui 4500

Dear Sir or Madam:

1st Request for further information on Application.

Project Number: BCon21/0063
Project Location: 31 Halswell St WHANGANUI
Project Description: Additions & Alterations to the Existing Dwelling (21m2).

The building consent application is currently being assessed. Please supply the answers to the questions below in a specific covering letter clearly cross-referencing our questions and ensure that the altered drawings are also cross-referenced and have appropriate 'clouding' or highlighting etc. to clearly identify changes. All RBW questions **MUST** be addressed by the LBP responsible for the design and confirmation supplied. Please ensure that you quote this Project Number BCon21/0063 on all changes made to the documents.

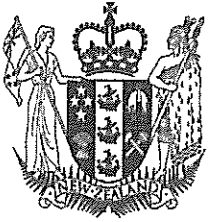
1. Please either alter the proposed addition plans to comply with the height recession plane or apply for a permitted boundary activity for not complying within the height recession plane, please refer to standard GRZ-S4 (2). (Kerryn Penn - Graduate Planner - 06 349 3095)
2. Please note that the affected party being 29 Halswell Street (Mrs Cleo Price) will need to sign the following: Affected party form 8b, elevations, floor and site plan.
The permitted boundary activity (PBA) can be applied for online: <https://www.whanganui.govt.nz/Property/Planning-Services/Resource-Consents/Apply-for-Resource-Consent> (apply for a deemed permitted boundary activity).
Please note the PBA must be applied for separately to a building consent. (Kerryn Penn - Graduate Planner - 06 349 3095)
3. Please address mechanical ventilation to the laundry and hob. (Ben Nyssen - Building Control)
4. Please provide a threshold junction detail for the deck to dwelling. (Ben Nyssen - Building Control)

10 March 2021

Have spoken to Kerryn Penn
Application to be supplied separately
Form 1A - by owner of 31 Halswell Street
Form 8B - by affected party being 29 Halswell Street
Plus
Accompanying signed drawings

Refer Drawing No 3 - attached

Refer Drawing No 19 - attached



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy




R.W. Muir
Registrar-General
of Land

Identifier **WN99/68**
Land Registration District **Wellington**
Date Issued 27 May 1899

Prior References
WN94/218

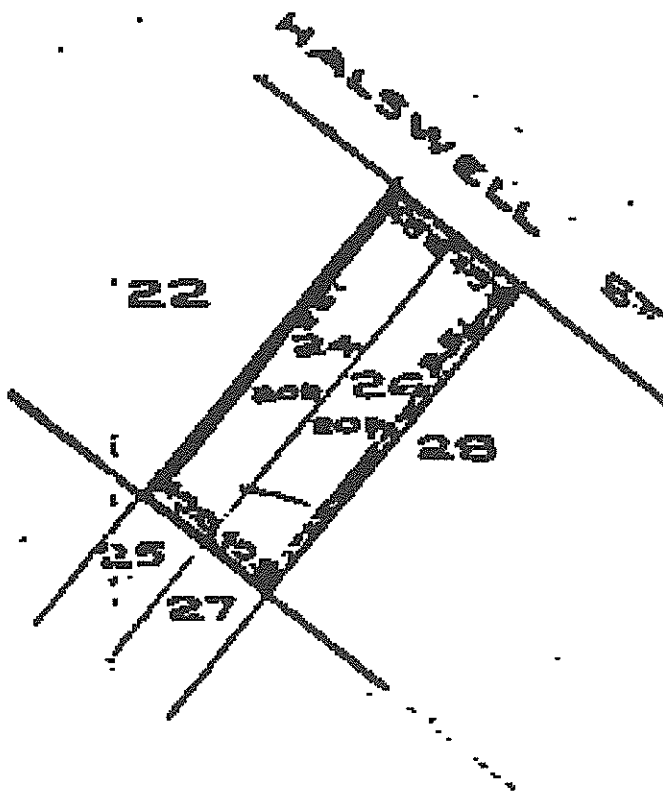
Estate Fee Simple
Area 1012 square metres more or less
Legal Description Lot 24 and Lot 26 Block I Deposited Plan
936

Registered Owners
Penelope Garland

Interests

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Image Quality due
to Condition
of Original



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Search by:

Property Address

Please start typing the address: 

31 Halswell St WHANGANUI

2020/2021 (01 Jul 2020 - 30 Jun 2021)**Property number** 7858**Assessment number** 1317034400**Address** 31 Halswell St WHANGANUI**Legal description** LOTS 24 26 BLK I DP 936**Area** 0.1012 Ha**Certificates of title** WN/99/68**Land value** \$140,000**Capital value** \$465,000**Rating Factors**

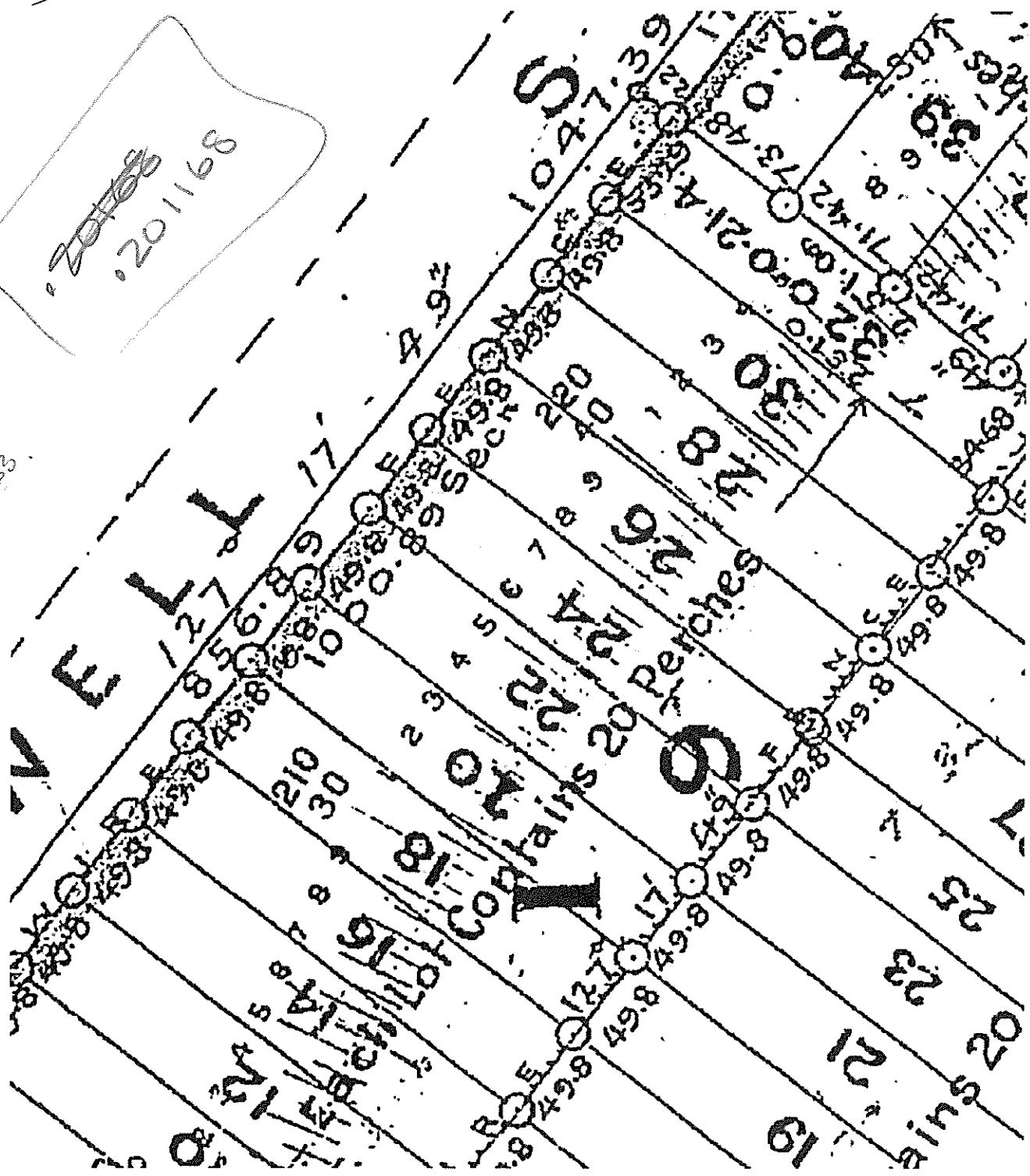
Code	Description	Method	Units	Rate	Amount
GR1	General rate - Residential	Valuation	\$140,000	\$0.623100	\$872.34
UAGC	Uniform annual general charge	SUIP	1	\$700.00	\$700.00
RDB	Roads and footpaths - Residential	Valuation	\$465,000	\$0.059850	\$278.30
RRR	Roading	SUIP	1	\$45.00	\$45.00



NN 99/68
Lot 24
DP 936

W 56.71' 05" 25
29.50' 02" 25
10.26' 08" 25
20.03' 63"

~~201168~~
201168



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Penelope Garland
31 Halswell Street
Whanganui Central 4500
PH: 027 226 8585

10th February 2021

Whanganui District Council
101 Guyton Street
WHANGANUI

TO WHOM IT MAY CONCERN

I, Penelope Garland, as the owner of 31 Halswell Street, Whanganui authorise Paul Clark to act on my behalf, drawing and submitting the plans for the proposed additions and alterations at 31 Halswell Street, Whanganui.

Yours faithfully,



PENELOPE GARLAND

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Form 2A

Memorandum from licensed building practitioner: Certificate of design work

Section 30C or 45, Building Act 2004

Please fill in the form as fully and correctly as possible.

If there is insufficient room on the form for requested details, please continue on another sheet and attach the additional sheet(s) to this form.

THE BUILDING	
Street address:	31 Halswell Street,
Suburb:	
Town/City:	Whangarei
Postcode:	

THE OWNER(S)	
Name(s):	Penny Garland
Mailing address:	31 Halswell Street
Suburb:	PO Box/Private Bag:
Town/City:	Whangarei
Postcode:	
Phone number:	027 226 8585
Email address:	Penny.Garland@O-i.com

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BASIS FOR PROVIDING THIS MEMORANDUM

I am providing this memorandum in my role as the: Please tick the option that applies ☒

- ☐ **sole** designer of all of the RBW design outlined in this memorandum – I carried out all of the RBW design work myself – no other person will be providing any additional memoranda for the project
- ☐ **lead** designer who carried out some of the RBW design myself but also supervised other designers – this memorandum covers their RBW design work as well as mine, and no other person will be providing any additional memoranda for the project
- ☒ **lead** designer for all but specific elements of RBW – this memorandum only covers the RBW design work that I carried out or supervised and the other designers will provide their own memorandum relating to their specific RBW design
- ☐ **specialist** designer who carried out specific elements of RBW design work as outlined in this memorandum – other designers will be providing a memorandum covering the remaining RBW design work

IDENTIFICATION OF DESIGN WORK THAT IS RESTRICTED BUILDING WORK (RBW)

I Mr Paul Clark carried out / supervised the following design work that is restricted building work

PRIMARY STRUCTURE: B1

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ☒ if included. Cross ☐ if excluded	If appropriate, provide details of the RBW	Tick ☒ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
All RBW design work relating to B1	☒ Structure compliance and timber	☒ Carried out ☐ Supervised	Refer - NZS 3604: 2011
Foundations and subfloor framing	☒ Timber Sub-Floor	☒ Carried out ☐ Supervised	Refer - Foundation Plans N's 6 & 7 & Bracing Calcs - NZS 3604: 2011 table 6.4 & 7.1

Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ☒ if included. Cross ☒ if excluded	If appropriate, provide details of the RBW	Tick ☒ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
Walls	☒ Studs in load bearing Walls ☒ Lintels	☒ Carried out ☐ Supervised	Refer - NZS 3604: 2011 table 8.2 - Design It Calcs.
Roof	☒ New trussed hip & Gable roof structure	☐ Carried out ☒ Supervised	- Wang. Frames & Trusses Wanganui Refer DWG N° 9 & Producer Statement
Columns and beams	☒ Verandah Beams & Girder Lintel Verandah Beam / Post Connections	☒ Carried out ☒ Supervised	Refer - Design It Calcs Refer - DWG N°s 20 & 21
Bracing	☒ Wall and Sub Floor bracing	☒ Carried out ☐ Supervised	Refer - Gib Ezybrace Calcs & Bracing Plans DWG N°s 6, 7 & 8
Other	☒	☐ Carried out ☐ Supervised	

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Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ☒ if included. Cross ☒ if excluded	If appropriate, provide details of the RBW	Tick ☒ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
EXTERNAL MOISTURE MANAGEMENT SYSTEMS: E2			
All RBW design work relating to E2	☒ Extensive rusticated weather bd. cladding ☒ Weather tightness and Window/ Doors	☒ Carried out ☐ Supervised	Refer } timber weatherboards - E2/AS1 - 9.4 Refer - E2/AS1 - Fig 72A & Fig 82 and DWG No. 22.
Damp proofing	☒	☐ Carried out ☐ Supervised	
Roof cladding or roof cladding system	☒ Selected colorsteel ☒ Zincalume .55 BMT ☒ corr. iron roof cladding	☒ Carried out ☐ Supervised	Refer - Roof Plan - DWG No 10 - E2/AS1 - 8.4 Profiled Metal Roof Cladding
Ventilation system (for example, subfloor or cavity)	☒	☐ Carried out ☐ Supervised	
Wall cladding or wall cladding system	☒ Matching H3.1 ☒ pre-primed rusticated weatherboards - ☒ Direct Fixed	☒ Carried out ☐ Supervised	Refer - E2/AS1 - 9.4 timber weatherboards
Waterproofing	☒	☐ Carried out ☐ Supervised	
Other	☒	☐ Carried out ☐ Supervised	

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Design work that is RBW	Description of RBW	Carried out or supervised	Reference to plans and specifications
Tick ☒ if included. Cross ☒ if excluded	If appropriate, provide details of the RBW	Tick ☒ whether you carried out this design work or supervised someone else carrying out this design work	If appropriate, specify references
FIRE SAFETY SYSTEMS: C1 - C6			
Emergency warning systems Evacuation and fire service operation systems Suppression or control systems Other		☐ Carried out ☐ Supervised	
Note: The design of fire safety systems is only restricted building work when it involves small-to-medium apartment buildings as defined by the Building (Definition of Restricted Building Work) Order 2011.			
WAIVERS AND MODIFICATIONS			
Waivers or modifications of the Building Code are required. ☐ Yes ☐ No			
If Yes, provide details of the waivers or modifications below:			
Clause	Waiver/modification required		
List relevant clause numbers of building code	Specify nature of waiver or modification of building code required		

ISSUED BY

Name and contact details of the licensed building practitioner who is licensed to carry out or supervise design work that is restricted building work.

Name: Mr Paul ClarkLBP or Registration number: * 115629The practitioner is a: ☒ Design LBP ☐ Registered architect ☐ Chartered professional engineer

Design Entity or Company (optional):

Mailing address (if different from below):

Street address/Registered office: 65 D. Portal StreetSuburb: Dune HillTown/City: Whangarei

PO Box/Private Bag:

Postcode: 4500

Phone number:

Mobile: 027 445 7573

After hours:

Fax:

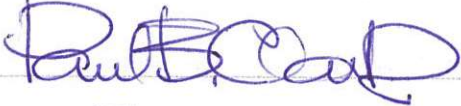
Email address: pv.clarkextra.co.nz

Website:

DECLARATION

I Mr Paul Clark LBP, state that I have applied the skill and care reasonably required of a competent design professional in carrying out or supervising the Restricted Building Work (RBW) described in this form, and that based on this, I also state that the RBW:

- Complies with the building code, or
- Complies with the building code subject to any waiver or modification of the building code recorded on this form

Signature: Date: 10 February 2021

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External Moisture Risk Matrix

Project Name / Facade ID: Garland House (East Wall)

Wall type:

- ☐ Parapet or enclosed balustrade
☒ Other

Risk Scores		Low	Medium	High	Very High
A. Wind Zone:		☒ Low = 0	☐ Medium = 0	☐ High = 1	☐ Very High = 2 ☐ Extra High = 2
B. Number of Storeys:	+	☒ Low = 0	☐ Medium = 1	☐ High = 2	☐ Very High = 4
C. Roof/Wall Intersection Design:	+	☒ Low = 0	☐ Medium = 1	☐ High = 3	☐ Very High = 5
D. Eaves Width:	+	☐ Low = 0	☐ Medium = 1	☒ High = 2	☐ Very High = 5
E. Envelope Complexity:	+	☒ Low = 0	☐ Medium = 1	☐ High = 3	☐ Very High = 6
F. Deck Design:	+	☒ Low = 0	☐ Medium = 2	☐ High = 4	☐ Very High = 6

Total Risk Score:

2

low risk
0 up to 6

medium risk
7 up to 12

high risk
13 up to 20

very high risk
over 20



Display Results Table

Download Results Table (HTML)

This wall can use any of the wall cladding types which have a green tick ☒. Claddings with red crosses ☒ are not permitted under the Acceptable Solution E2/AS1.

Direct fixed to framing	Over nominal 20 mm drained cavity
☒ Timber weatherboard - all types ☒ Timber weatherboard - bevel backed ☒ Fibre cement weatherboards ☒ Vertical profiled metal - corrugated and symmetrical trapezoidal ☒ Vertical profiled metal - corrugated only ☒ Vertical timber board and batten ☒ Fibre cement sheet jointed finish (except stucco over fibre cement backing) ☒ Plywood sheet ☒ EIFS	☒ Masonry veneer ☒ Stucco ☒ Horizontal profiled metal - corrugated and trapezoidal only ☒ Rusticated weatherboards ☒ Fibre cement weatherboards ☒ Fibre cement sheet - flush finish ☒ Fibre cement sheet - jointed finish ☒ Plywood sheet ☒ EIFS ☒ Bevel backed weatherboards

This table is based on Table 3 of E2/AS1. The claddings which have not received a green tick should not be used in this situation.



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External Moisture Risk Matrix

Project Name / Facade ID: Garland House (South Wall)

Wall type:

- ☐ Parapet or enclosed balustrade
☒ Other

Risk Scores		Low	Medium	High	Very High
A. Wind Zone:		☒ Low = 0	☐ Medium = 0	☐ High = 1	☐ Very High = 2 ☐ Extra High = 2
B. Number of Storeys:	+	☒ Low = 0	☐ Medium = 1	☐ High = 2	☐ Very High = 4
C. Roof/Wall Intersection Design:	+	☒ Low = 0	☐ Medium = 1	☐ High = 3	☐ Very High = 5
D. Eaves Width:	+	☐ Low = 0	☐ Medium = 1	☒ High = 2	☐ Very High = 5
E. Envelope Complexity:	+	☒ Low = 0	☐ Medium = 1	☐ High = 3	☐ Very High = 6
F. Deck Design:	+	☒ Low = 0	☐ Medium = 2	☐ High = 4	☐ Very High = 6

Total Risk Score:

2

low risk
0 up to 6

medium risk
7 up to 12

high risk
13 up to 20

very high risk
over 20



Display Results Table

Download Results Table (HTML)

This wall can use any of the wall cladding types which have a green tick ☒. Claddings with red crosses ☒ are not permitted under the Acceptable Solution E2/AS1.

Direct fixed to framing	Over nominal 20 mm drained cavity
☒ Timber weatherboard - all types ☒ Timber weatherboard - bevel backed ☒ Fibre cement weatherboards ☒ Vertical profiled metal - corrugated and symmetrical trapezoidal ☒ Vertical profiled metal - corrugated only ☒ Vertical timber board and batten ☒ Fibre cement sheet jointed finish (except stucco over fibre cement backing) ☒ Plywood sheet ☒ EIFS	☒ Masonry veneer ☒ Stucco ☒ Horizontal profiled metal - corrugated and trapezoidal only ☒ Rusticated weatherboards ☒ Fibre cement weatherboards ☒ Fibre cement sheet - flush finish ☒ Fibre cement sheet - jointed finish ☒ Plywood sheet ☒ EIFS ☒ Bevel backed weatherboards

This table is based on Table 3 of E2/AS1. The claddings which have not received a green tick should not be used in this situation.



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External Moisture Risk Matrix

Project Name / Facade ID: Garland House (West Wall)

Wall type:

- ☐ Parapet or enclosed balustrade
☒ Other

Risk Scores		Low	Medium	High	Very High
A. Wind Zone:		☒ Low = 0	☐ Medium = 0	☐ High = 1	☐ Very High = 2 ☐ Extra High = 2
B. Number of Storeys:	+	☒ Low = 0	☐ Medium = 1	☐ High = 2	☐ Very High = 4
C. Roof/Wall Intersection Design:	+	☒ Low = 0	☐ Medium = 1	☐ High = 3	☐ Very High = 5
D. Eaves Width:	+	☐ Low = 0	☐ Medium = 1	☒ High = 2	☐ Very High = 5
E. Envelope Complexity:	+	☒ Low = 0	☐ Medium = 1	☐ High = 3	☐ Very High = 6
F. Deck Design:	+	☒ Low = 0	☐ Medium = 2	☐ High = 4	☐ Very High = 6

Total Risk Score:

2

low risk 0 up to 6	medium risk 7 up to 12	high risk 13 up to 20	very high risk over 20
-----------------------	---------------------------	--------------------------	---------------------------



Display Results Table

Download Results Table (HTML)

This wall can use any of the wall cladding types which have a green tick ☒. Claddings with red crosses ☒ are not permitted under the Acceptable Solution E2/AS1.

Direct fixed to framing	Over nominal 20 mm drained cavity
☒ Timber weatherboard - all types ☒ Timber weatherboard - bevel backed ☒ Fibre cement weatherboards ☒ Vertical profiled metal - corrugated and symmetrical trapezoidal ☒ Vertical profiled metal - corrugated only ☒ Vertical timber board and batten ☒ Fibre cement sheet jointed finish (except stucco over fibre cement backing) ☒ Plywood sheet ☒ EIFS	☒ Masonry veneer ☒ Stucco ☒ Horizontal profiled metal - corrugated and trapezoidal only ☒ Rusticated weatherboards ☒ Fibre cement weatherboards ☒ Fibre cement sheet - flush finish ☒ Fibre cement sheet - jointed finish ☒ Plywood sheet ☒ EIFS ☒ Bevel backed weatherboards

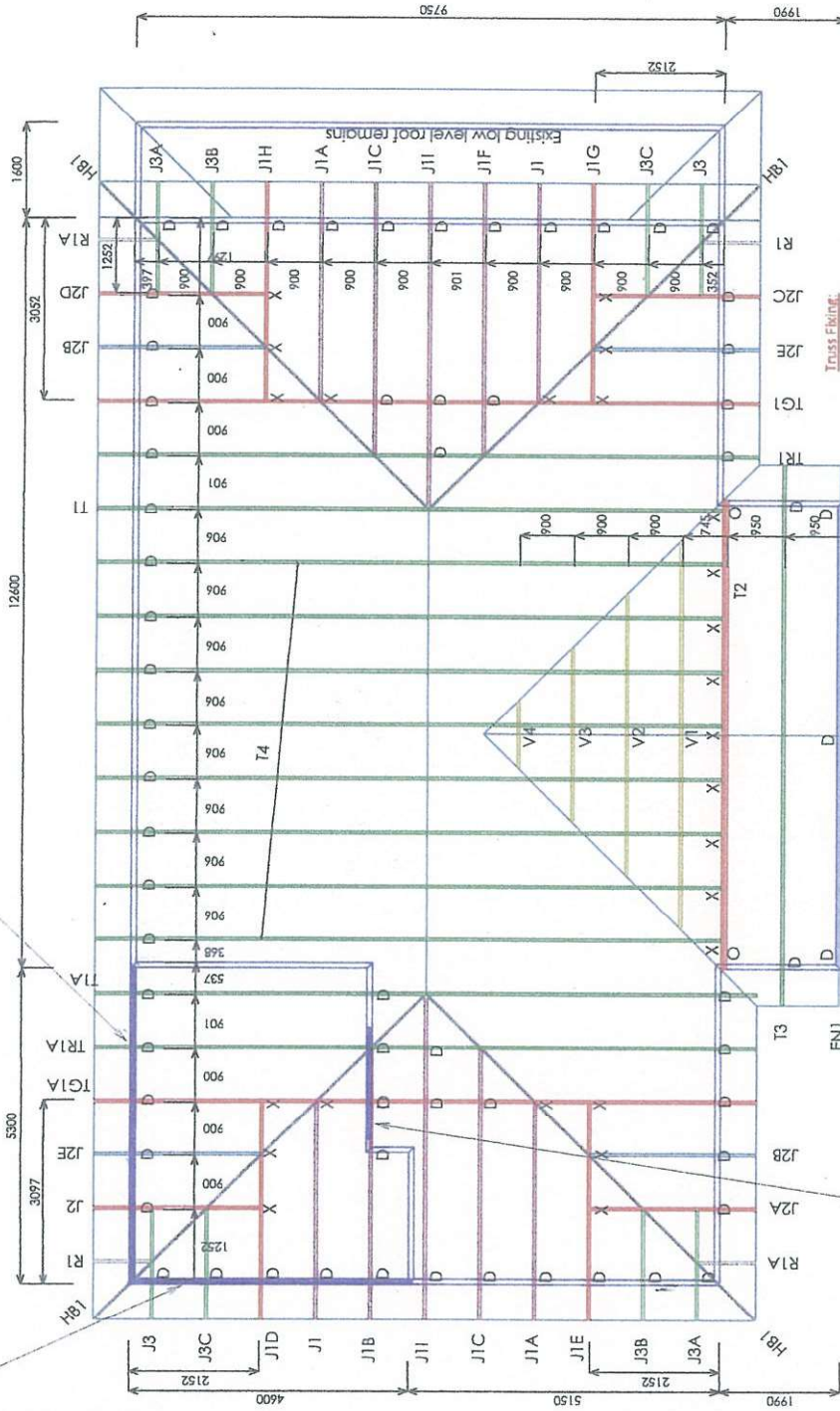
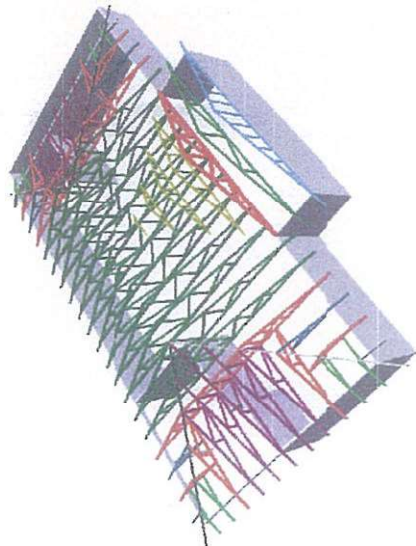
This table is based on Table 3 of E2/AS1. The claddings which have not received a green tick should not be used in this situation.



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Verandah Lintel VB2 300x63 Hyspan (CHH spec)

Verandah Lintel VB1 200x45 Hyspan (CHH spec)

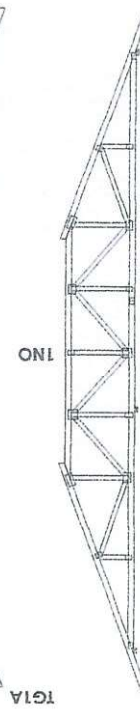
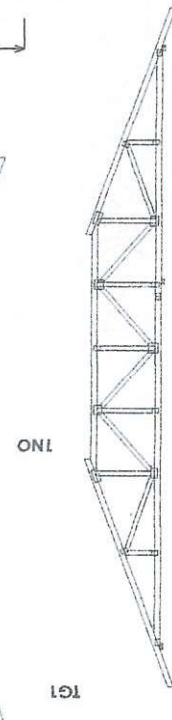
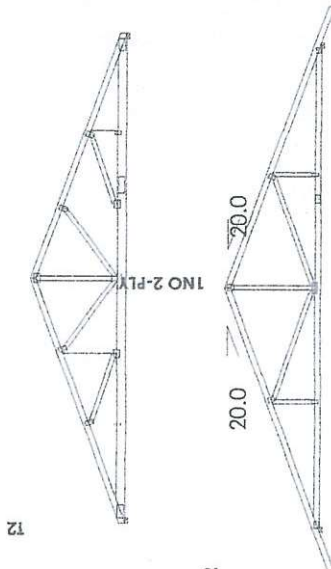
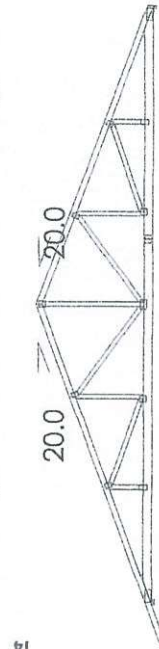


Truss Fixing

- D - Pair 'Z' nals - 2/3.15d Skewed Nails
- or: a single CPC40 cleat.
- X = JH47x90 Jolt Hanger
- Z = JH47x120 Jolt Hanger
- P = JH47x150 Jolt Hanger
- U = C1200 Ceiling Tie
- H = C7400 Cyclone Tie
- M = Pair of Multiprops
- W = Pair of CPC40 Cleats
- B1 = Single CPC80 cleat
- B = Pair of CPC80 Cleats
- K = 16KN Truss to top plate Set

Note:
All other truss fixing must have a
Minimum of 2/3.15d skewed nails

Girder Lintel 2/190x45 SG8 (CHH Spec)



8NO

1NO

1NO

1NO

Prepared By:

Site Address:

Garland
31 Halswell St
Wanganui

Sheet Title:

For Building Consent
Buildable Truss Layout

Date: 17 Sep 2020

Drawn: Mark McCormick

Scale: 1:125

System: MITEK 2020

Job Details:

Roof Pitch

: 20 Deg

Roof Material

: Light

Ceiling Material

: Standard

Wind Zone

: Low

Roof Snow Load

: 0.000 kPa

PrimeCAD v4.7.246

Job Title:

12553

Sheet:

1

Revision Number:



Truss Centres : 900 mm

Roof Live Load : 0.250 kPa

Floor Live Load : 32.0 m/s

Wind Speed : 32.0 m/s



Correspondence from : AUCKLAND
40 Neales Road, East Tamaki 2013
PO Box 58-014, Botany 2163
Phone: 09 274 7108
Fax: 09 274 7100
www.mitek.co.nz

Client: 12553
Site: 31 Halswell St, Wanganui
Phone: 09 274 7108
Fax: 09 274 7100
www.mitek.co.nz

PRODUCER STATEMENT for MITek 20/20[®] TRUSS DESIGN - Version 4.7

DESIGNED BY: MITek New Zealand Limited
DRAWN BY: Wanganui Frames and Trusses
CHECKED BY: MITek[®] Truss Designs

producer statement covers the MITek 20/20[®] truss design and the structural performance of the GANG-NAIL[®] connector for the job reference 12553 and may be used by a Building Consent Authority to assist in determining compliance with New Zealand Building Code.

MITek 20/20[®] truss design program has been developed by MITek New Zealand Limited for the design of MITek[®] timber floor and attic trusses in New Zealand. The truss designs computed by MITek 20/20[®] are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Information Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution, to satisfy the requirements of Clause B1 of the New Zealand Building Code.

- on behalf of MITek New Zealand Limited, and subject to:
- All proprietary products meeting their performance specification requirements
 - The provision of adequate roof bracing and overall building stability
 - Correct selection and placement of GANG-NAIL connector plates
 - Correct input of Truss Design Data as shown in the Fabricator Design Statement for this job
 - The design being undertaken by the accredited fabricator under the terms of the software licence
 - Timber is graded to the requirements of NZS 3603:1993
 - Minimum timber treatment for these MITek[®] trusses shall be in accordance with B2/AS1 Table 1A and the relevant sections of NZS 3602:2003

level on reasonable grounds that the trusses, if constructed in accordance with the MITek 20/20[®] truss design and shop drawings, will comply with the relevant provisions of the New Zealand Building Code.

MITek New Zealand Limited holds a current policy of Professional Indemnity Insurance no less than \$500,000.

on behalf of MITek New Zealand Limited, Date: Thursday, 17 September 2020

Signature

g Ng, BE (Hons), CPEng, INPE, MIPENZ (ID: 146585)
INITIAL SERVICES MANAGER, MITek New Zealand Limited

e computer design input has been carried out by:

Signature

me of Designer Mark McCormick

on behalf of Wanganui Frames and Trusses

Date Thursday, 17 September 2020

Qualifications and Title: MITek Designer

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Demand Calculation Sheet

Job Details

Name:	Penny Garland House - Kitchen/Laundry Addition
Street and Number:	31 Halswell Street
Lot and DP Number	Lots 24,26 BLK1 DP 936
City/Town/District	Whanganui
Designer	Paul Clark
Company	Architectural Draughting Services
Date	Thursday, 21 January 2021

Building Specification

Number of Storeys	1
Floor Loading	2 kPa
Foundation Type	Subfloor
Subfloor Cladding Weight	Light
	Single
Cladding Weight	Light
Roof Weight	Light
Room in Roof Space	No
Roof Pitch (degrees)	20
Roof Height above Eaves (m)	2.1
Building Height to Apex (m)	6.3
Ground to Lower Floor (m)	0.76
Average Stud Height (m)	3.4
Building Length (m)	5.3
Building Width (m)	6.0
Building Plan Area (m²)	30.2

Building Location

Wind Zone = Low		Earthquake Zone 2	
Wind Region	A	Soil Type	D & E (Deep to Very Soft)
Lee Zone	No	Annual Prob. of Exceedance:	1 in 500 (NZS3604:2011 Default)
Ground Roughness	Urban		
Site Exposure	Sheltered		
Topography Class	T1		

Bracing Units required for Wind

	Along	Across
Single Level	199	165
Subfloor Level	405	356

Bracing Units required for Earthquake

	Along & Across
Single Level	254
Subfloor Level	323

GIB EzyBrace® Bracing Software



Single Level Along Resistance Sheet

Job Name: Penny Garland House - Kitchen/Laundry Addition

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									199	254
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind BUs	EQ BUs	401 202%	356 140%
a	1	0.98		3.4	BL1-H	GIB®	81	71		
	2	0.44		3.4	BL1-H	GIB®	28	31		
External Length = 5.3									109 OK	102 OK
b	1	2.40		3.4	GS1-N	GIB®	117	102		
	External Length = 5.3								117 OK	102 OK
c	1	3.60		3.4	GS1-N	GIB®	175	152		
	External Length = 5.3								175 OK	152 OK

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Single Level Across Resistance Sheet

Job Name: Penny Garland House - Kitchen/Laundry Addition

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									165	254
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind BUs	EQ BUs	431 261%	388 153%
m	1	0.60		3.4	BL1-H	GIB®	42	43		
	2	2.80		3.4	GS1-N	GIB®	136	119		
	External Length = 5.4								178 OK	161 OK
n	1	0.62		3.4	BL1-H	GIB®	44	44		
	External Length = 6.0								44 Check	44 Check
o	1	4.30		3.4	GS1-N	GIB®	209	182		
	External Length = 6.0								209 OK	182 OK

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GIB EzyBrace® Bracing Software



Subfloor Level Along Resistance Sheet

Job Name: Penny Garland House - Kitchen/Laundry Addition

									Wind	EQ
									Demand	
									405	323
									Achieved	
Line	Element	Length (m)	Angle (degrees)		Type	Supplier	Wind BUs	EQ BUs	1120 277%	840 260%
A	1	3.00			Anchor Pile	NZS3604	480	360		
	External Length =				5.3				480 OK	360 OK
B	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length =				5.3				320 OK	240 OK
C	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length =				5.3				320 OK	240 OK

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Subfloor Level Across Resistance Sheet

Job Name: Penny Garland House - Kitchen/Laundry Addition

									Wind	EQ
									Demand	
									356	323
									Achieved	
Line	Element	Length (m)	Angle (degrees)		Type	Supplier	Wind BUs	EQ BUs	1120 315%	840 260%
M	1	3.00			Anchor Pile	NZS3604	480	360		
	External Length = 6.0								480 OK	360 OK
N	1	3.00			Anchor Pile	NZS3604	480	360		
	External Length = 6.0								480 OK	360 OK
O	1	1.00			Anchor Pile	NZS3604	160	120		
	External Length = 6.0								160 OK	120 OK

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Custom Wall Elements

Supplier	System	Min. Length m	Wind BUs/m	EQ BUs/m
Ecoply	EP1 0.4	0.4	80	95
Ecoply	EP1 0.6	0.6	95	105
Ecoply	EP1 1.2	1.2	120	135
GIB	GS1-1/2	.4	25	27.5
GIB	GS2-1/2	.4	35	32.5
Golden Edge	NP4	0.4	95	105
Golden Edge	NP6	0.6	80	70
Golden Edge	NP12	1.2	150	135

Custom Subfloor Elements

Supplier	System	Min. Length m	Wind BUs or BUs/m	EQ BUs or BUs/m

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Demand Calculation Sheet

Job Details

Name: Penny Garland House (Dining Room Addition)
 Street and Number: 31 Halswell Street
 Lot and DP Number: Lots 24,26 BLK1 DP 936
 City/Town/District: Whanganui
 Designer: Paul Clark
 Company: Architectural Draughting Services
 Date: Thursday, 21 January 2021

Building Specification

Number of Storeys: 1
 Floor Loading: 2 kPa
 Foundation Type: Subfloor
 Subfloor Cladding Weight: Light
 Cladding Weight: Single
 Roof Weight: Light
 Room in Roof Space: No
 Roof Pitch (degrees): 20
 Roof Height above Eaves (m): 2.1
 Building Height to Apex (m): 6.3
 Ground to Lower Floor (m): 0.76
 Average Stud Height (m): 3.4
 Building Length (m): 3.6
 Building Width (m): 7.9
 Building Plan Area (m²): 28.4

Building Location

Wind Zone = Low

Wind Region: A
 Lee Zone: No
 Ground Roughness: Urban
 Site Exposure: Sheltered
 Topography Class: T1

Earthquake Zone 2

Soil Type: D & E (Deep to Very Soft)
 Annual Prob. of Exceedance: 1 in 500 (NZS3604:2011 Default)

Bracing Units required for Wind

	Along	Across
Single Level	263	112
Subfloor Level	490	281

Bracing Units required for Earthquake

	Along & Across
Single Level	239
Subfloor Level	304

GIB EzyBrace® Bracing Software



Single Level Along Resistance Sheet

Job Name: Penny Garland House (Dining Room Addition)

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									263	239
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind BUs	EQ BUs	454 173%	401 168%
a	1	1.99		3.4	BL1-H	GIB®	169	146		
	External Length = 3.6								169 OK	146 OK
b	1	2.70		3.4	GS1-N	GIB®	132	114		
	External Length = 3.6								132 OK	114 OK
c	1	0.55		3.4	BL1-H	GIB®	37	39		
	2	2.40		3.4	GS1-N	GIB®	117	102		
	External Length = 3.6								154 OK	141 OK

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Single Level Across Resistance Sheet

Job Name: Penny Garland House (Dining Room Addition)

Timber Floor Limit of 120 BUs/m Applied

									Wind	EQ
									Demand	
									112	239
									Achieved	
Line	Element	Length (m)	Angle (degrees)	Stud Ht. (m)	Type	Supplier	Wind BUs	EQ BUs	391 349%	341 143%
m	1	2.10		3.4	GS2-N	GIB®	145	127		
External Length = 7.9									145 OK	127 OK
n	1	1.26		3.4	GS1-N	GIB®	61	53		
	2	1.26		3.4	GS1-N	GIB®	61	53		
	3	1.26		3.4	GS1-N	GIB®	61	53		
	4	1.26		3.4	GS1-N	GIB®	61	53		
External Length = 7.9									245 OK	213 OK

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Subfloor Level Along Resistance Sheet

Job Name: Penny Garland House (Dining Room Addition)

									Wind	EQ
									Demand	
									490	304
									Achieved	
Line	Element	Length (m)	Angle (degrees)		Type	Supplier	Wind BUs	EQ BUs	800 163%	600 197%
A	1	1.00			Anchor Pile	NZS3604	160	120		
	External Length =				3.6				160 OK	120 OK
B	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length =				3.6				320 OK	240 OK
3.6	1	2.00			Anchor Pile	NZS3604	320	240		
									320 OK	240 OK

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Subfloor Level Across Resistance Sheet

Job Name: Penny Garland House (Dining Room Addition)

									Wind	EQ
									Demand	
									281	304
									Achieved	
Line	Element	Length (m)	Angle (degrees)		Type	Supplier	Wind BUs	EQ BUs	640 228%	480 158%
M	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 7.9								320 OK	240 OK
N	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 7.9								320 OK	240 OK

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GIB EzyBrace® Bracing Software



Custom Wall Elements

Supplier	System	Min. Length m	Wind BUs/m	EQ BUs/m
Ecoply	EP1 0.4	0.4	80	95
Ecoply	EP1 0.6	0.6	95	105
Ecoply	EP1 1.2	1.2	120	135
GIB	GS1-1/2	.4	25	27.5
GIB	GS2-1/2	.4	35	32.5
Golden Edge	NP4	0.4	95	105
Golden Edge	NP6	0.6	80	70
Golden Edge	NP12	1.2	150	135

Custom Subfloor Elements

Supplier	System	Min. Length m	Wind BUs or BUs/m	EQ BUs or BUs/m

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DRAWING INDEX

Dwg. No.	
1	Site Plan
2	Existing Floor Plan
3	Altered Floor Plan
4	Altered Floor Plan - (Dimensioned)
5	Bathroom Plan & Layout
6	Foundation Plan (Kitchen/Laundry Addition)
7	Foundation Plan (Dining Room Addition)
8	Bracing Plan
9	Trussed Roof Layout & Producer Statement
10	Roof Plan
11	Drainage Plan
12	Elevation (East Elevation)
13	Elevation (South Elevation)
14	Window & Door Schedule
15	Finishes Schedule
16	Cross-Section A-A
17	Typical Soffit/Eaves Detail
18	Detail 1A
19	Typical Verandah Soffit Detail
	Detail 2
	Typical Foundation Detail
20	Verandah Beam/Post Connections
21	Section B.B
	Thru 200x45 hyspan Verandah Beam
22	Head,Sill & Jamb Flashing Details
	For Direct Fixed Rusticated weatherboards

PENNY GARLAND HOUSE

31 Harswell Street

Whangarei

PROPOSED ADDITIONS & ALTERATIONS TO EXISTING DWELLING

Indicates the proposed
areas of additions and
alteration
Additional Footprint - 20.31m.
APPROX.

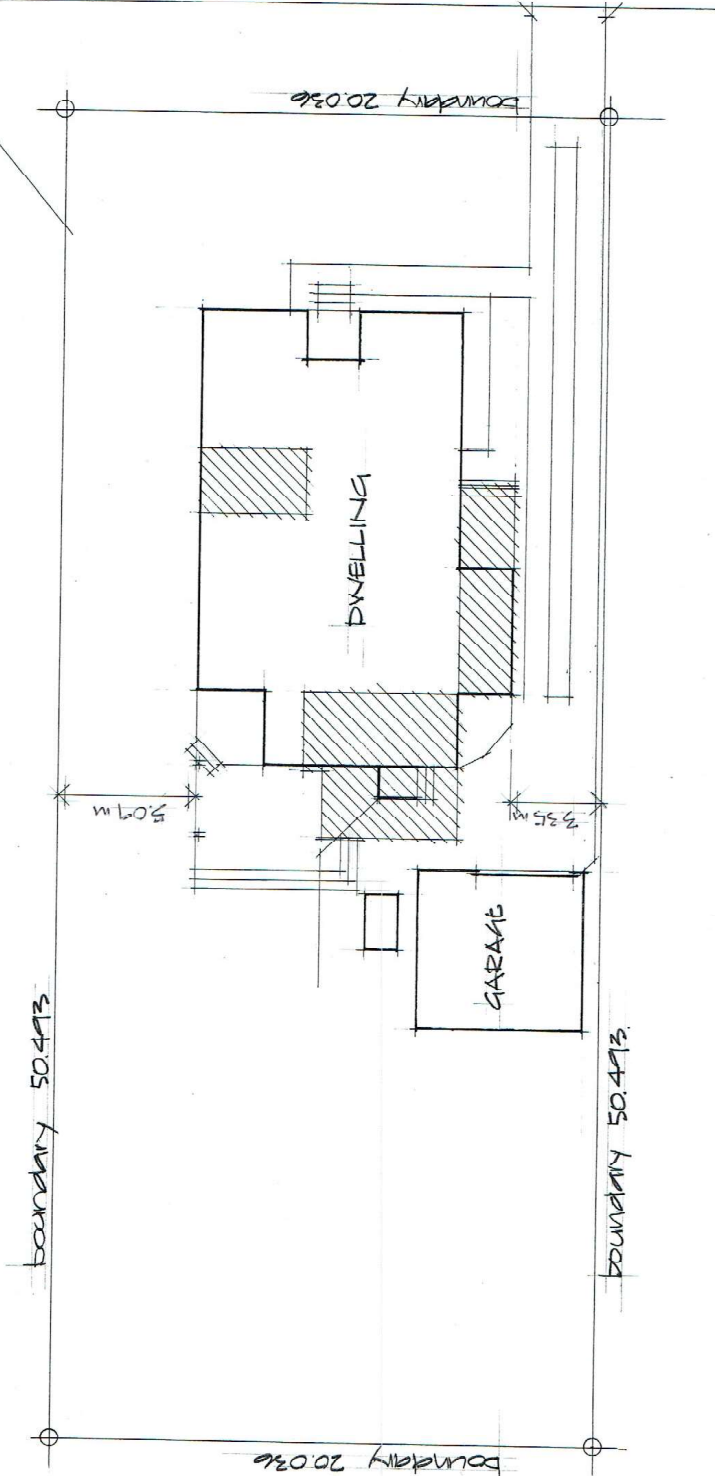
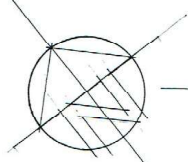
LOTS 24, 26 BIKI DP 936

Property N° 7858

Area 0.1012 Ha.

Site Coverage 22.52%

31 HALSWELL STREET



SITE PLAN 1:200

PENNY GARLAND HOUSE

31 Halswell Street

January 2021

DWG N° 1

NOTES

- Indicates interior & exterior timber framed walls to be removed and or new openings formed.
- Indicates fireplace to be removed. Allow to make good sub-floor structure and flooring to match.
- Allow to remove the entire existing dwelling replace hip roof structure and replace it with a new trussed hip and gable roof structure

Bedroom 3 to be converted into new Master Bedroom
clw Entrance Walk-In-Wardrobe

Proposed new bathroom

Allow to break up and clear concrete patio & steps for new timber deck

Demolish brick BBQ

Remove and block off outside WC

Extent of proposed new kitchen/laundry shown shaded

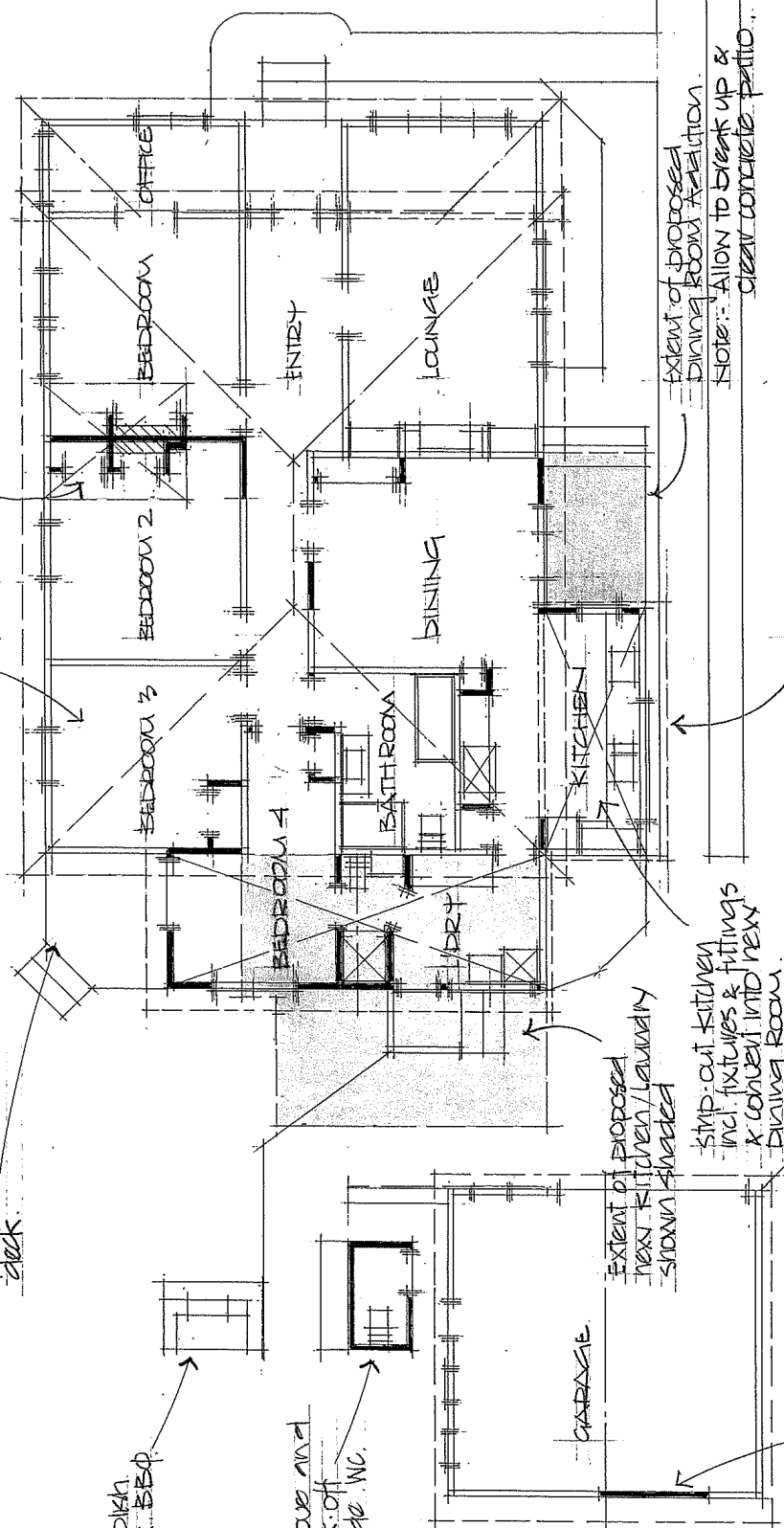
Strip out kitchen incl. fixtures & fittings & convert into new Dining Room

Trim new roller door opening in rear garage wall - to allow for access to lean of section

Extent of proposed Dining Room Addition

Allow to break up & clear concrete patio

Remove lean to roof over kitchen and allow to raise stud height to match existing with new trussed gable roof structure



EXISTING FLOOR PLAN (option two)

PENNY GARLAND HOUSE
31 Halswell Street - Whangarei
JUN 2020
Dwg No 2

Existing Footprint	170.43 m ²
Additional Footprint	20.31 m ²
TOTAL	190.74 m ²
Timber Deck	33.0 m ²
	plus steps

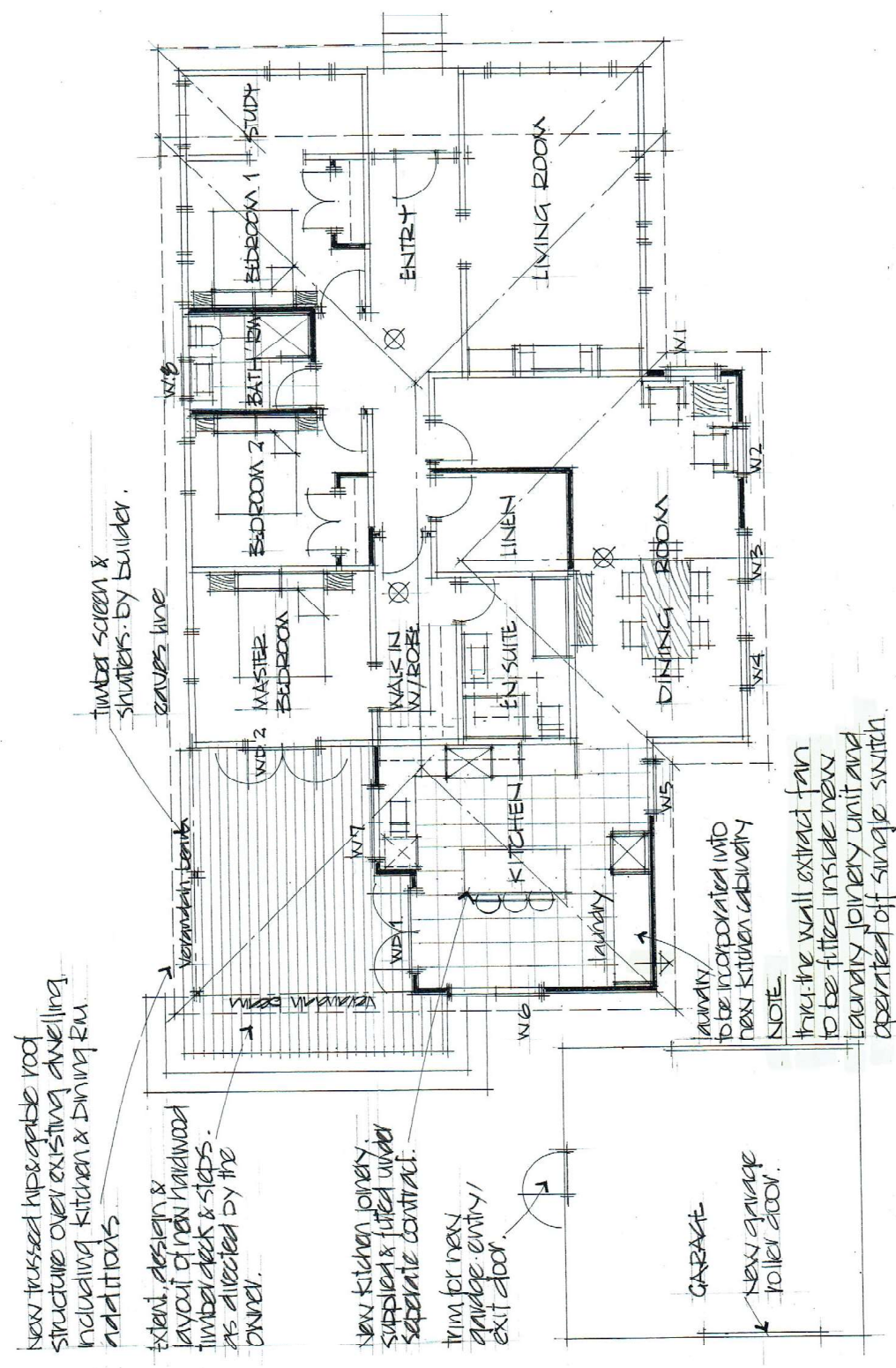
NOTES

- Frame up and line existing openings and or form new timber framed walls
- All structural timber shall be S4 S Grade
- Interior Framing H1.2
- Exterior Framing H1.2
- Unless otherwise stated and or specified stud sizes and spacing shall be as follows:
210x45 studs at 600 (max) c/s (For both exterior & interior walls)
- Indicates positions of Type 1 Hush Smoke Alarms

Amendments

March 2021

- New laundry joinery unit to be fitted with thru-the wall extract fan c/w wall switch.
- Extract hood is to be fitted over kitchen cooking hob & vented thru roof above - Model *Schweigen um 1170-94p
- 40 cm Power Pick Rangehood c/w powerful external motor. Refer installation details.



ALTERED FLOOR PLAN 1:100

PENNY GARLAND HOUSE

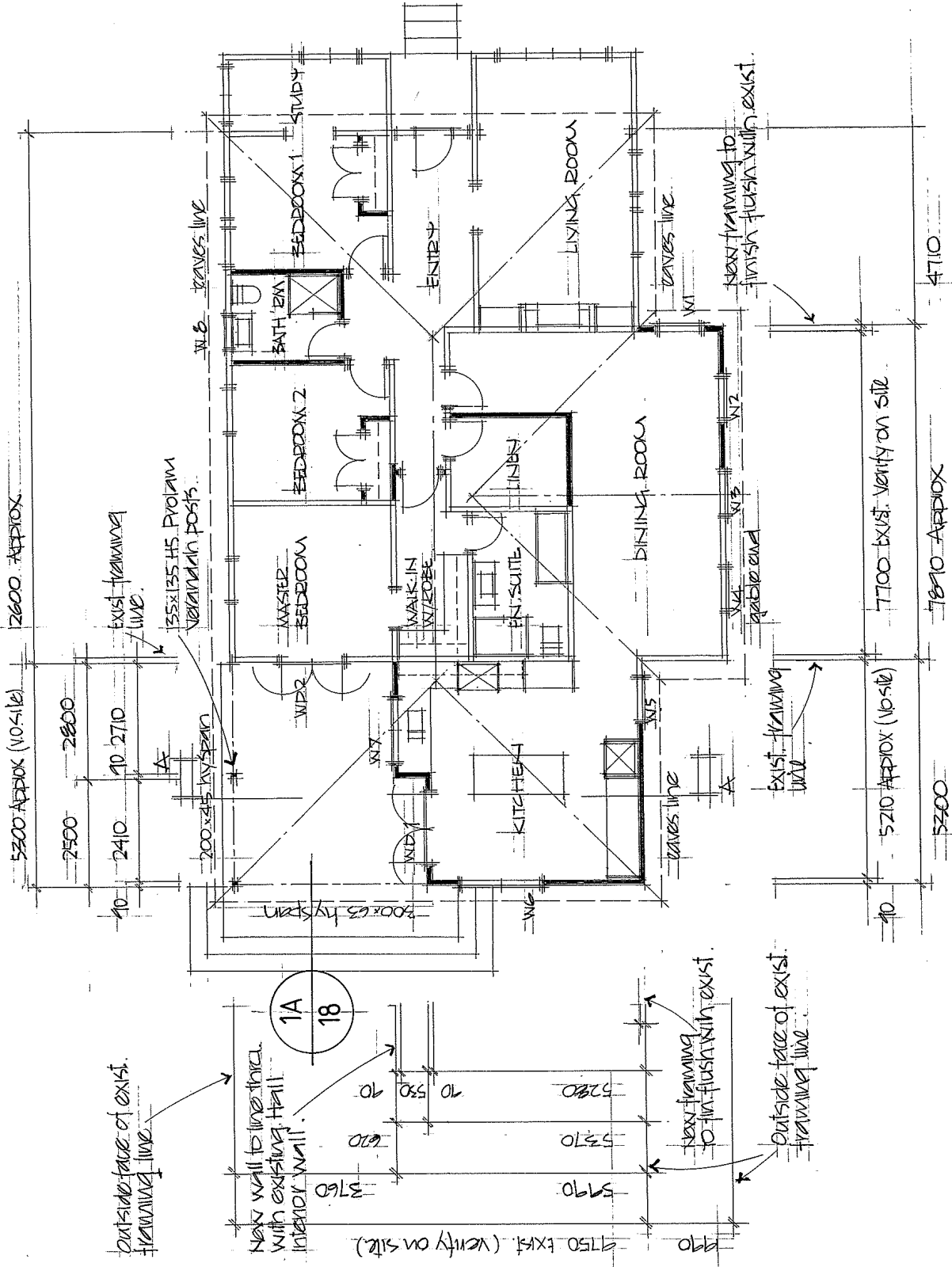
31 Halswell Street - Whangarei

Sept 2020

Dwg No 3

GENERAL NOTES

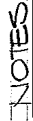
the contractor is to check and verify all dimensions areas and levels on site prior to commencing any shop drawings, fabrication or construction.



ALTERED FLOOR PLAN (DIMENSIONED)

PENNY GARLAND HOUSE

31 Halswell Street - Whangarei



Bathroom Fixtures & Fittings

- 1200 x 100 proprietary shower c/w
- one piece moulded shower lining
- selected mixer & slide shower
- 900 vanity (floor mounted) c/w mixer.
- WC, pan & no used copper cistern
- Heated towel rail
- Vanity mirror
- toilet roll holder
- three the wall extract fan
- Flooring:
 - selected ceramic floor tiles on tile & slate underlay

Bedrooms 1 & 2

- New works to be finished and decorated to match existing - all as directed by the owner
- Allow to make good any existing damages effected by this building work
- Flooding - existing caused to remain - allow to protect flooring during building work

BATHROOM PLAN & LAYOUT 05:150

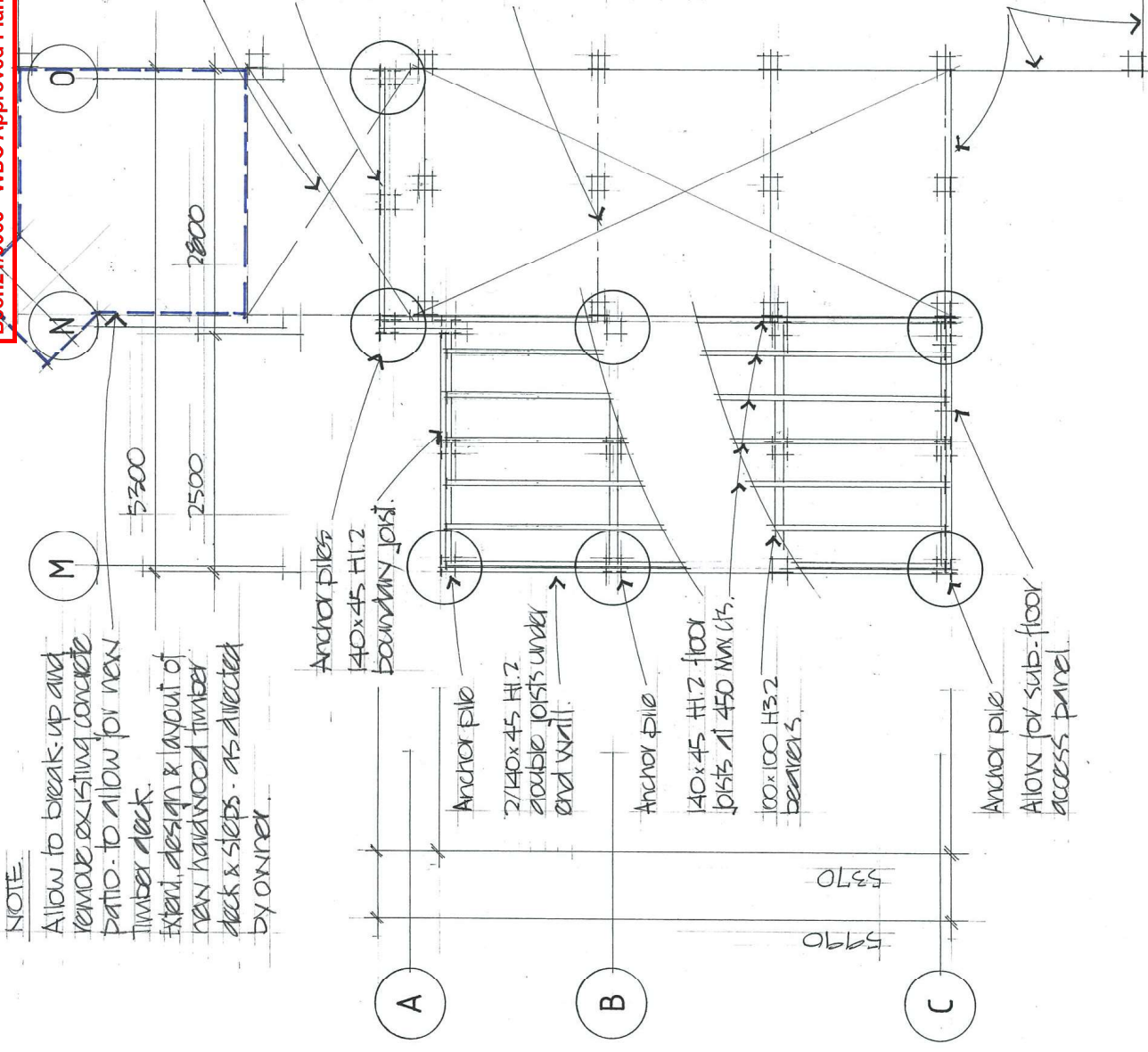
WILLIAMS GAZLAND HOUSE

3 | t | a | s | w | e | l | Street - Whanganui

Page 47 of 168
5/22/2025

NOTE.

Allow to break up and remove existing concrete patio to allow for new timber deck.
Extend, design & layout of new handwood timber deck & steps - as directed by owner.



Remove this section of existi. sub-floor framing timbers (shown dotted).

Next row of piles & bearers. to line thru with next building line of kitchen addition

Note
Allow for level transition between existing F.F. level and new addition

This section of existing sub-floor framing is to remain

Note
The builder is to establish that the existi. sub floor structure is compliant with the building code and allow to make good where necessary.

Existing dwelling building framing/foundation line.

NOTES

Indicates Anchor piles 900mm (MIN)

All sub floor timbers shall be SG8 Grade

Floor Joists H1.2
Bearers H3.2
Timber piles H5

All work and materials are to comply with NZS 3604:11 (Refer sections 6&7) and the building code.

Allow to fix H3.1 21mm strandboard flooring to the entire sub floor addition - all on 140x45 H1.2 floor joists at 450 (Max) cts.

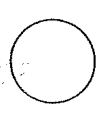
Allow to set-back piles and bearers, as required to accommodate selected Hardiflex lined foundation. Refer detail

Proved foundation wall ventilators, spaced regularly in foundation walls - commencing 750mm from corners at intervals not exceeding 1.8 metres.

All sub floor fixings below 600mm from ground level to be stainless steel (304)

FOUNDATION PLAN 1:50 - KITCHEN/LAUNDRY ADDITION
PENNY GARLAND HOUSE
31 Halswell Street. Whangarei.
January 2021
Dwa No 6

NOTES



Indicates Anchor piles
900mm (MIN)

All sub floor timbers shall be SG8 Grade

- Floor Joists H1.2
- Bearers H3.2
- Timber piles H5

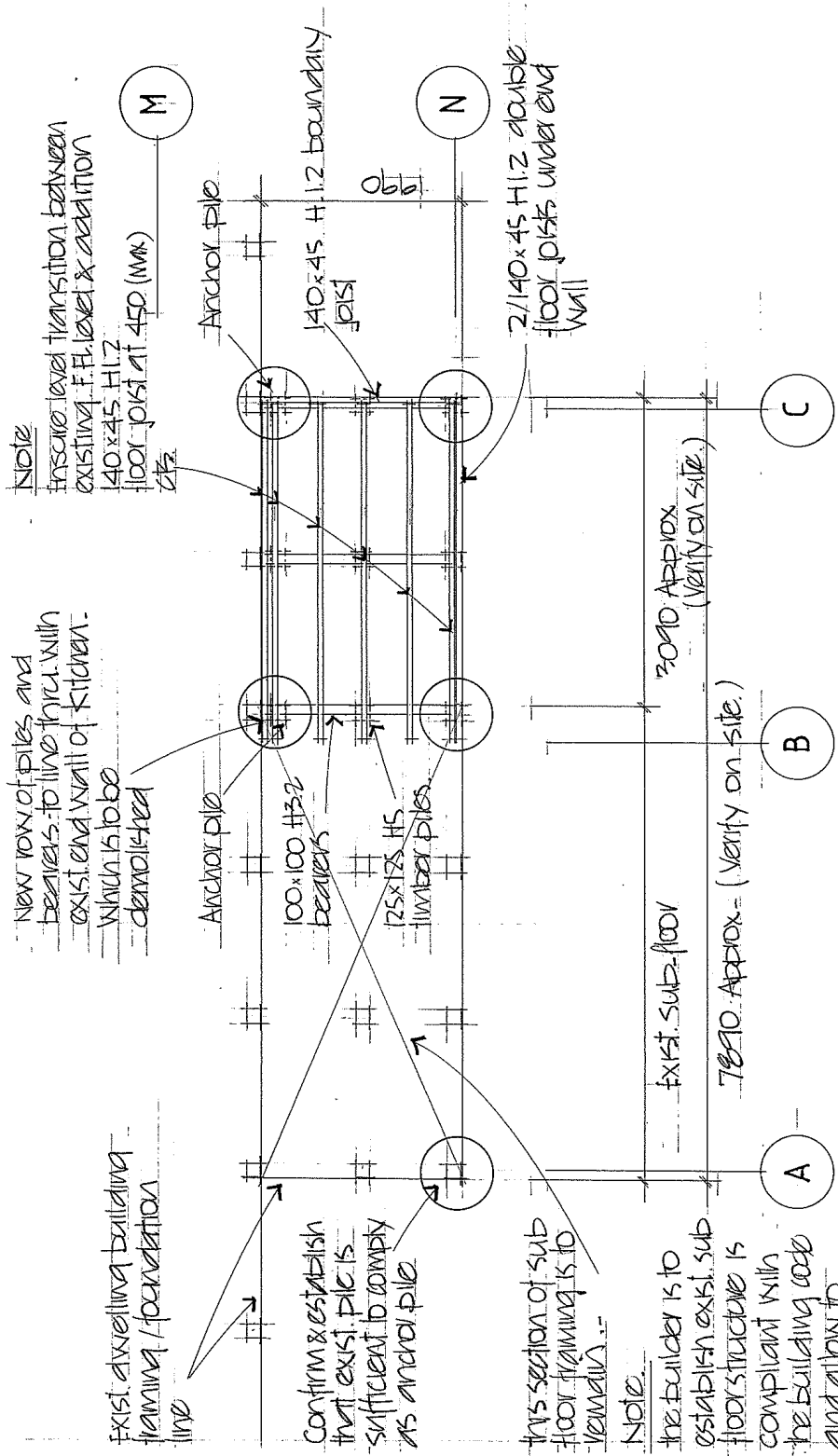
All work and materials are to comply with NZS 3604:11 (Refer sections 6&7) and the building code.

Allow to fix H3.1 21mm strandboard flooring to the entire sub floor addition - all on 140x45 H1.2 floor joists at 450 (Max) cts.

Allow to set-back piles and bearers, as required to accommodate selected Hardiflex lined foundation. Refer detail

Proved foundation wall ventilators, spaced regularly in foundation walls - commencing 750mm from corners at intervals not exceeding 1.8 metres.

All sub floor fixings below 600mm from ground level to be stainless steel (304)



FOUNDATION PLAN 1:50 DINING ROOM ADDITION

PENNY CARLAND HOUSE

31 Halswell Street - Whangarei

Dwg No 7

Bcon21/0063 - WDC Approved Plans - 15/03/2021

DINING ROOM
ADDITION

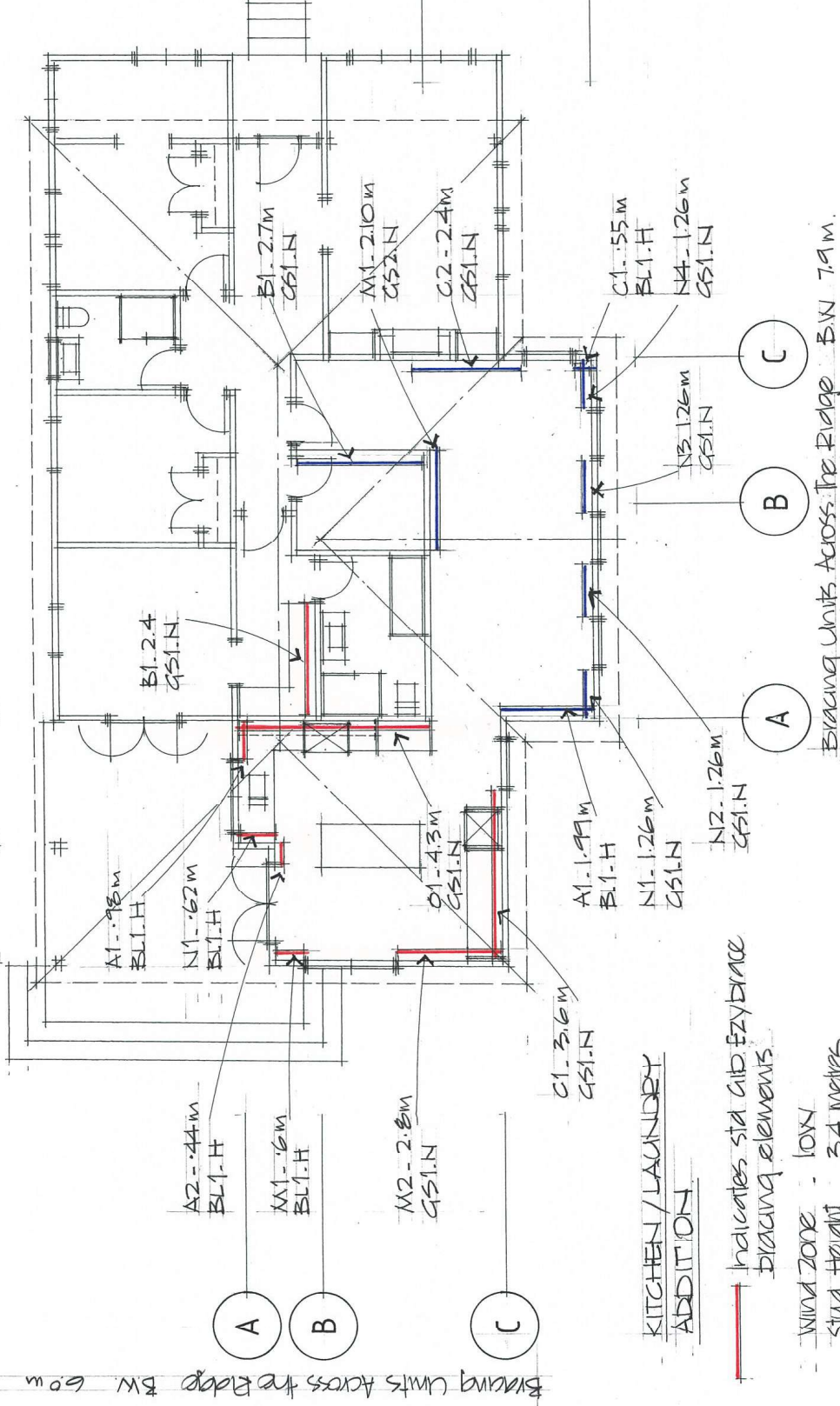
Indicates std gip Ezybrace
bracing elements

Wind Zone - LOW
Stud Height - 3.4 metres

the bracing demand is based on
the Dining Room Addition only
28.40 m² Approx

Bracing Units Along the Ridge BL 5.3m

M N O



KITCHEN / LAUNDRY
ADDITION

Indicates std gip Ezybrace
bracing elements

Wind Zone - LOW
Stud Height - 3.4 metres

the bracing demand is based on the
Kitchen / Laundry addition only
30.20 m² Approx

Bracing Units Across the Ridge BL 7.9m.

A B C

BRACING PLAN 1:100

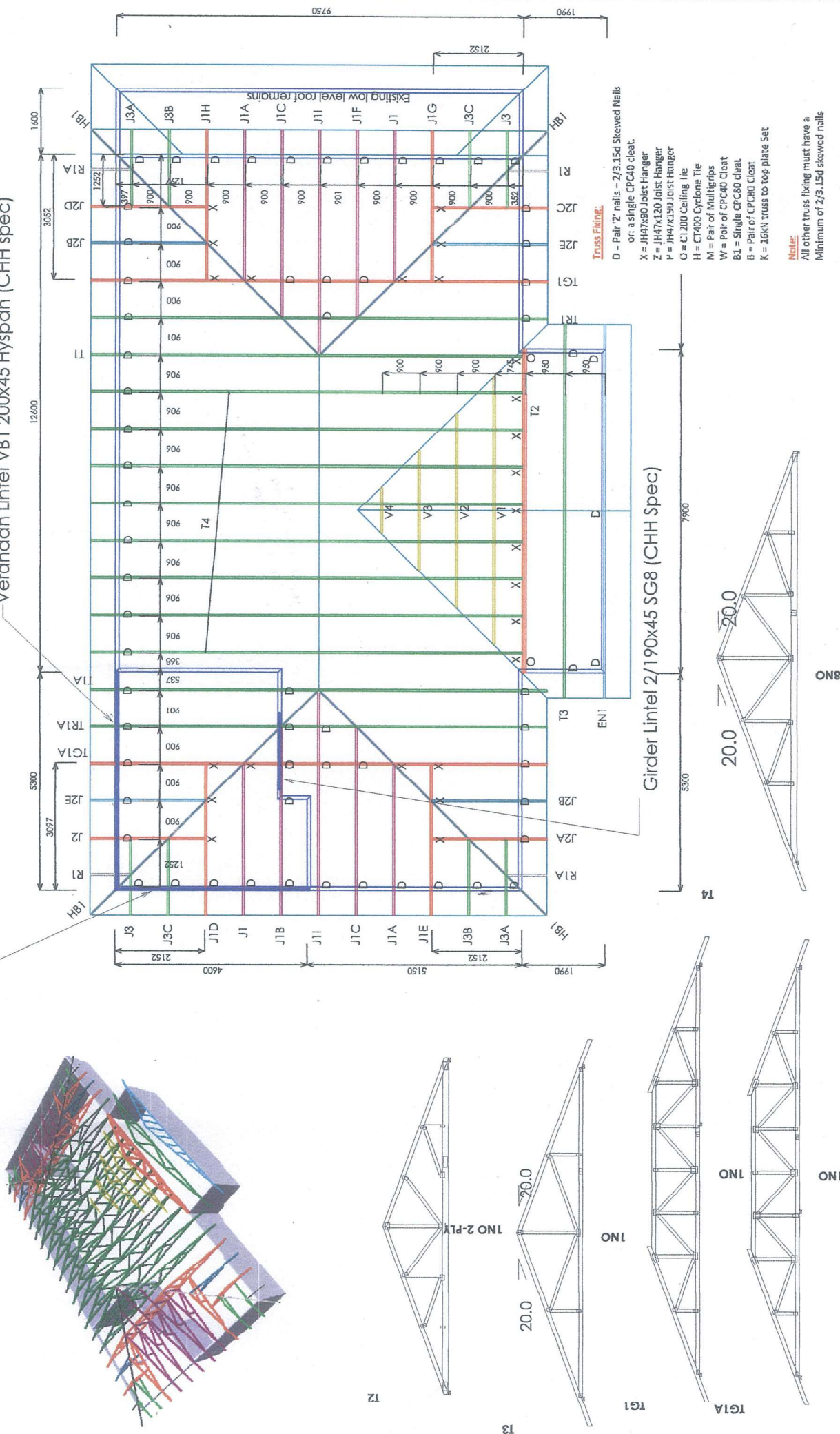
PENNY GARLAND HOUSE

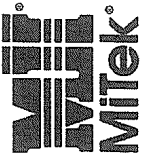
31 Halswell Street - Whangarei

January 2021

Page 50 of 168

Dwg No 8





42020 Engineering 4.7.246.0

PRODUCER STATEMENT FOR MITek 20/20° TRUSS DESIGN - Version 4.7

SUED BY: **MITek New Zealand Limited**
Wanganui Frames and Trusses
MITek® Truss Designs

is producer statement covers the MITek 20/20° truss design and the structural performance of the GANG-NAIL® connector
ite for the job reference **12553** and may be used by a Building Consent Authority to assist in determining compliance with
e New Zealand Building Code.

e MITek 20/20° truss design program has been developed by MITek New Zealand Limited for the design of MITek® timber
e, floor and attic trusses in New Zealand. The truss designs computed by MITek 20/20° are prepared using sound and widely
cepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and
rification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution, to satisfy the
uirements of Clause B1 of the New Zealand Building Code.

- in behalf of MITek New Zealand Limited,** and subject to:
- i) All proprietary products meeting their performance specification requirements
 - ii) The provision of adequate roof bracing and overall building stability
 - iii) Correct selection and placement of GANG-NAIL connector plates
 - iv) Correct input of Truss Design Data as shown in the Fabricator Design Statement for this job
 - v) The design being undertaken by the accredited fabricator under the terms of the software licence
 - vi) Timber is graded to the requirements of NZS 3603:1993
 - vii) Minimum timber treatment for these MITek® trusses shall be in accordance with B2/AS1 Table 1A and the relevant sections of NZS 3602:2003

relieve on reasonable grounds that the trusses, if constructed in accordance with the MITek 20/20° truss design and shop
wings, will comply with the relevant provisions of the New Zealand Building Code.

Tek New Zealand Limited holds a current policy of Professional Indemnity Insurance no less than \$500,000.

in behalf of MITek New Zealand Limited, **Date: Thursday, 17 September 2020**

Signature

Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
CHNICAL SERVICES MANAGER, MITek New Zealand Limited

e computer design input has been carried out by:

igned: *Mark McCormick*

me of Detailer: Mark McCormick

i behalf of: Wanganui Frames and Trusses

Date: ... Thursday, 17 September 2020 ...

Qualifications and Title: MITek Detailer

COMPLIANCE WITH

E1/AS1 - Table 5

Downpipe sizes for given roof pitch and area

Dwelling total roof area - 220.0 sqm.
20° roof pitch

therefore 4N° 80φ downpipes
more than complies with :-
E1/AS1 - Table 5

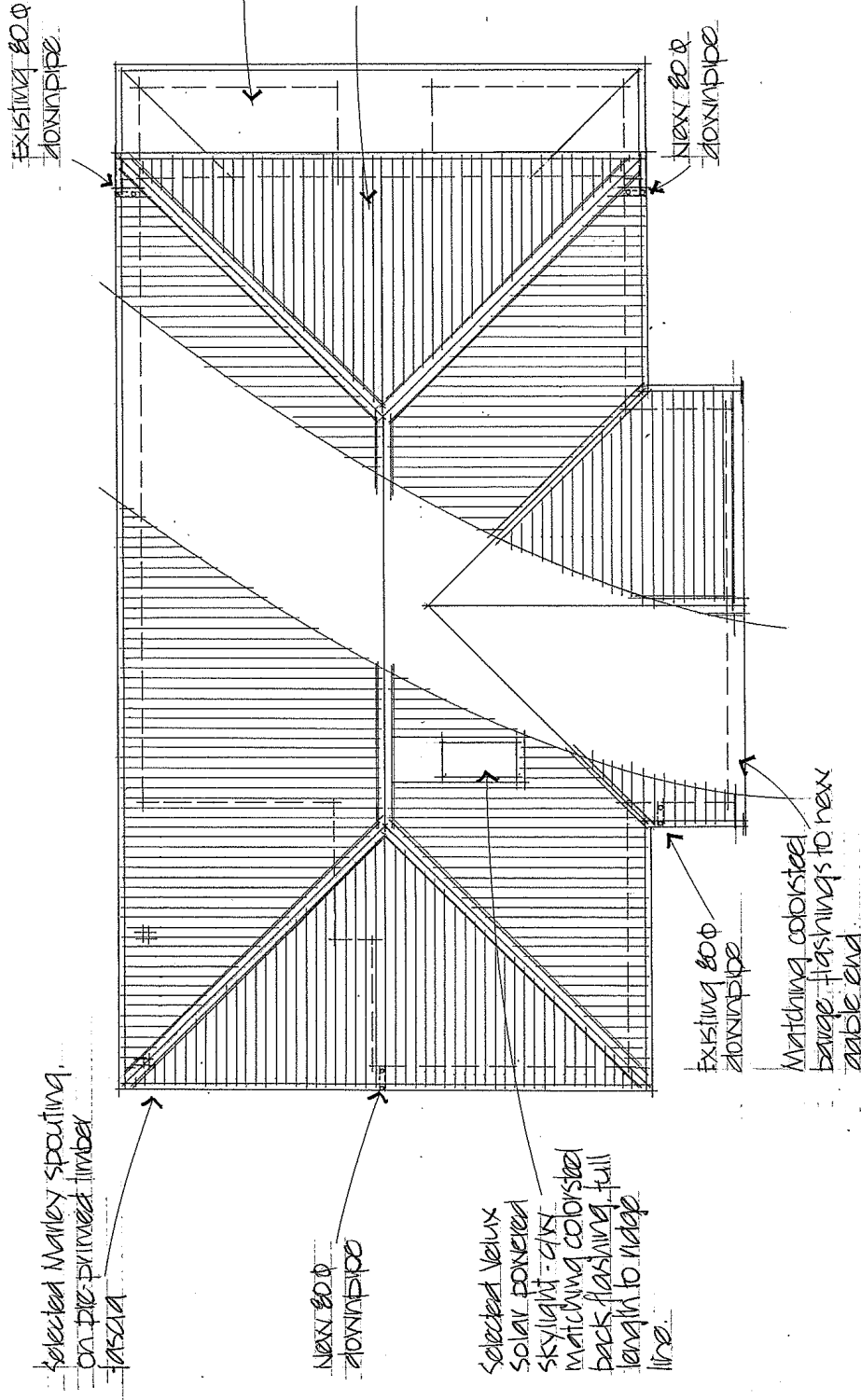


Table 5: Downpipe Sizes for Given Roof Pitch and Area
Paragraph 4.2.1

Downpipe dia. (mm) minimum internal sizes	0-25°	25-35°	35-45°	45-55°
63 mm diameter	60	60	40	35
74 mm diameter	65	70	60	50
100 mm diameter	100	100	110	90
150 mm diameter	150	150	150	150
83 x 99 rectangular	100	100	100	100
75 x 75 rectangular	100	100	100	100
100 x 75 rectangular	100	100	100	100

Plan area of roof served by the downpipe (m²)

Roof pitch	25-35°	35-45°	45-55°
60	60	40	35
65	70	60	50
70	100	110	90
75	150	150	150
80	150	150	150
85	150	150	150
90	150	150	150

1 July 2001

DEPARTMENT OF BUILDING AND HOUSING

ROOF PLAN 1:100

DENNY GARLAND HOUSE
31 Halswell Street, Whangarei
January 2021

KEY

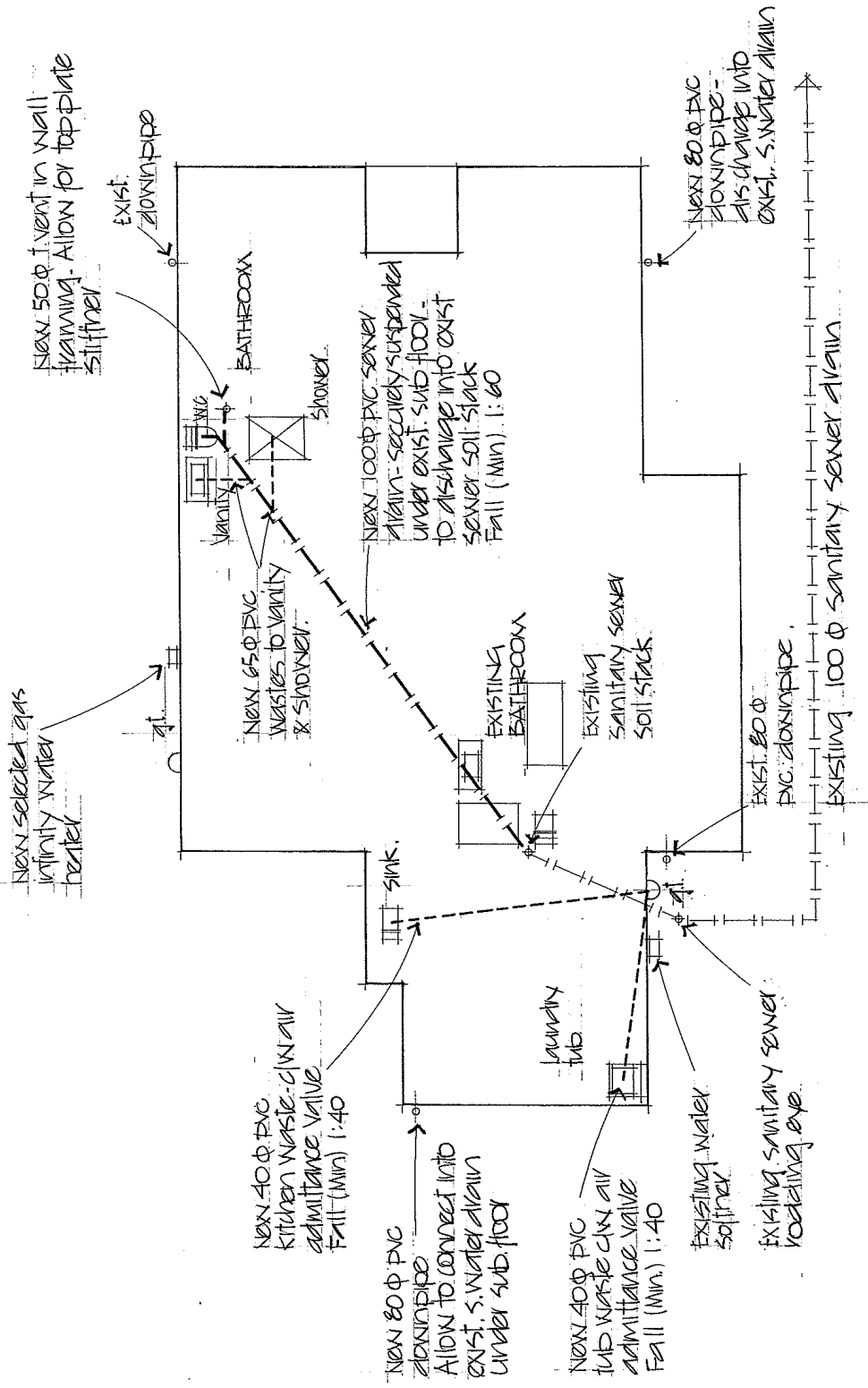
- terminal vent / soil stack
- gully trap - existing
- downpipe - exist. & new
- Refer - Roof Plan Dwg N° 10 for compliance to E1/AS1 Table 5
- Existing sanitary sewer drain
- New 100 Ø PVC sanitary sewer drain - Fall (Min) 1:60
- New 40 Ø or 60 Ø PVC wastes Fall (Min) 1:40

NOTES

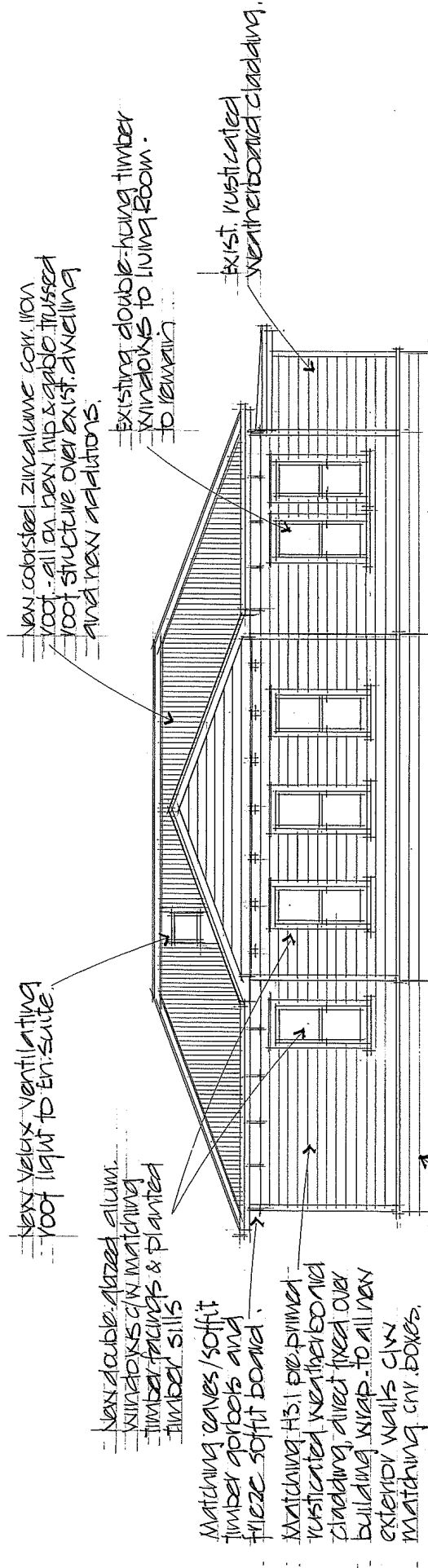
Plumbing & Drainage - All to comply with the building code
AS/NZS 3500 Plumbing & Drainage
AS/NZS 3500.2 Sanitary Plumbing
E1/AS1 Surface Water
Hot water service to bathrooms and new kitchen/laundry is to be supplied from new selected gas infinity water heater
In compliance with :-
G12/AS1

H1/AS1 50 Hot Water Systems
NZS4305 3.2.1 Pipe Runs
Acceptable Max Pipe lengths -

Nominal Pipe Size mm	10	12	15	20
Length (metres)	25	20	12	7



DRAINAGE PLAN 1:100
PENNY GARLAND HOUSE
31 Halswell Street, Whangarei
January 2021

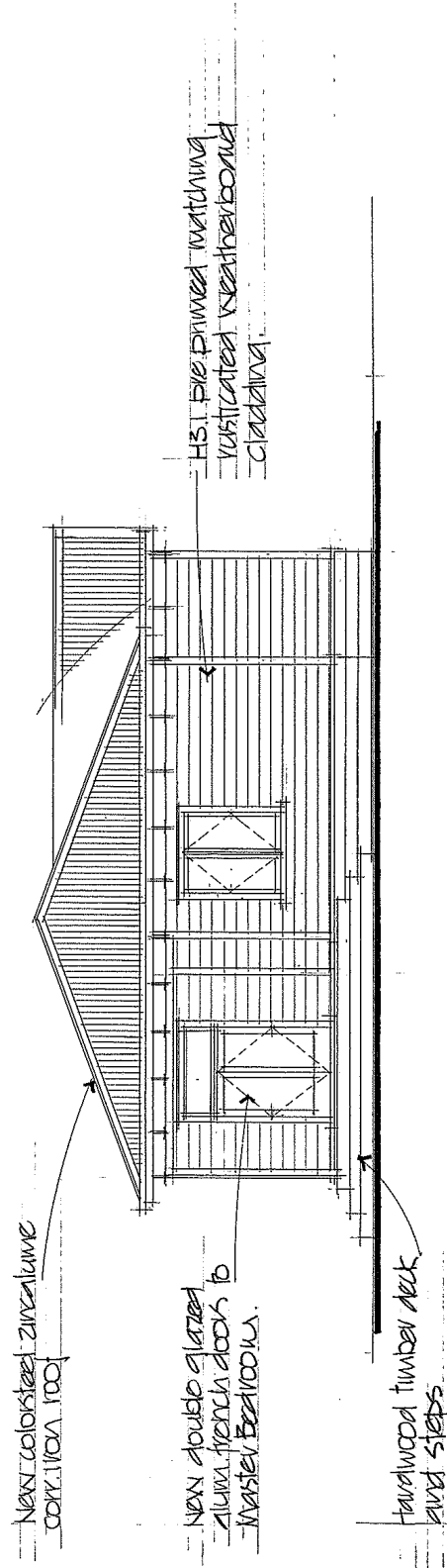


EAST ELEVATION
(view from driveway.)

ELEVATION 1:100

PENNY GARLAND HOUSE

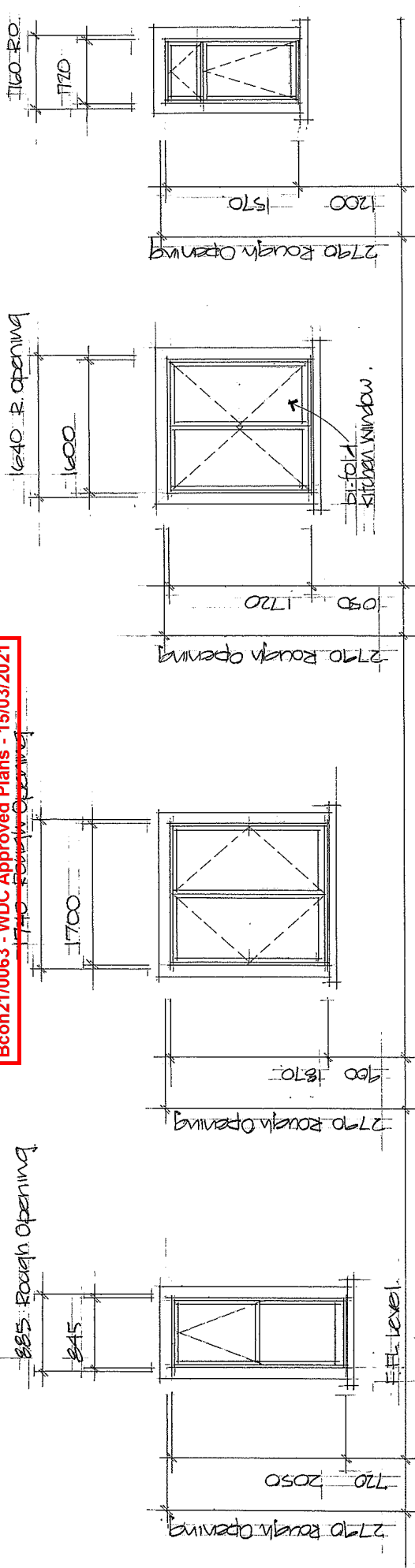
31 Halswell Street, Whanganui



SOUTH ELEVATION
(View from rear of section)

ELEVATION 1:100
PENNY GARLAND HOUSE
31 Halswell Street, Whangarei
Sent 7/2020 Dwg No 13

Bcon21/0063 - WDC Approved Plans - 15/03/2021



W1, W2, W3, W4 & W5
Double glazed aluminium window joinery units clw matching timber facings & planted timber sill.

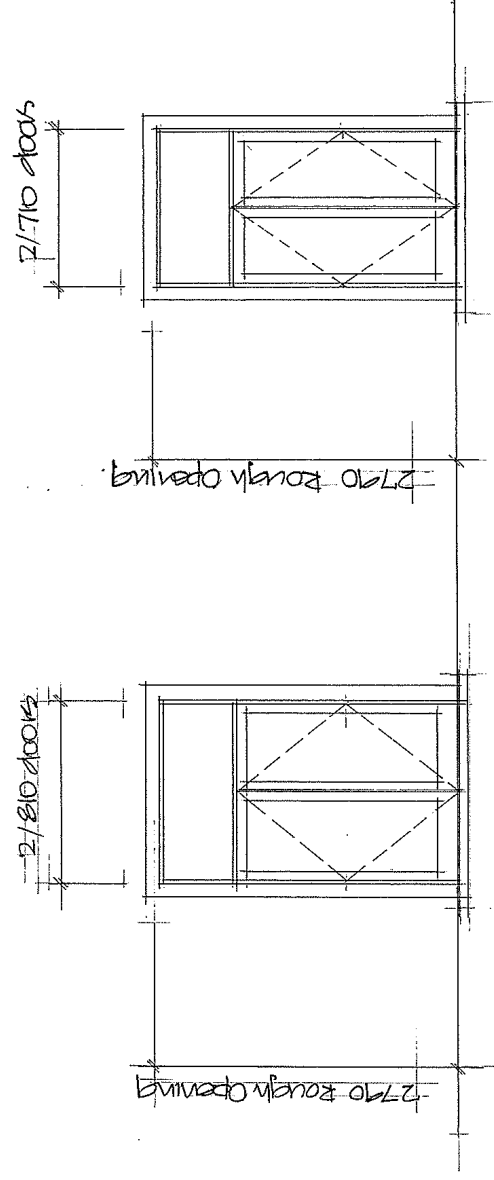
W6
Double glazed aluminium window joinery unit clw matching timber facings & planted timber sill.

W7
Double glazed aluminium window clw matching timber facings & planted sill.

W8
Double glazed aluminium window clw matching timber facings & planted sill.

NOTES

TO comply with E2/AS1 (direct fixed cladding) the builder is to allow for 20mm batten batten each side of timber frame rough opening indicated.
The builder is also to confirm the finished sizes of all windows and doors with the owner, incl finished head heights above FFL level - these must match existing - before trimming openings and the manufacturer of new aluminium joinery units.



D1
Double glazed aluminium door with fixed top light over clw matching timber facings and sill.

D2
Double glazed aluminium door with fixed top light over clw matching timber facings and sill.

WINDOW & DOOR SCHEDULE
PENNY GARLAND HOUSE
31 Halswell Street - Whanganui
East 1010
Dwg No 14

PENNY GARLAND HOUSE
31 Halswell Street - Whanganui

INTERIOR FINISHES

KITCHEN

- All new Gib.Wall linings and ceiling linings are to be taped, stopped and finished by an accredited interior plasterer. All stopping is to be carried out in accordance with all joints taped and finished smooth to a level 4 to suit paint finish.
- Kitchen joinery including laundry joinery unit is to be supplied and fitted under a separate contract.
- All timber trim (architraves, skirtings and scotias etc) are to be paint quality and watching existing profiles.
- Flooring - to be selected timber laminated flooring.

DINING ROOM

- All new Gib.Wall linings and ceiling linings are to be taped, stopped and finished by an accredited interior plasterer. All stopping is to be carried out in accordance with all joints taped and finished smooth to a level 4 to suit paint finish.
- All timber trim (architraves, skirtings and scotias etc) are to match existing and be of paint quality.
- Allow to replace existing carpet with new selected carpet on Heavy duty underlay.

LINEN

- All new Gib.wall linings and ceiling linings are to be taped, stopped and finished by an accredited interior plasterer. All stopping is to be carried out in accordance with all joints taped and finished smooth to a level 4 to suit paint finish.
- All timber trim (architraves, skirtings and scotias etc.) are to match existing and be of paint quality..
- Flooring - existing carpet flooring to remain, allow to protect flooring during building works.
- Shelving - Allow to supply and fix as directed by owner
- proprietary shelving system complete with hanging rails.

ENSUITE

- No alteration to this existing bathroom except for existing bathroom door to be re positioned.
Allow to make good any existing surfaces effected by this building work.

WALK IN WARDROBE

- All new Gib.wall linings and ceiling linings are to be taped, stopped and finished by an accredited interior plasterer. All stopping is to be carried and in accordance with good trade practice to be smooth and even surface with all joints taped and finished smooth to a level 4 to suit paint finish.
- All timber trim (architraves, skirtings and scotias etc) are to be paint quality and matching existing profiles.
- Flooring - Allow to replace existing carpet with new selected carpet on heavy duty underlay.
- Shelving - Allow to supply and fix as directed by owner
- proprietary shelving system complete with hanging rails.

MASTER BEDROOM

- No alteration to this existing bedroom except for trimming a new door opening off the walk in wardrobe and trimming new French door opening out onto new hardwood timber deck.
- Allow to make good any existing surfaces effected by this building work.
- Flooring - Existing carpet flooring to remain - allow to protect flooring during building work.

BEDROOM 1 & 2

- No alteration to these existing bedrooms except for trimming new Door openings and the addition of new wardrobes to each bedroom.
- All new Gib.wall linings & ceiling linings are to be taped, stopped and finished by an accredited interior plasterer. All stopping is to be smooth and even surface with all joints taped and finished smooth t a level 4 to suit paint finish.
- All timber trim (architraves, skirting and scotias etc. are to match existing - stained and polyurethaned to match.
- Allow to make good any existing surfaces effected by this building work.
- Flooring - Existing carpet flooring to remain - allow to protect flooring during building work.

STUDY, ENTRY & LIVING ROOM

- There are no alterations to these three areas. Allow to protect all surfaces including flooring during the building work.

ELECTRICAL

- Allow to relocate existing switchboard and meter board.
- The builder/electrician is to work with the owner for the position and or relocation of additional switched socket outlets, light switches, and downlights and general pendant lighting etc.
- The builder/electrician is to allow for supply and installation of approved heater/dehumidifier into the new linen cupboard.
- The builder/electrician is to work with the owner for supply and installation of an additional heat pump to service Bedrooms, Hall and Dining room.
- The builder/electrician is to allow for ceiling mounted extract fan and ducting of outlets, all to be vented through soffits, to service Ensuite and extract hood over Kitchen Stove.

ULTRAFAST BROADBAND/DATA

- The builder is to work with the owners broadband service provider to supply extra broadband outlets - as directed by the owner.

PLUMBING & DRAINAGE

- The builder is to work with the Plumber/Drainlayer to connect new service from Bathroom and Kitchen into existing sanitary sewer drain.
- Hot water service is to be provided from Gas Infinity water Heater.
- Hot water to be tempered to 55 c

EXTERIOR PAINTING

Allow to paint all new existing exterior rusticated weatherboards, including foundation base boards, window & door facings and sills. All to match existing and as directed by the owner.

FINISHES SCHEDULE

PENNY GARLAND HOUSE

31 Halswell Street - Whanganui

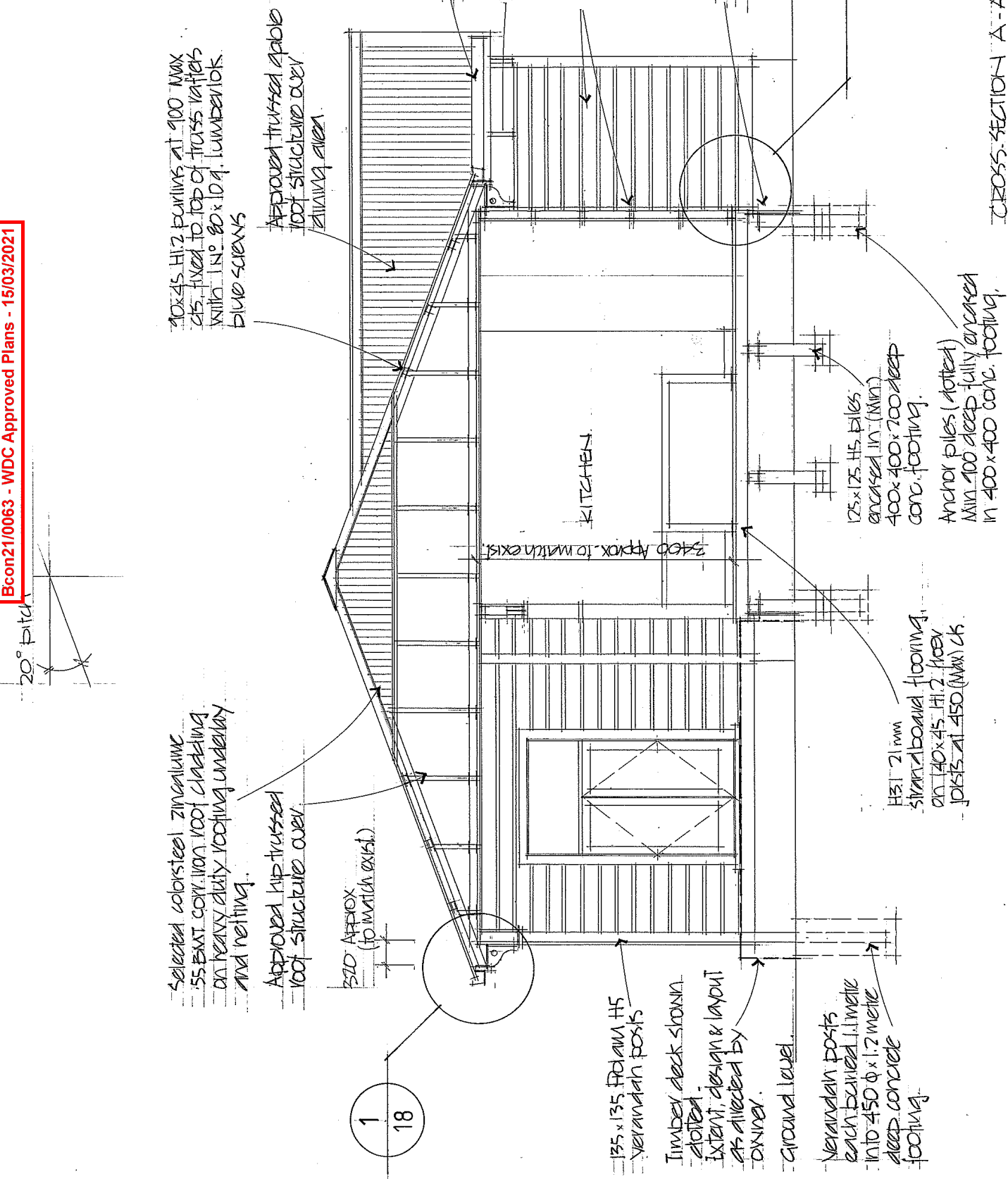
Sest 7m

NOTES

All structural timbers other than truss timbers shall be SG8 Grade
Refer truss manufacturer producer statement design & layout for specific truss timbers, treatment and grades.

Roof trusses	Refer truss Statement
Purlins	H.1.2
Interior Framing	H.1.2
Exterior Framing	H.1.2
Floor joists	H.1.2
Bearers	H.3.2
Timber piles	H5
Verandah posts	H5

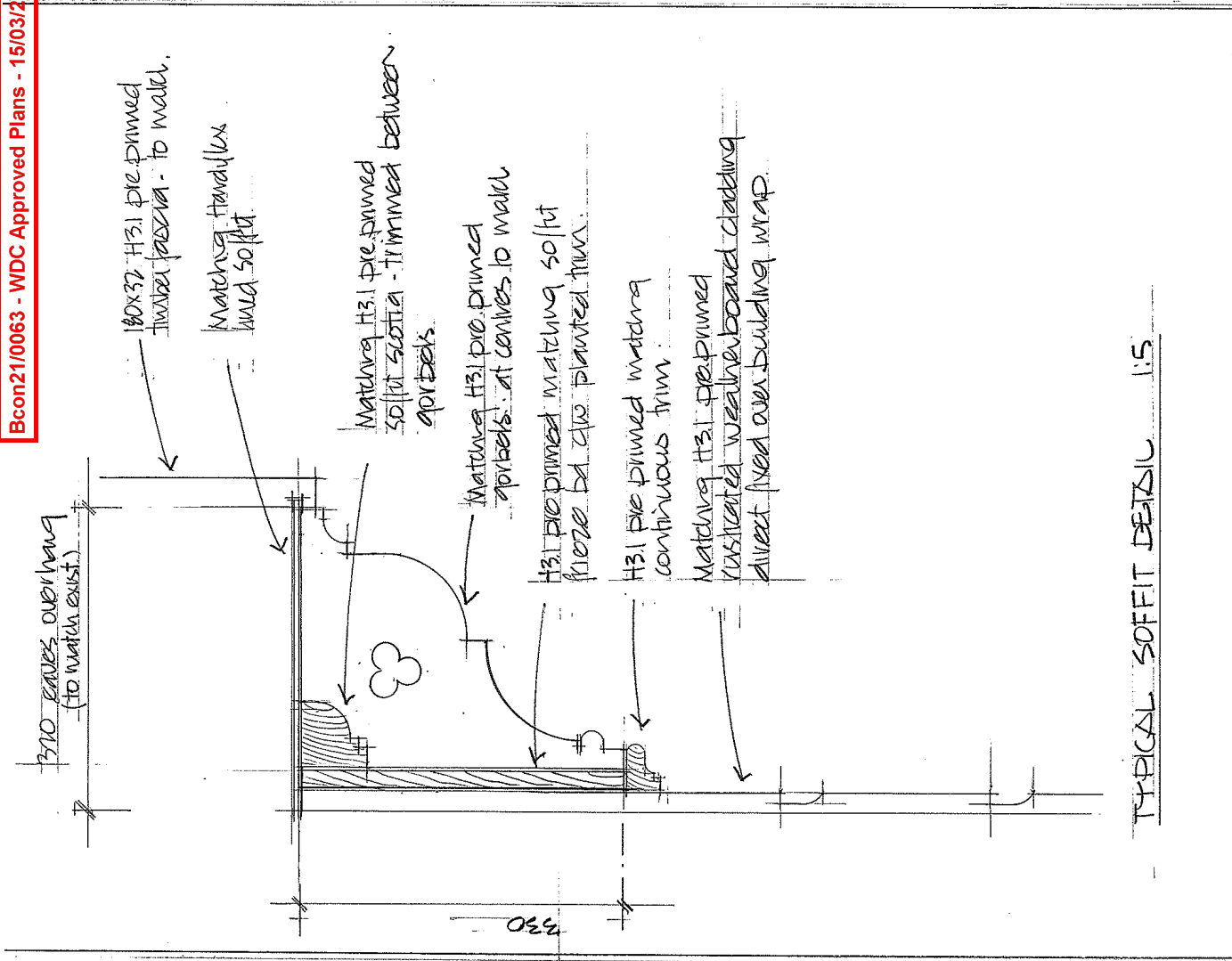
Insulate all new exterior timber framed walls (& exist where applicable) with Min. R2.2 insulation batts and ceilings with Min. R3.2 insulation batts - Insulate & fit expol (or equivalent) under floor insulation to all new sub floor areas.



CROSS-SECTION A-A 1:50

DENNY GARLAND HOUSE
31 Halswell Street, Whangarei
January 2021

Bcon21/0063 - WDC Approved Plans - 15/03/2021



TYPICAL SOFFIT DETAIL 1:5

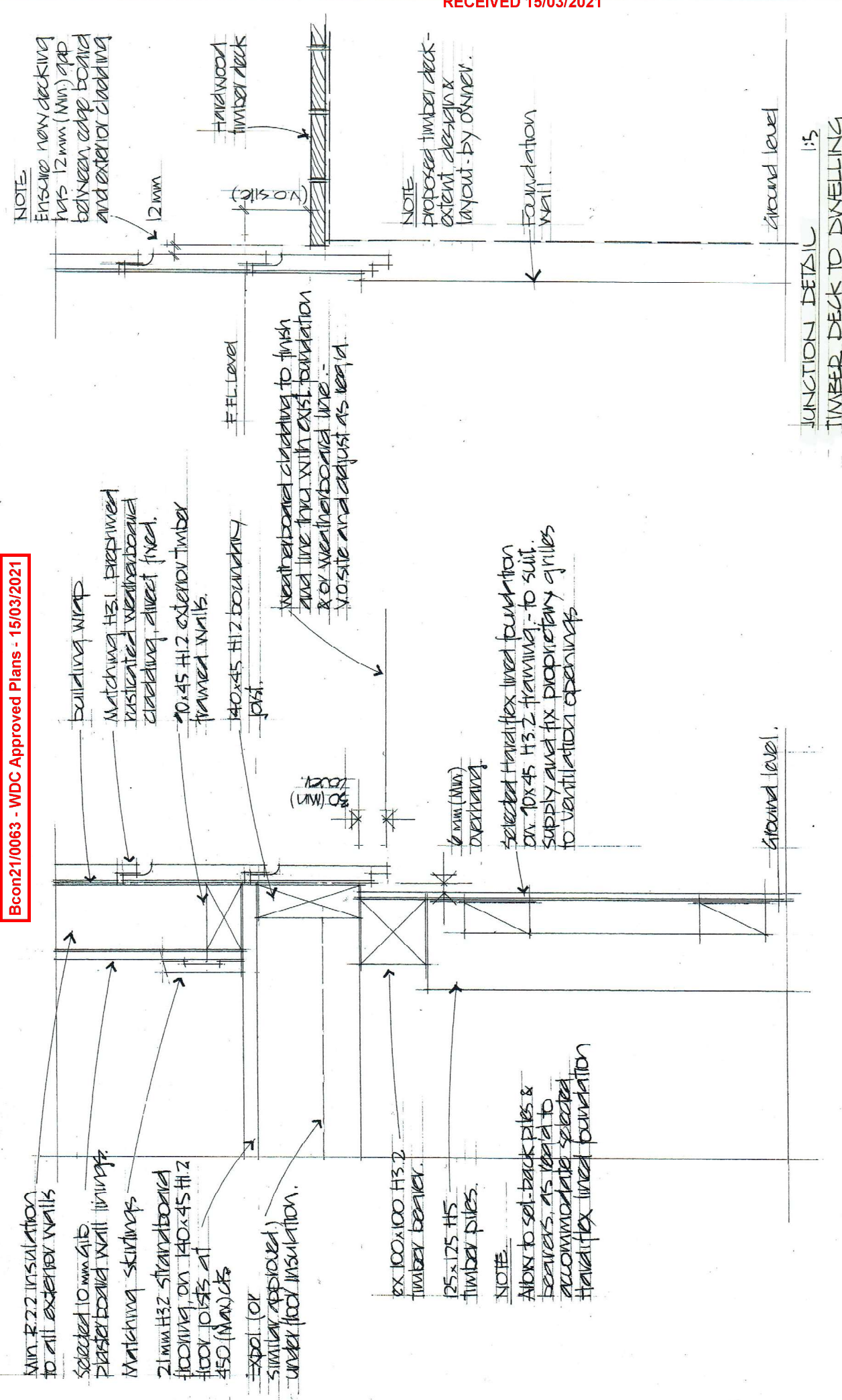
TYPICAL SOFFIT / EAVES DETAIL
 PENNY CARLAND HOUSE
 31 Halswell Street, Whangarei
 February 2021
 Dwg No 17



Note. Detail 1. Refer Cross-Section A-A
is similar.

HENRY CARLAND HOUSE
3 Halswell Street. Whangarei
— TEL. 1262

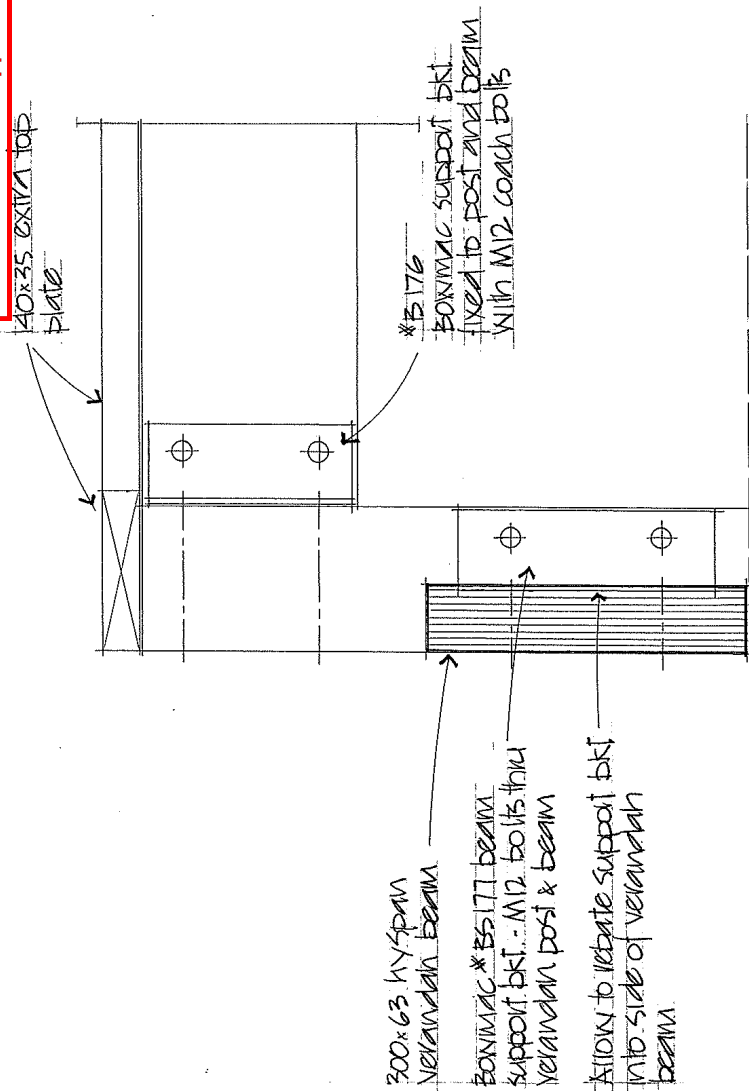
Bcon21/0063 - WDC Approved Plans - 15/03/2021



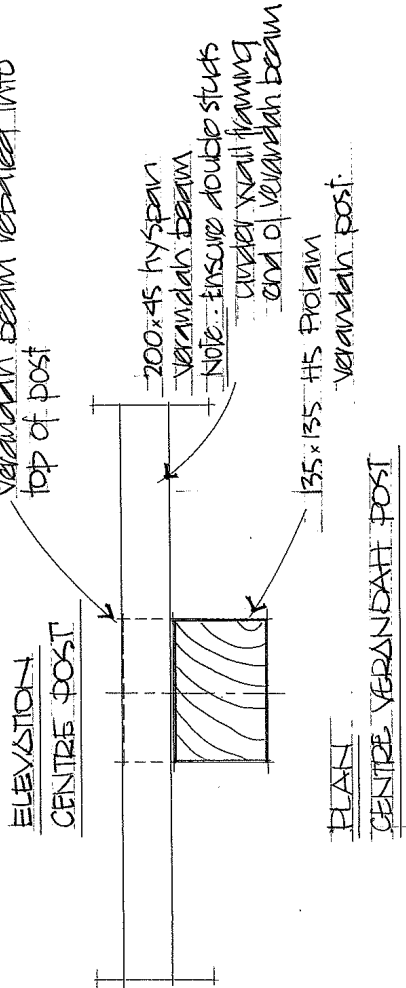
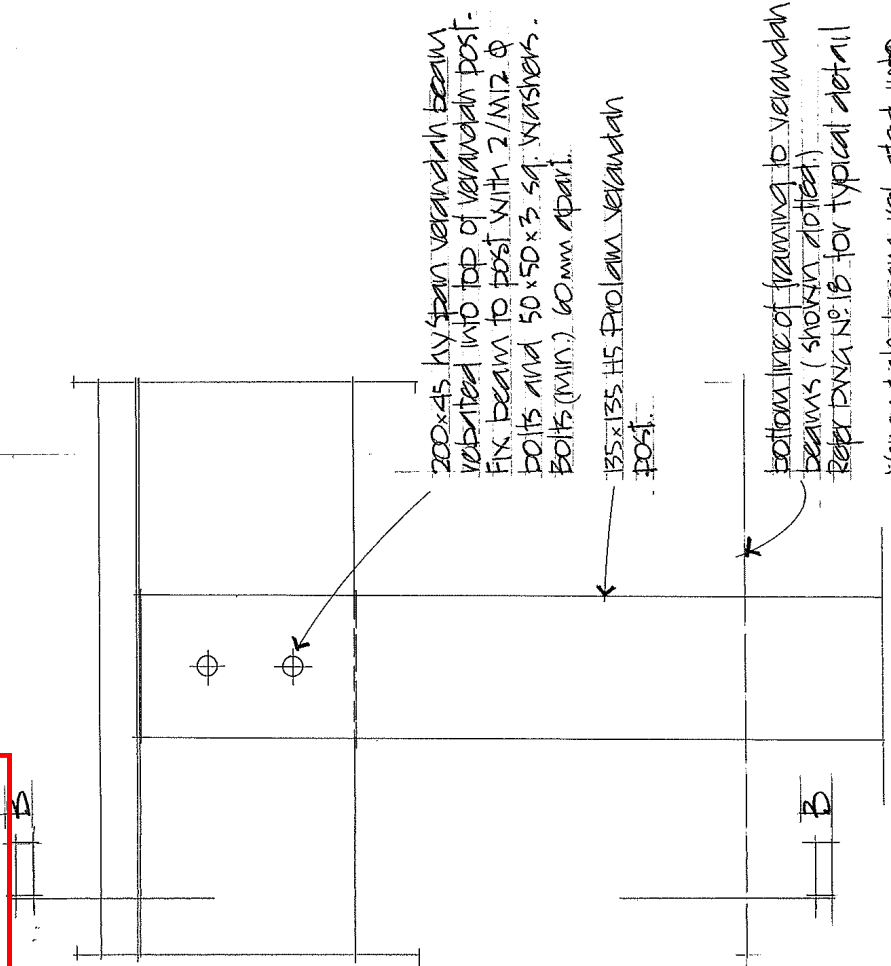
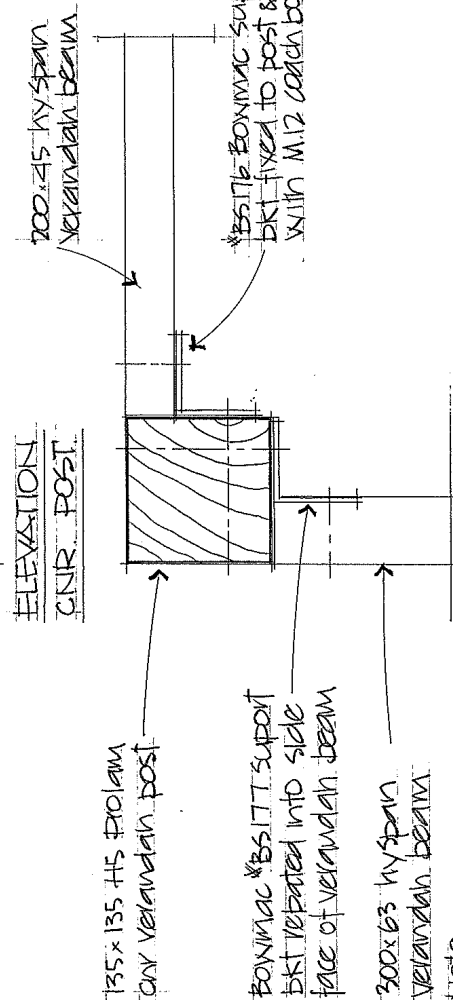
DETAIL 2
TYPICAL FOUNDATION DETAIL 1:5

JUNCTION DETAIL 1:5
TIMBER DECK TO DWELLING

PENNY GARLAND HOUSE
31 Halswell Street, Whangarei
February 2021
Dwg No 19



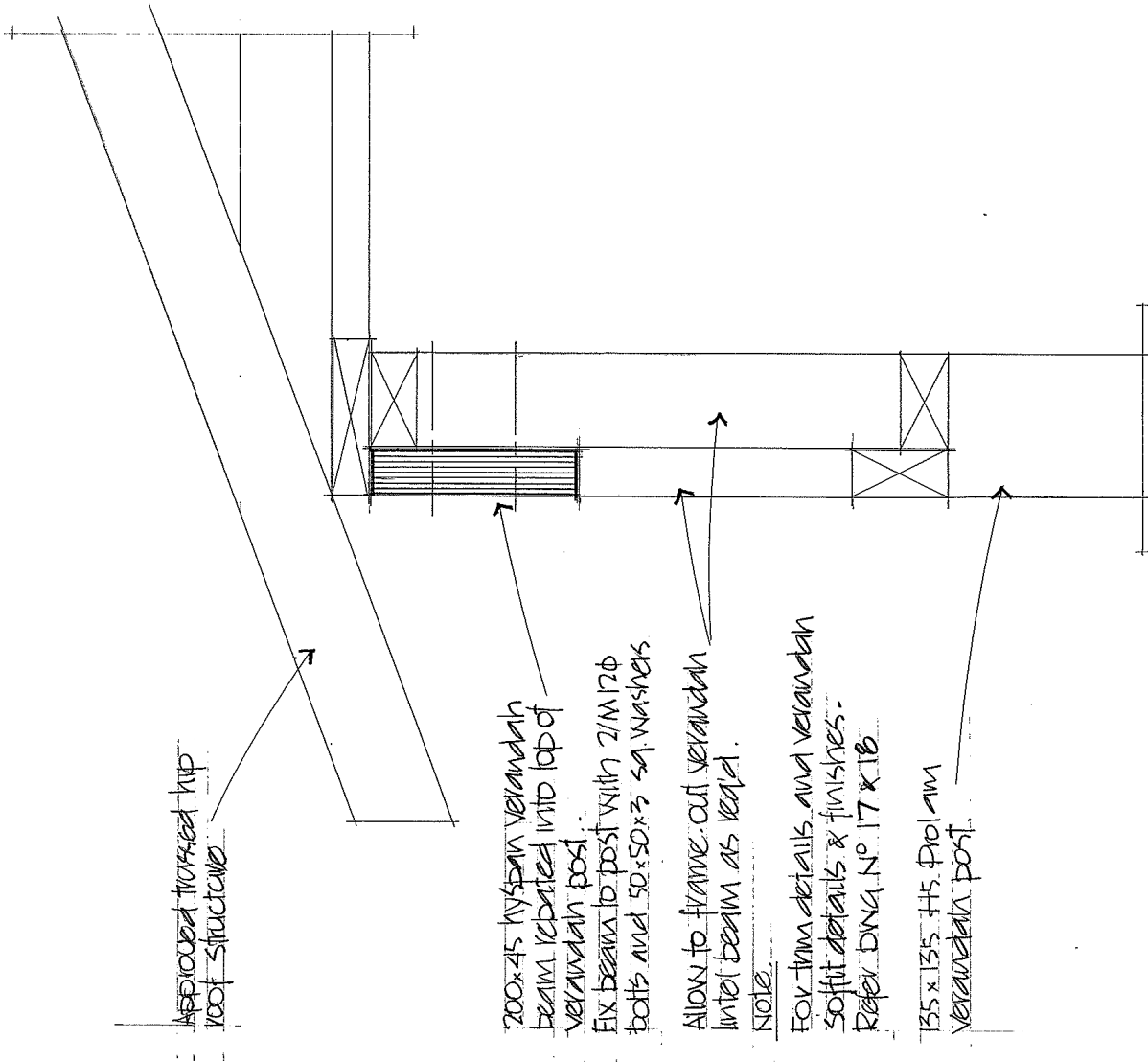
ELEVATION
CORNER POST



VERANDAH BEAM / POST CONNECTIONS 1:5

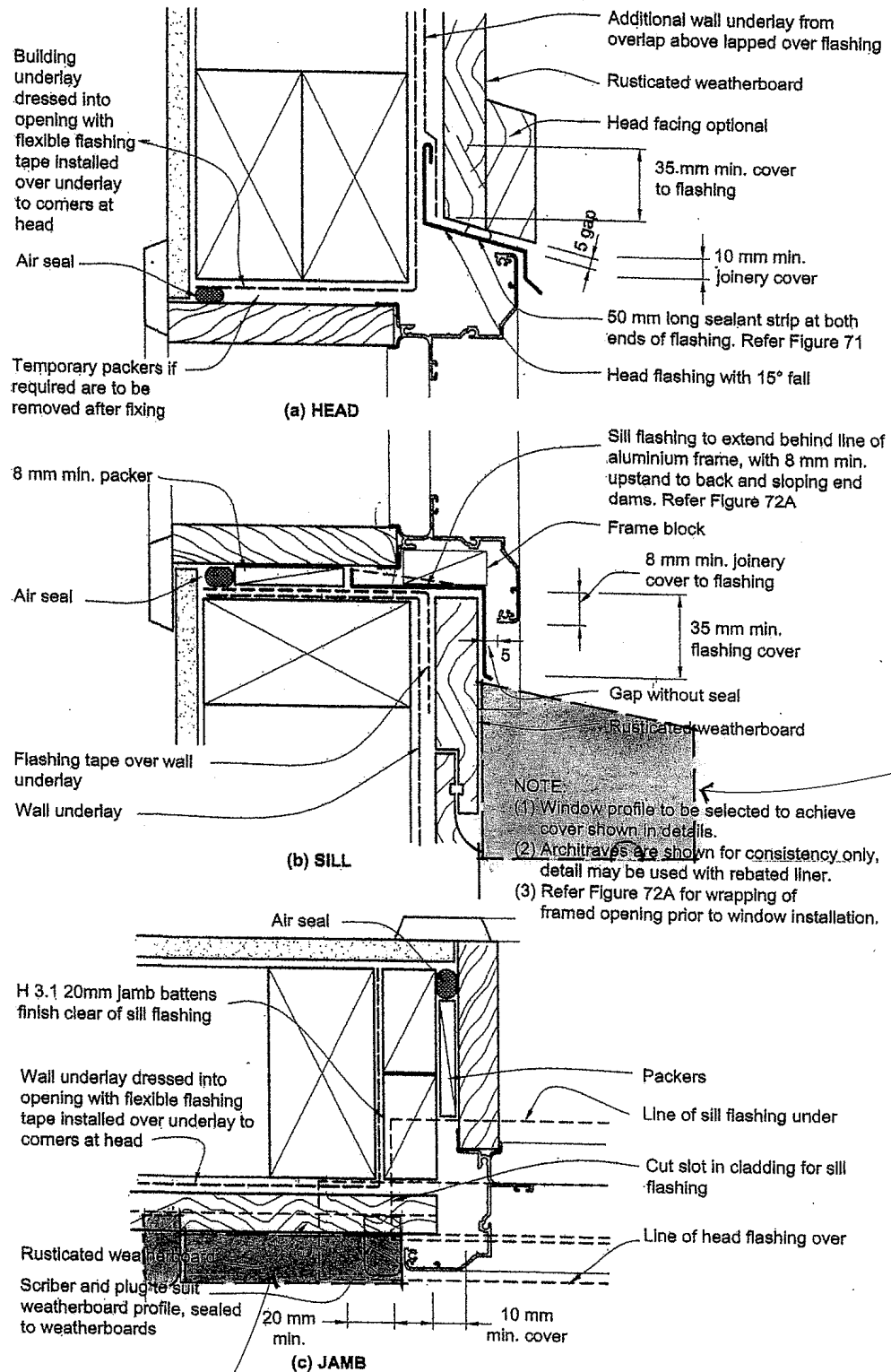
BENNY GARLAND HOUSE

31 Halswell Street, Whanganui



SECTION B-B 1:5
THRU 200x45 KYSpan VERANDAH BEAM
PENNY CARLAND HOUSE
31 Halswell Street Whangarei
February 2021

Figure 82: Windows and doors for direct fixed rusticated weatherboards
Paragraph 8.4.5



H3.1 treated & kiln dried
timber facing c/w scribe
& plug. (shaded)

AMENDED HEAD, SILL & JAMB FLASHING DETAILS
FOR DIRECT FIXED RUSTICATED WEATHERBOARDS

DENNY GARLAND HOUSE
31 Halswell Street, Whangarei
February 2021

Dwg No 22

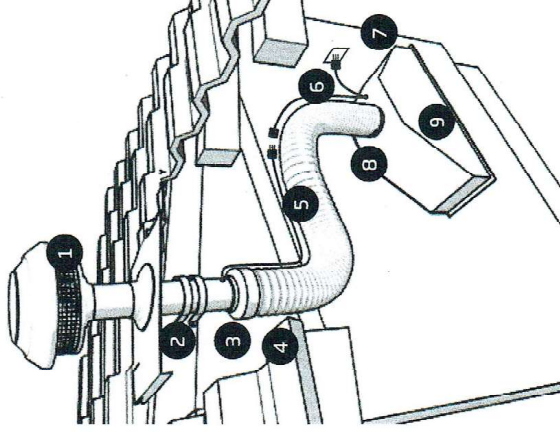
4. Installation

System Overview

1. Isodrive Motor
2. Roof Seal Kit (Dektite)*
3. Support Straps*
4. Attach Flexi Duct to Bell-Mouth Adaptor using cable tie or ring clamp. Please **DO NOT** rip the ducting.
5. Isodrive Motor Power Lead (Male Plug)
6. Rangehood to Isodrive Motor Lead (Female Plug)
7. Main Power Lead (Male Plug, 10 Amp)
8. Flexi Ducting must be pulled taut. **DO NOT** crush or kink the ducting.
9. Connect flexi ducting to the outlet on rangehood using cable tie or ring clamp. Please **DO NOT** rip the ducting.

***NOTE:** The Isodrive motor system does not include the roof seal kit, cable ties, ring clamp or the support straps.

NOTE: The general power outlet for the rangehood should be located in an easy to access area.



Pictures are for illustrative purposes only, not to scale.

A DANGER

All electrical wiring from the motor to the rangehood should be kept inside the roof space.

NOTE.

Dektite flashing and cobrsteel back flashing is to be supplied & fitted by plumber/roofer.

10 CM POWER BACK RANGEHOOD
MODEL # SCHWEIGN UM 1170-9 SP

SPECIFICATION

Of work shown on the accompanying drawings

GARLAND HOUSE

Proposed Addition & Alterations to Existing Dwelling

31 HALSWELL STREET

WHANGANUI

PENNY GARLAND

Date: February 2021

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LIST OF CONTENTS

- **Specification**
- * **H1. 2007 Compliance Report** - **Refer Specification**
- * **Gib. Ezybrace** - **Refer Gib.Ezybrace 2011 Calcs & Drawing No. 8 Gib Fixing Details (& hold downs as req'd) for various bracing elements**
- **Risk Matrix** - **Refer External Moisture Risk Matrix**
- **Truss Design** - **Refer Roof Truss Layout DWG.No.9 & PSI Producer Statement**
- **Timber Foundation** - **Refer Floor Joists NZS 3604:table 7.1**
Refer Bearers NZS 3604:table 6.4
Refer Pile Fixing for braced Or Anchor Piles Lumberlok 12KN Detail
- **Lintel & Rough Opening Sizes** - **Refer Exterior Door & Window Lintel sizes**
- **Lintel Details & Verandah Beams** - **Refer Design It Calcs & Certificate**

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- **Lintel Fixing Schedule** - **Refer
Lumberlok Lintel
Fixing Schedule

Lumberlok Lintel
Fixing Options**
- **Stud Sizes & Spacings** - **Refer
NZS 3604:2011
Table 8.2 & 8.4**
- **External Walls
Top Plate Fixing** - **Refer
Lumberlok stud to
Top Plate Fixing
Schedule**
- **Exterior Wall Cladding
Matching H3.1 pre primed
Rusticated Weatherboards** - **Refer
E2/AS1
9.4 Timber
Weatherboards**
- **Window/Door
Weather tightness
Installation Details
(Direct Fixed Weatherboards)** - **Refer
Drawing No.22
E2/AS1 – Fig.72A
General Window &
Door opening for
Direct Fixed**
- **Roof Cladding** - **Refer
E2/AS1
8.4 Profiled metal
Roof Cladding**
- **ES/AS1 Compliance** - **Refer
E3/AS1 Fig.3
Bath,Basin,Tubs and
Sink joints against wall
Linings
E3/AS Fig.4
Moulded plastic Shower
Tray
Plus other associated
Shower, vanity,bath and
Bench top options**

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- **NZ Building Code – F.7**
 - **Refer Builders Mate-Smoke Alarms**
- Velux VSS Skylight**
 - **Refer Velux Installation Instructions & Details**

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Penny Garland
31 Halswell Street
WHANGANUI

Legal Description: Lots 24 26 BLK1
DP 936

Proposed Addition & Alterations to existing Dwelling

Extent of Work

- Allow to extend and erect on to the South wall of the existing dwelling - Approx. 15.00m² Kitchen and Laundry addition.
- To the East Wall allow to erect approx.. 5.31m² Dining Room addition.
- Allow for new Guest Bathroom between existing Master Bedroom & Bedroom 2. Refer to accompanying drawings Nos. 3,4 & 5 for details and layout.
- The builder is to remove the entire existing dwelling raftered hip Roof structure and replace it with a new trussed hip and gable roof Structure. All as detailed on the accompanying drawings.

• Floor Areas:	Existing Dwelling	170.43 m ²
	Proposed Addition	20.31 m ²
		190.74 m ²
Garage		37.20m ²
Total		227.94 m²

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General Notes

This specification shall be read in conjunction with the attached drawings.

- It is the contractor's responsibility to check all dimensions before Commencement of work.
- If the contractor requires to make any changes and/or alterations to the design or methods of construction to the building consent documents, it is their responsibility to first authorise these changes with the owner/designer and the Local City Council Building Control Officers.
- Allow and arrange to divert and extend existing electrical services to suit new layout and intent, or as directed by the owner.

Documents

Documents referred to in this section are:

- | | | | | | | | | | | |
|-------------|----------------------------------|---|--------|---------------|--------|-------------------|-------------|--------------------|--|----------------------------------|
| * | NZS 3604 | Timber framed buildings (NZS 3064:2011) | | | | | | | | |
| * | NZS 3602 | Specifying timber and wood-based products for use in building | | | | | | | | |
| * | NZS 3631 | New Zealand national timber grading rules | | | | | | | | |
| * | NZMP 3640 | Minimum requirements of the NZ Timber Preservation Council Inc. | | | | | | | | |
| * | NZ Building Code | <table border="0"> <tbody> <tr> <td>E1/AS1</td> <td>Surface Water</td> </tr> <tr> <td>E2/AS1</td> <td>External moisture</td> </tr> <tr> <td>AS/NZS 3500</td> <td>pt1 Water Services</td> </tr> <tr> <td></td> <td>Pt2 Sanitary Plumbing & Drainage</td> </tr> </tbody> </table> | E1/AS1 | Surface Water | E2/AS1 | External moisture | AS/NZS 3500 | pt1 Water Services | | Pt2 Sanitary Plumbing & Drainage |
| E1/AS1 | Surface Water | | | | | | | | | |
| E2/AS1 | External moisture | | | | | | | | | |
| AS/NZS 3500 | pt1 Water Services | | | | | | | | | |
| | Pt2 Sanitary Plumbing & Drainage | | | | | | | | | |

Specification

- All work shall be carried out under the supervision of competent and experienced tradesman in accordance with the best trade practices, and the requirements of NZS 3604:2011 and the Building Code.
- Excavations: To depths. Required. All foundations to be bearing on solid ground. Remove any soft substrate and replace with well compacted sand.
- Concrete: For sub-floor anchor piles and timber pile concrete footings. Concrete manufacture shall comply with NZS 2086 and relevant amendments for Ready Mixed Concrete Production. Concrete shall be ordinary grade as described in relevant NZ Standards having generally for foundations a minimum 28 day crushing strength of 20 Mpa.

- * Timber Foundation: Refer Foundation Plans DWG. No. 6 & 7
Builder is to set out piles, bearers and floor joists to form the foundations for the proposed addition, all as detailed and indicated.
- * Timber: Timber Framing Generally
Species, grade and level of treatment as setout in NZS 3602. Grading to NZS 3631 and treated to NZMP 3640. Mechanical Stress grading acceptable as an alternative to visual grading.
- Timber Framing Dry, Chemical Free, Mechanically stress Graded
Species, grade and moisture content in service as set out in NZS 3602. Machine stress graded to AS/NZS 1748 (from 1.12.08 – AS/NZS 1170), with an average moisture content at supply of 16% or less.
- Timber Framing Dry, Treated
Species, grade and moisture content on service as set out in NZS 3602. Treated H1 to NZMP 3640, with an average moisture content at supply of 16% or less. Either mechanically stress graded to AS/NZS 1748 or visual grading to NZS 3631.

The Timber grade, other than specified truss timbers shall be **SG.8 Grade**

All timbers to be treated

Roof Trusses	Refer truss producer statement
Purlins	H.1.2
Interior Wall Framing	H.1.2
Exterior Wall Framing	H.1.2
Floor joist	H.1.2
Bearers	H.3.2
Timber piles	H.5
Verandah Beams	Hyspan (CHH Spec)
Verandah Post	H5 prolam 135x135 posts

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- * Exterior Cladding: To all exterior timber framed walls to the proposed addition allow to fix matching H.3.1 pre primed rusticated weatherboards, direct fixed over building wrap.
External corners to be finished with matching corner boxes.
All fixed in accordance with E2/AS1 9.4 Timber weatherboards.
- Soffit Cladding: Selected James Hardies 4.5 min. soffit lining all as indicated and detailed. All to match existing.
- Roof Cladding: Arrange with an accredited roofer for the supply and installation of selected and matching zincalume .55BMT corrugated iron roof cladding, on heavy duty roofing underlay and netting complete with matching fixtures, ridge and hip flashings.

All fixed in strict accordance with E2/AS1 8.4 Profiled Metal Roof Cladding.
- Gutters: Selected Marley Spouting, All to match existing.
- * Windows: & Doors Selected double glazed aluminium windows and doors.

The configuration and layout of all new aluminium windows and doors are to be selected and advised by the owners.

The builder is to also confirm with the owners the finished sizes of all windows and doors, including finished head heights above F.F.L. Level before framing and trimming openings and the manufacturer and installation of new (and/or existing) Joinery units.

All new double glazed aluminium window and door joinery units are to be finished with matching timber facings and planted timber sill.

Details for installation of window/doors are enclosed in this Specification.

- * Glazing: As selected and to NZS.4223, parts 1 and 3.
NOTE
 The following windows and doors are to be glazed with safety glass to show compliance with NZS 4223, G2/AS1 and F2/AS1 –

- * Wall Linings: In addition to Gib Ezybrace linings as shown or indicated on bracing plan DWG No 8, all interior timber framed walls will be lined with selected 10mm Gib plasterboard, 10mm Gib. Aqualine, and or 9mm Villaboard..
 All new Gib, and or Villaboard wall linings are to be taped, stopped and finished by an accredited interior plasterer. All stopping is to be carried out in accordance with good trade practice to be smooth and even surface with all joints taped and finished smooth to a level 4 to suit paint finish.
 Ensuite and Bathroom walls are to finished, full height and or dado height, with selected ceramic wall tiles. All as directed by the owners.

- Ceiling Linings: Fixing and layout of standard 10mm or 13mm Gib. Plasterboard and or 10mm Gib. Aqualine ceilings is to comply with NZS 3604:2011 and the manufacturer's specification and details. Sheets are to be fastened and finished conventionally in accordance with 'Gib.Site Guide'. All joints shall be paper tape reinforced and stopped. It is recommended that sheet butt joints are formed off framing and back blocked (see Gib.Site Guide).
 All on 70x35mm timber battens, all at 450mm (max) cts for 10mm Gib.Lined ceilings and 600mm (max) cts for 13mm Gib. Lined ceilings.
 The builder is to be confirmed with the owner for preferred Gib.Ceiling/wall junction (finish) – either finished with selected timber/Gib.Scotia or Gib.Plastered for square edge paint finish.

NOTE:
 The re-modelled Kitchen, Dining, Ensuite and Bathroom wall and ceiling linings will require upgrading and/or replacing. The builder is to liase with the owner for instructions, details and extent of this work.

- Trim: All timber skirtings, door and window architraves are to match existing. All as directed by the owners.

- * Floor Coverings: Refer: Finishes Schedule DWG.No. 15

- * Plumbing & Drainage: General
Refer relevant drawings: Roof Plan DWG. No.10 and
Drainage Plan DWG. No.11
All to comply with AS/NZS 3500 pt1 Water Services
pt2 Sanitary Plumbing
& Drainage
E1/AS1 Surface Water

All work is to be carried out by certificated Plumber and in strict accordance with the best practice and techniques, all relevant and current NZ standards, Local Authority By-Laws and Public Health Regulations.

The following Ensuite/Bathroom/Laundry & Kitchen fixtures And fittings will be supplied by the OWNER, and are to be Installed by the plumber and/or Builder.

Selected proprietary shower cubicle 900x1200
Selected slide shower and mixer x 1
Selected vanity unit c/w, tapware x 1
Selected wall-faced toilet suite x 1
Selected heated towel rails x 1
Selected towel rails x 1
Vanity Mirror x 1
Selected kitchen Sink Mixer x 1

NOTE:

The builder is to supply and fixture noggins and dwangs as necessary for all Bathroom & Ensuite fixtures and fittings.

- * Electrical: All to comply with the Electrical Regulations 1997.
AS/NZS3000 and the New Zealand Codes of Practice.
- Electrical lighting, switch and socket layout as directed by Owners.

Compliance with H1. Energy Efficiency code

Addition & Alterations to existing Residential Dwelling
31 Halswell Streeedt, Whanganui

We have specified and detailed in the enclosed drawings and specification:

- (a) To insulate all new and existing timber framed walls where applicable with (min) R.2.2 insulation batts.

Note:

These are minimum insulation levels and can be upgraded as directed by Owner.

- (b) Also, the builder is to allow to insulation any internal walls with noise Control batts as directed by the owner.
- (c) The new trussed hip and gable roof structure over the proposed additions is to be insulated with (min) R.3.2 skillion insulation batts.

Note:

These are minimum insulation levels and can be upgraded as directed by the owner.

- (d) The new timber sub floor areas to the proposed additions is to be fitted and insulated with Expol (or similar approved) insulation.
- (e) All new aluminium windows & doors are to be double glazed.

We Note:

The proposed additions – approx.. 20.31m²
is adding approximately and additional 12% of footprint to the existing dwelling.
This addition, as noted above is going to be code compliant insulated –
Ceiling, walls and sub floor – with double glazed new aluminium window and door
Joinery units.

We would ask you to note that the existing dwelling is of standard timber frame construction with rusticated weatherboard cladding, direct fixed with a corrugated iron roof – with minimal insulation to all exterior walls and minimal underfloor insulation to the sub floor area.

The existing ceiling areas has minimal insulation.

All existing exterior timber window & door joinery units are all single glazed.

We therefore believe the insulation specified and detailed in the proposed addition and alterations more than meet the minimum levels set-out in the H.1 Energy Efficiency Code, and we therefore ask Council to approve our detailed and specified Insulation levels.

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Top plate connections

For top plate connections refer to NZS3604:2011 section 8.7.3.

Parapets and gable end walls

Bracing elements must be fixed from top plate to bottom plate. Fixing to a row of nogs is not acceptable unless either:

A continuous member such as an ex 90 x 45mm ribbon plate is fixed across the studs just above a row of nogs at the ceiling line, as shown in figure 16.

or

GIBFix® Angle as shown in figure 17. The angle is fixed to a row of nogs with 30 x 2.5mm galv flat head nails or 32mm x 7g GIB® Grabber® Dual Thread Screws at 300mm centres.

Bottom plate fixing

TIMBER FLOOR

For elements with an 'N' specification use 2/100 x 3.75mm hand or 3/90 x 3.15mm power-driven nails at 600mm centres.

In addition, for elements with an 'H' specification, use GIB HandiBrac® panel hold-down fixings at each end of the bracing element, see p.16.

CONCRETE FLOOR – EXTERNAL WALL BRACING ELEMENTS

For bracing elements with an 'N' specification fix external wall plates in accordance with NZS 3604:2011.

Use GIB HandiBrac® panel hold-down fixings at each end of bracing elements with an 'H' specification and minimum intermediate fixings as required by NZS 3604:2011.

CONCRETE FLOOR – INTERNAL WALL BRACING ELEMENTS

For bracing elements with an 'N' specification fix plates in accordance with NZS 3604:2011 or use 75 x 3.8mm shot-fired fasteners with 16mm discs spaced at 150 and 300mm from end-studs and 600mm centres thereafter.

For bracing elements with an 'H' specification use GIB HandiBrac® panel hold-down fixings at each end of the element and minimum intermediate fixings as required by NZS 3604:2011.

FIGURE 16: PARAPETS AND GABLE ENDS WITH RIBBON PLATE

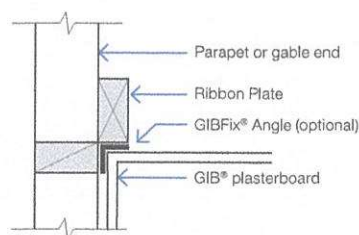
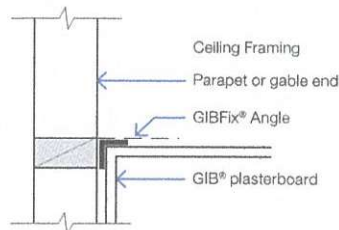


FIGURE 17: PARAPETS AND GABLE ENDS WITH GIBFIX® ANGLE



GFS003

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BOTTOM PLATE FIXINGS FOR GIB® BRACING ELEMENTS

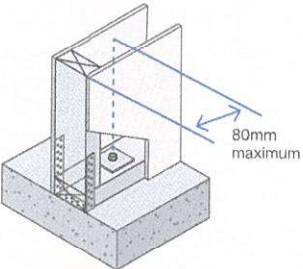
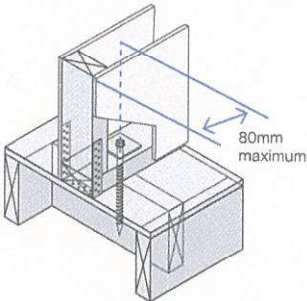
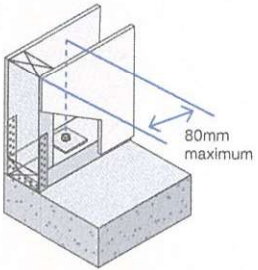
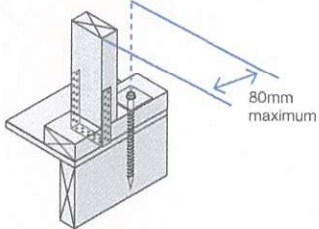
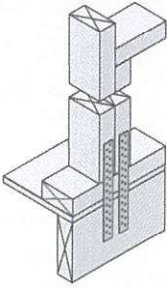
Brace type	Concrete slabs		Timber floors
	External wall	Internal wall	External and Internal walls
GS1-N	As per NZS 3604:2011. No specific additional fastening required.	As per NZS 3604:2011. Alternatively use 75 x 3.8mm shot-fired fasteners with 16mm discs, 150mm and 300mm from each end of the bracing element and at 600mm thereafter.	Pairs of 100 x 3.75mm flat head hand driven nails or 3/90 x 3.15mm power driven nails at 600mm centres in accordance with NZS 3604:2011.
GS2-N	Not applicable.		
GS2-NOM			
GSP-H BL1-H BLP-H	Intermediate fastenings to comply with NZS 3604:2011 In addition: GIB HandiBrac® fixings or metal wrap-around strap fixings and bolt as illustrated on p.15 and 16.		Pairs of 100 x 3.75mm flat head hand driven nails or 3/90 x 3.15mm power driven nails at 600mm centres in accordance with NZS 3604:2011. In addition: GIB HandiBrac® fixings or metal wrap-around strap fixings and bolt as illustrated on p.15 and 16.
BLG-H	Not applicable	As for GSP-H, BL1-H, BLP-H on concrete slab as illustrated on p.15 and 16.	



Bracing strap installation

Care needs to be taken with the installation of the bracing strap. It should be checked in to be flush with the face of the stud providing a flat substrate for the plasterboard and

positioned in such a way that the corner fastenings of the bracing element are not affected by it. Keeping the strap to the edge of the end stud as shown will allow the corner fastenings to be installed without having to penetrate the bracing strap.

Concrete floor	Timber floor
400 x 25 x 0.9mm galvanised strap to pass under the plate and up the other side of the stud. Six 30 x 2.5mm flat head galvanised nails to each side of the stud. Three 30 x 2.5mm flat head galvanised nails to each side of the plate. Hold down bolt with 50 x 50 x 3mm washer to be fitted within 80mm of the end of the element.	
Internal wall	
 GEB004	 GEB005
External wall	
 GEB006	 GEB007
Note: Where applicable drawings have been produced for CAD design. These are identified by a unique number in the bottom corner of each detail box that can be found at gib.co.nz/library.	
2/300 x 25 x 0.9mm galvanised straps with six 30 x 2.5mm flat head galvanised nails to each stud and into the floor joist and three nails to the plate. Block to nog fixed with 3/100 x 3.75mm nails to stud.	
 GEB008	
Hold-down fastener requirements	
Concrete floor	Timber floor
A mechanical fastening with a minimum characteristic uplift capacity of 15kN fitted with a 50 x 50 x 3mm square washer within 80mm of the ends of the bracing element.	12 x 150mm galvanised coach screw fitted with a 50 x 50 x 3mm square washer within 80mm of the ends of the bracing element

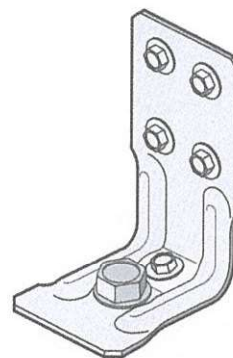


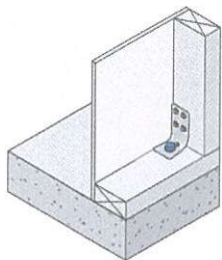
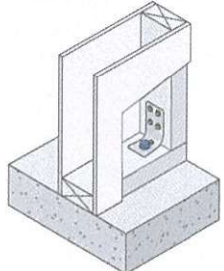
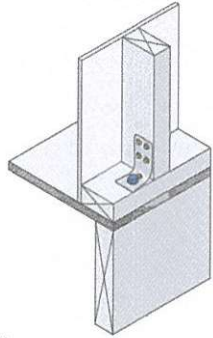
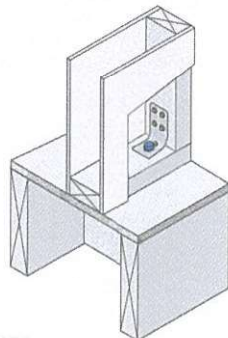
GIB HandiBrac® installation

Developed in conjunction with MiTek™, the GIB HandiBrac® has been designed and tested by Winstone Wallboards for use in GIB EzyBrace® elements that require hold-downs. The GIB HandiBrac® is a substitute for bottom plate hold-down straps.

- Quick and easy to fit.
- May be fitted at any stage before lining.
- Framing face is clear to allow flush lining.
- Easily inspected.

The GIB HandiBrac® with BOWMAC® blue head screw bolt is suitable for timber and concrete floors constructed in accordance with NZS 3604:2011.



Concrete floor		Timber floor	
External walls	Internal walls	External walls	Internal walls
 GEB009	 GEB010	 GEB011	 GEB012
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate.	Position GIB HandiBrac® at the stud/plate junction and at mid-width of plate.	Position GIB HandiBrac® flush with the outside stud face, as close as practicable to the centre of the boundary joist.	Position GIB HandiBrac® in the centre of floor joist or full depth solid block.
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.		12 x 150mm galvanised coach screw or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.	



GIB HandiBrac® placement with GIBFix® Framing System for concrete floors

Figure 18 shows the preferred positioning of the GIB HandiBrac® panel hold-down brackets within the GIBFix® Framing System layout and where they are required by bracing systems with an 'H' in the specification code.

Note that, in corners and at wall junctions, a single GIB HandiBrac® can serve 'H' type bracing elements in both directions, but additional intermediate concrete anchors may need to be installed to meet the minimum requirements of NZS 3604:2011 for bottom plate fixing.

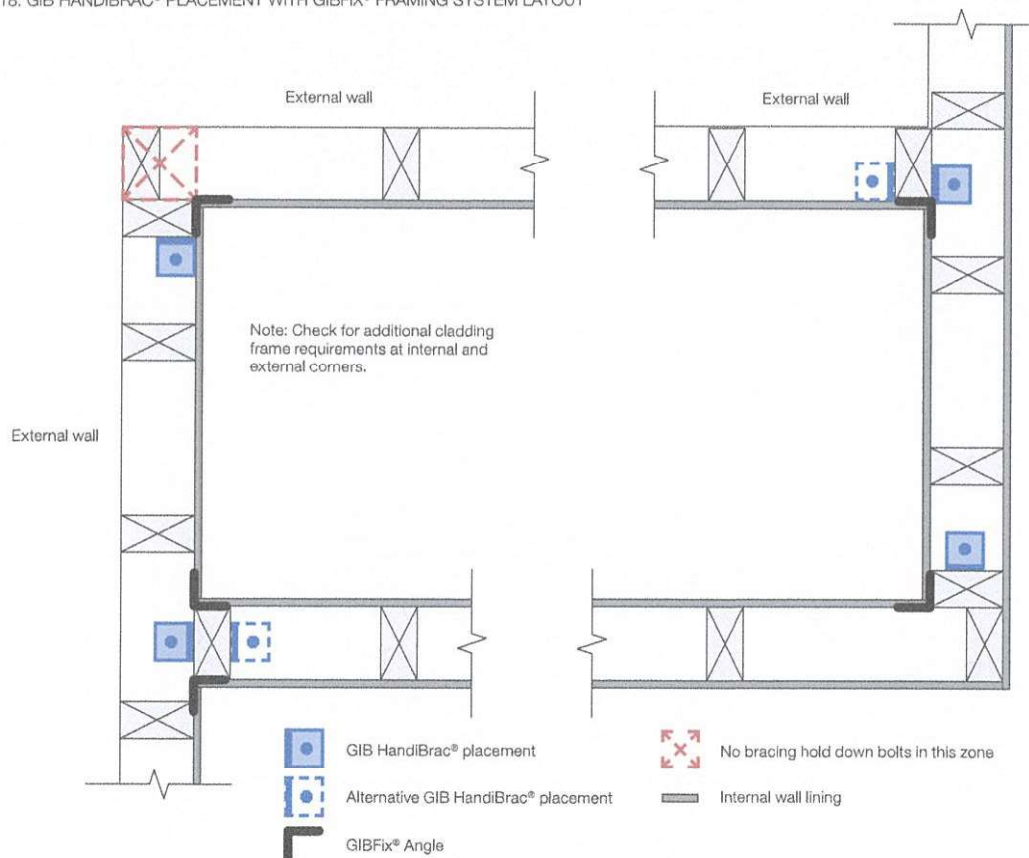
The GIB HandiBrac® is fixed to the stud which has the GIBFix® Angle.

For bracing elements with sheet material both sides of the wall connect corner studs using 8/90mm gun nails as shown in figure 19.

TIMBER FLOORS

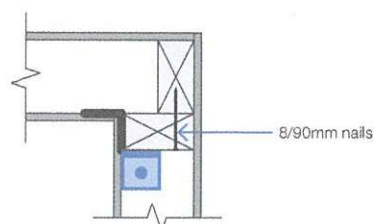
For timber floors bolt fixing in to solid joist or block is required, as shown on p 15.

FIGURE 18: GIB HANDIBRAC® PLACEMENT WITH GIBFIX® FRAMING SYSTEM LAYOUT



GEB013

FIGURE 19: STUD CONNECTION FOR 'H' TYPE BRACING ELEMENTS WITH SHEET MATERIAL BOTH SIDES



GEB014



Length of GIB EzyBrace® elements ('N' Type)

The length of GIB EzyBrace® elements with an 'N' extension (requiring standard NZS3604:2011 plate connections) can be taken as the full frame length measured from the outside of the end-stud to the opening face as illustrated in figures 29-32.

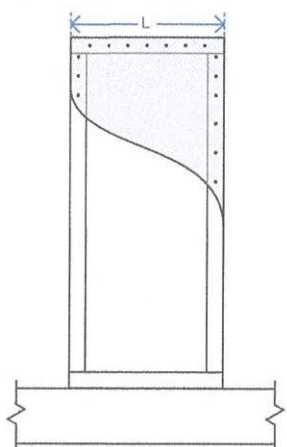
'N' type GIB EzyBrace® elements are identified by GIB® specification numbers GS1-N, GS2-N and GS2-NOM

The dimension 'L' shall not be less than 400mm.

Perimeter bracing fixing for linings of both 'H' and 'N' type elements is along the top and bottom plates, end stud, and doubling stud immediately adjacent to the opening.

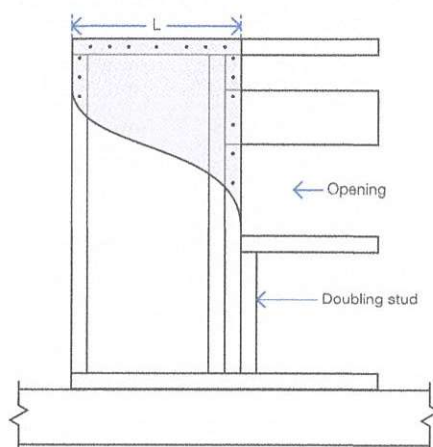
Fastener spacings and diagram scales shown in Figures 29-32 are indicative only. Refer to p.23-30 for construction details.

FIGURE 29: GS BRACING ELEMENTS (OPTION A)



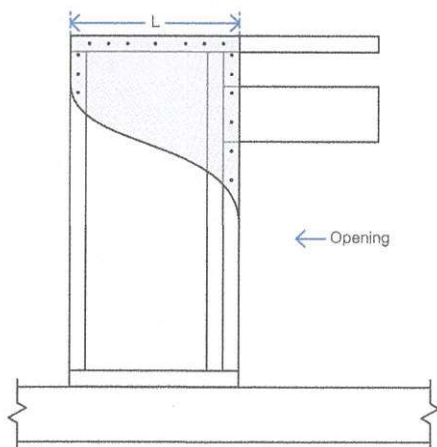
GS1-N, GS2-N elements
'L' indicates the length of the bracing element

FIGURE 30: GS BRACING ELEMENTS (OPTION B)



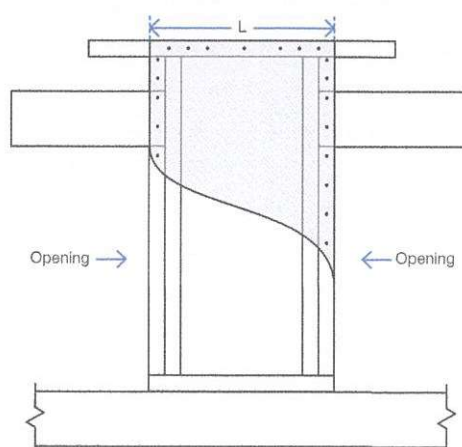
GS1-N, GS2-N elements
'L' indicates the length of the bracing element

FIGURE 31: GS BRACING ELEMENTS (OPTION C)



GS1-N, GS2-N elements
'L' indicates the length of the bracing element

FIGURE 32: GS BRACING ELEMENTS (OPTION D)



GS1-N, GS2-N elements
'L' indicates the length of the bracing element



Length of GIB EzyBrace® elements ('H' Type)

GIB EzyBrace® elements with an 'H' extension (requiring special panel hold-down fixings) can be used when the dimension 'L' as illustrated in figures 33–36 is 400mm or more.

'H' type GIB EzyBrace® elements are identified by GIB® specification numbers GSP-H, BL1-H, BLG-H and BLP-H.

The length of an 'H' type element is not only determined by the sheet material, but also by the placement of the hold-down fixings.

Hold-down fixings cannot be placed closer together than what is shown for the standard panel in figure 33.

Hold-down fixings can be placed under windows provided sill trimming studs beneath the opening are connected to the bracing element using 8/90mm gun nails, as illustrated in figure 34.

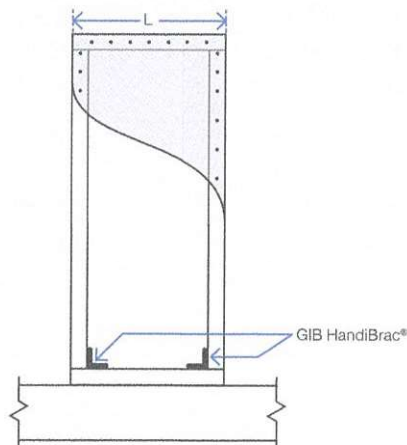
Spike doubling stud to trimming stud using a minimum of 2/90mm gun nails at 600mm centres. Lintel straps (where required for wind uplift) should be checked in and be located away from the bracing element fasteners.

Perimeter bracing fixing for linings of both 'H' and 'N' type elements is along the top and bottom plates, end stud, and doubling stud immediately adjacent to the opening as indicated in figures 34-36.

When using bracing straps, installed in accordance with p.17, fix the strap to the same framing member as shown for the GIB HandiBrac® below, and install the adjacent anchor bolt in the same position as the GIB HandiBrac® bolt.

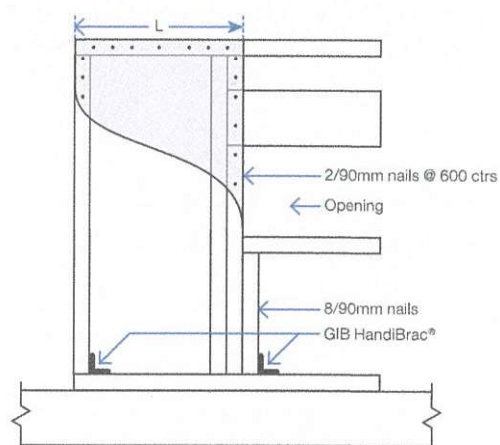
Fastener spacings and diagram scales shown in figures 33–36 are indicative only. Refer to p.23–30 for construction details.

FIGURE 33: BL BRACING ELEMENTS (OPTION A)



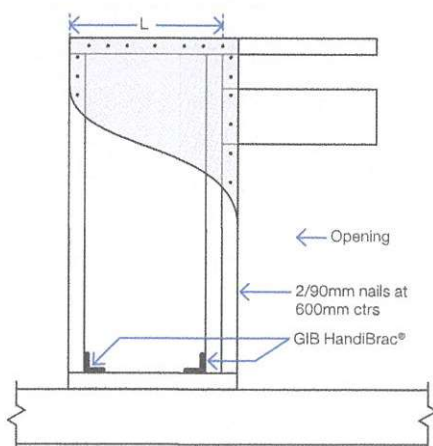
'H' type elements with specific hold downs
'L' indicates the length of the bracing element

FIGURE 34: BL BRACING ELEMENTS (OPTION B)



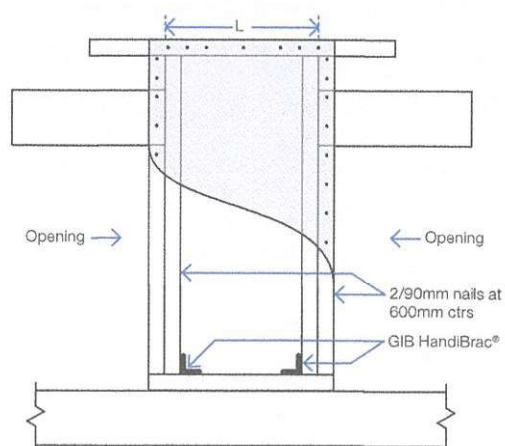
'H' type elements with specific hold downs
'L' indicates the length of the bracing element

FIGURE 35: BL BRACING ELEMENTS (OPTION C)



'H' type elements with specific hold downs
'L' indicates the length of the bracing element

FIGURE 36: BL BRACING ELEMENTS (OPTION D)



'H' type elements with specific hold downs
'L' indicates the length of the bracing element



GIB EzyBrace® Systems specification GS1-N

Specification code	Minimum length (m)	Lining requirement
GS1-N	0.4	Any 10mm or 13mm GIB® Standard plasterboard to one side only

WALL FRAMING

Wall framing to comply with;

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor

Internal Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and 600mm centres thereafter.

External Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for external wall bottom plate fixing.

WALL LINING

- Any 10mm or 13mm GIB® plasterboard lining.
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES

For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING

Fasteners

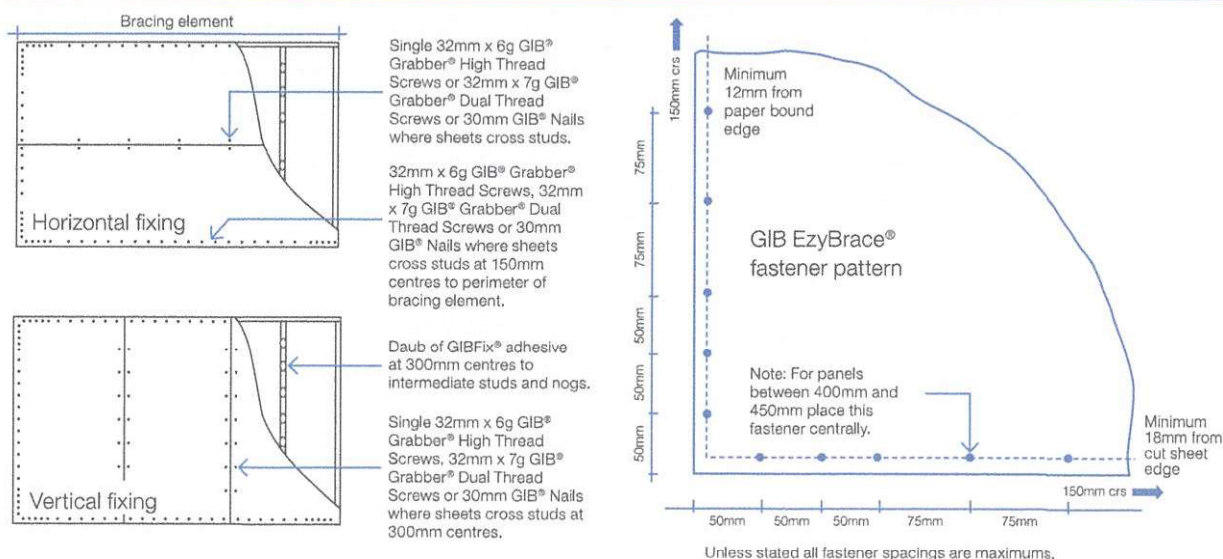
32mm x 6g GIB® Grabber® High Thread Screws, 32mm x 7g GIB® Grabber® Dual Thread Screws or 30mm GIB® Nails. If using the GIBFix® Angle use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres

50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to intermediate sheet joints. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING

Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems



GIB EzyBrace® Systems specification GS2-N

Specification code	Minimum length (m)	Lining requirement
GS2-N	0.4	Any 10mm or 13mm GIB® Standard plasterboard fixed to each side of the wall framing

WALL FRAMING

Wall framing to comply with;

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber Floor

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor

Internal Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and then 600mm centres thereafter.

WALL LINING

- A layer of 10mm or 13mm GIB® plasterboard to each side of the wall.
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES

For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING

Fasteners

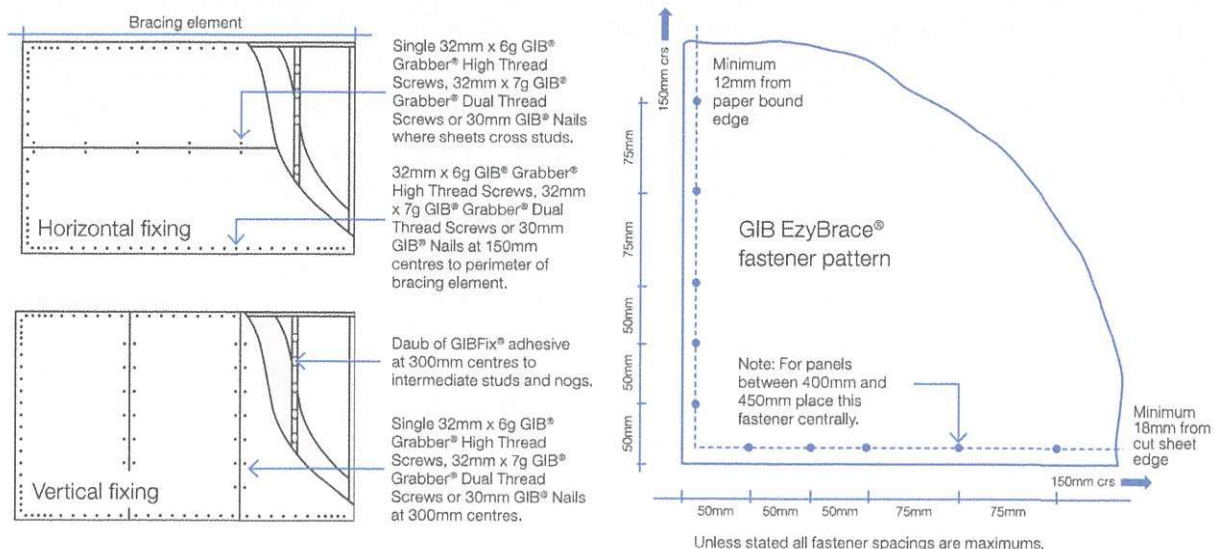
32mm x 6g GIB® Grabber® High Thread Screws, 32mm x 7g GIB® Grabber® Dual Thread Screws or 30mm GIB® Nails. If using the GIBFix® Angle use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres

50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to intermediate sheet joints. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING

Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems



GIB EzyBrace® Systems specification BL1-H

Specification code	Minimum length (m)	Lining requirement	Other requirements
BL1-H	0.4	10mm or 13mm GIB Braceline® to one side only	Hold downs

WALL FRAMING

Wall framing to comply with;

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor

Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide.

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or Three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor

Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of NZS 3604:2011.

WALL LINING

- A layer of 10mm or 13mm GIB Braceline®
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES

For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING

Fasteners

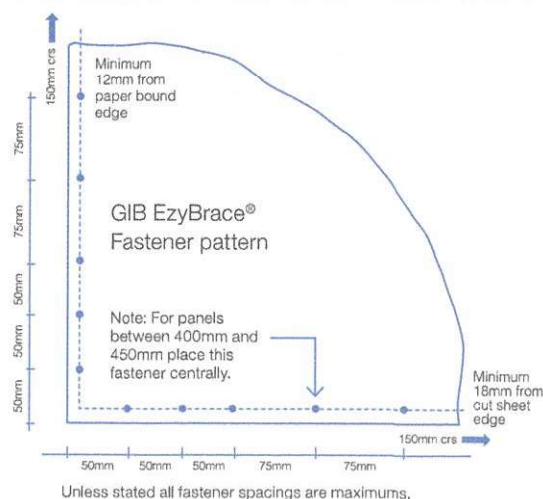
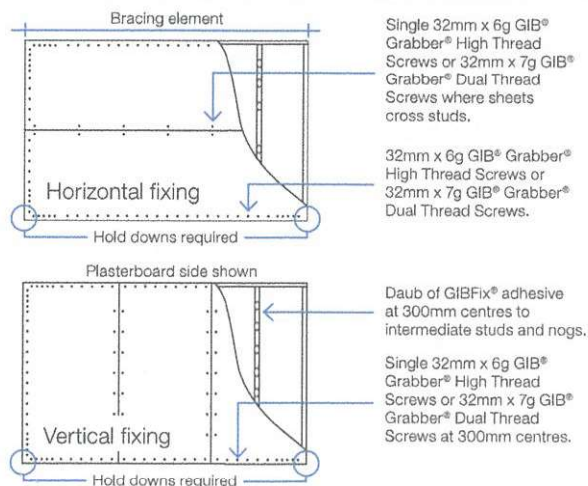
32mm x 6g GIB® Grabber® High Thread Screws or 32mm x 7g GIB® Grabber® Dual Thread Screws. If using the GIBFix® Framing System or if fastening through GIBFix® Angles use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres

50,100,150, 225, 300mm from maximum each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to the sheet joint. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING

Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems



GIB HANDIBRAC® OVERVIEW

COMPONENTS

GIB HandiBrac® is available in boxes of 10, each containing 5 pairs.

Components per paired pack include:

- 2 x GIB HandiBrac® Brackets
- 10 x Tek Screws
- 2 x BOWMAC® screw bolts included within specific GIB HandiBrac® pack

GIB® BRACING ELEMENTS

The GIB HandiBrac® is a proprietary product that has been tested and is suitable for use with specified GIB EzyBrace® Systems.

FIXING TO TIMBER FRAMED FLOORS

BOWMAC® screw bolt to achieve a characteristic uplift strength of 12kN.

FIXING TO CONCRETE SLABS

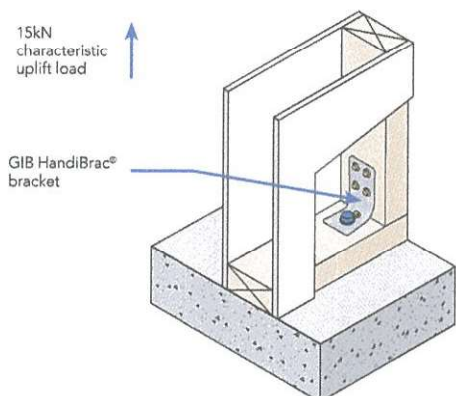
BOWMAC® screw bolt to achieve a characteristic uplift strength of 15kN



PANEL HOLD-DOWN DETAILS

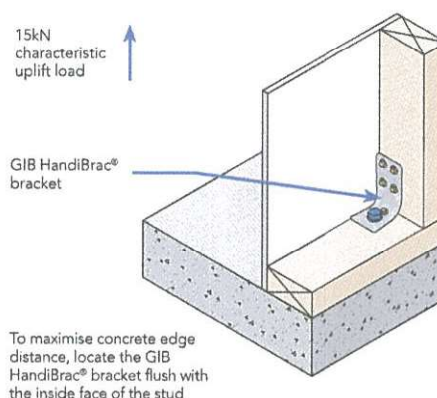
CONCRETE FLOOR – INTERNAL WALL

The bottom plate at both ends of the bracing element is fixed using a BOWMAC® screw bolt. For BOWMAC® screw bolt installation see instructions on next page



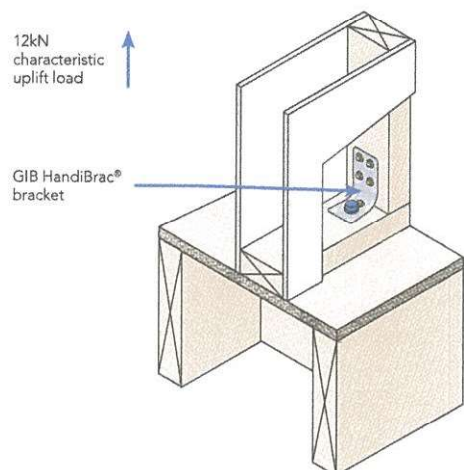
CONCRETE FLOOR – EXTERNAL WALL

The bottom plate at both ends of the bracing element is fixed using a BOWMAC® screw bolt. For BOWMAC® screw bolt installation see instructions on next page.



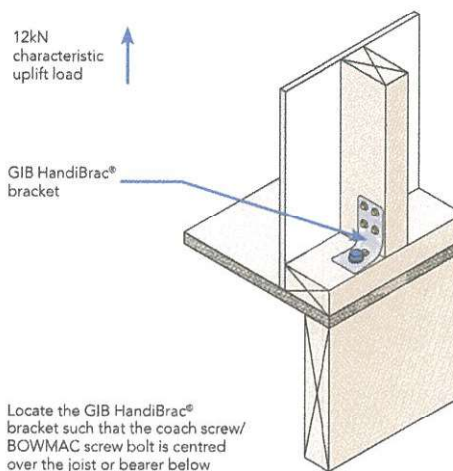
TIMBER FLOOR – INTERNAL WALL

Bottom Plate is fixed using a BOWMAC® screw bolt. For BOWMAC® screw bolt installation see instructions on next page.



TIMBER FLOOR – EXTERNAL WALL

Bottom Plate is fixed using a BOWMAC® screw bolt. For BOWMAC® screw bolt installation see instructions on next page.



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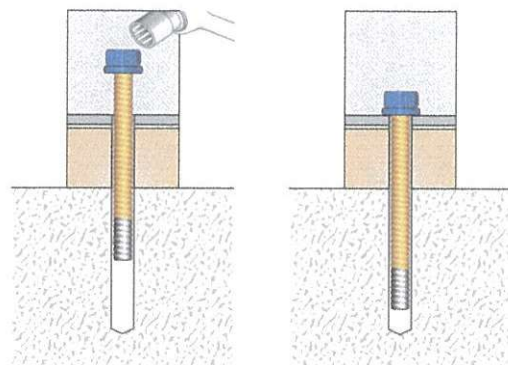
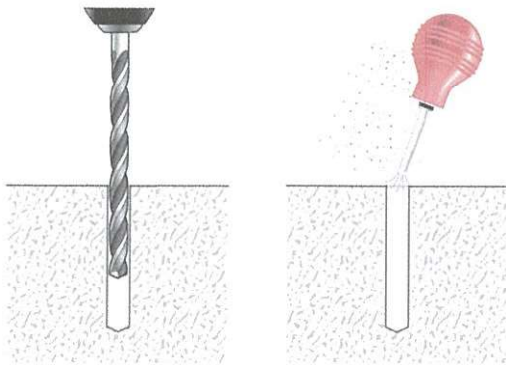


INSTALLATION OF GIB HANDIBRAC® BRACKET

1. Install the screw located in the bracket base
2. Install the BOWMAC® screw bolt as per instructions below
3. Install remaining four screws into the face of the timber stud

Installation Tips

- Use quality hexagonal socket with a ratchet spanner
- During installation debris or dust created by the thread cutting action may cause some resistance to be experienced. This is easily overcome by unscrewing the BOWMAC® screw bolt for one turn or more and then continuing to fix to the full embedment.



PREPARATION

- Use a 10mm diameter masonry bit for a solid concrete substrate and an 8mm diameter bit for fixing to a timber sub-floor.
- Drill a hole into the base material to depth 8 mm deeper than the required embedment and clean out the hole of dust and debris prior to installation of BOWMAC® screw bolt.

FIXING THE BRACKET

- Insert the bolt through the GIB HandiBrac® plate and bracket and into the hole.
- Begin tightening the bolt by applying forward pressure when engaging the first thread.
- Additional forward pressure may be required for installation in high strength, dense base materials.
- Continue tightening the anchor until the head is firmly seated against the GIB HandiBrac® base.
- In extremely dense material, use of an impact wrench is recommended.
- Be sure the bolt is at the required embedment depth.
- The installation is now complete.



GIB HANDIBRAC®

TRADEMARKS

The name GIB®, GIB HandiBrac® and the shield device are registered trademarks of Fletcher Building Holdings Limited.

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NZ Registered Design Application #420161

MANUFACTURER

GIB HandiBrac® is manufactured and distributed by MiTek New Zealand Ltd.

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SECTION 7 – FLOORS

NZS 3604:2011

Table 7.1 – Floor joists – SG 8 up to 2 kPa floor loads (see 7.1.1.1)

(a) 1.5 kPa floor load SG 8 (dry in service)			
Floor joist size	Maximum span* of joists at a maximum spacing (mm) of:		
	400	450	600
(mm x mm)	(m)	(m)	(m)
90 x 45	1.45	1.40	1.25
140 x 35	2.10	2.00	1.80
140 x 45	2.70	2.60	2.00
190 x 45	3.55	3.45	3.15
240 x 45	4.40	4.30	3.90
290 x 45	5.20	5.05	4.60

(b) 2 kPa floor load SG 8 and SG 8 (Wet) (wet in service)			
Floor joist size	Maximum span* of joists at a maximum spacing (mm) of:		
	400	450	600
(mm x mm)	(m)	(m)	(m)
90 x 45	1.60	1.50	1.30
140 x 35	2.20	2.05	1.80
140 x 45	2.50	2.35	2.05
190 x 45	3.40	3.20	2.75
240 x 45	4.30	4.05	3.50
290 x 45	5.20	4.90	4.25

* Spans may be increased by 10 % for joists continuous over 2 or more spans.

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SECTION 6 – FOUNDATION AND SUBFLOOR FRAMING

NZS 3604:2011

Table 6.4 – Bearers – SG 8 for up to 2 kPa floor loads (see 6.12.2.1)

Maximum span of bearer continuous over 2 or more spans	Loaded dimension* of bearer	Bearer size (width x thickness)
(m)	(m)	(mm x mm)
(a) 1.5 kPa floor load SG 8 (dry in service)		
1.30	1.5	90 x 70
	1.9	90 x 90
	3.6	140 x 70
	4.6	140 x 90
	6.6	190 x 70
1.65	2.2	140 x 70
	2.8	140 x 90
	4.1	190 x 70
2.00	1.5	140 x 70
	1.9	140 x 90
	2.8	190 x 70
(b) 2.0 kPa floor load SG 8 and SG 8 (Wet) (wet in service)		
1.30	1.2	90 x 90
	2.3	140 x 70
	3.0	140 x 90
	4.3	190 x 70
1.65	0.7	90 x 90
	1.4	140 x 70
	1.8	140 x 90
	2.7	190 x 70
2.00	1.2	140 x 90
	1.8	190 x 70

* For definition of loaded dimension see 1.3.

NOTE – Members 70 mm and 90 mm thick may be substituted with built-up members sized and nailed in accordance with 2.4.4.7.

6.12.5 Crook (Round)*Bearers shall be laid so that any crook in them will straighten under load.***6.12.6 Landing***Bearers shall have a minimum landing on their supports of:*

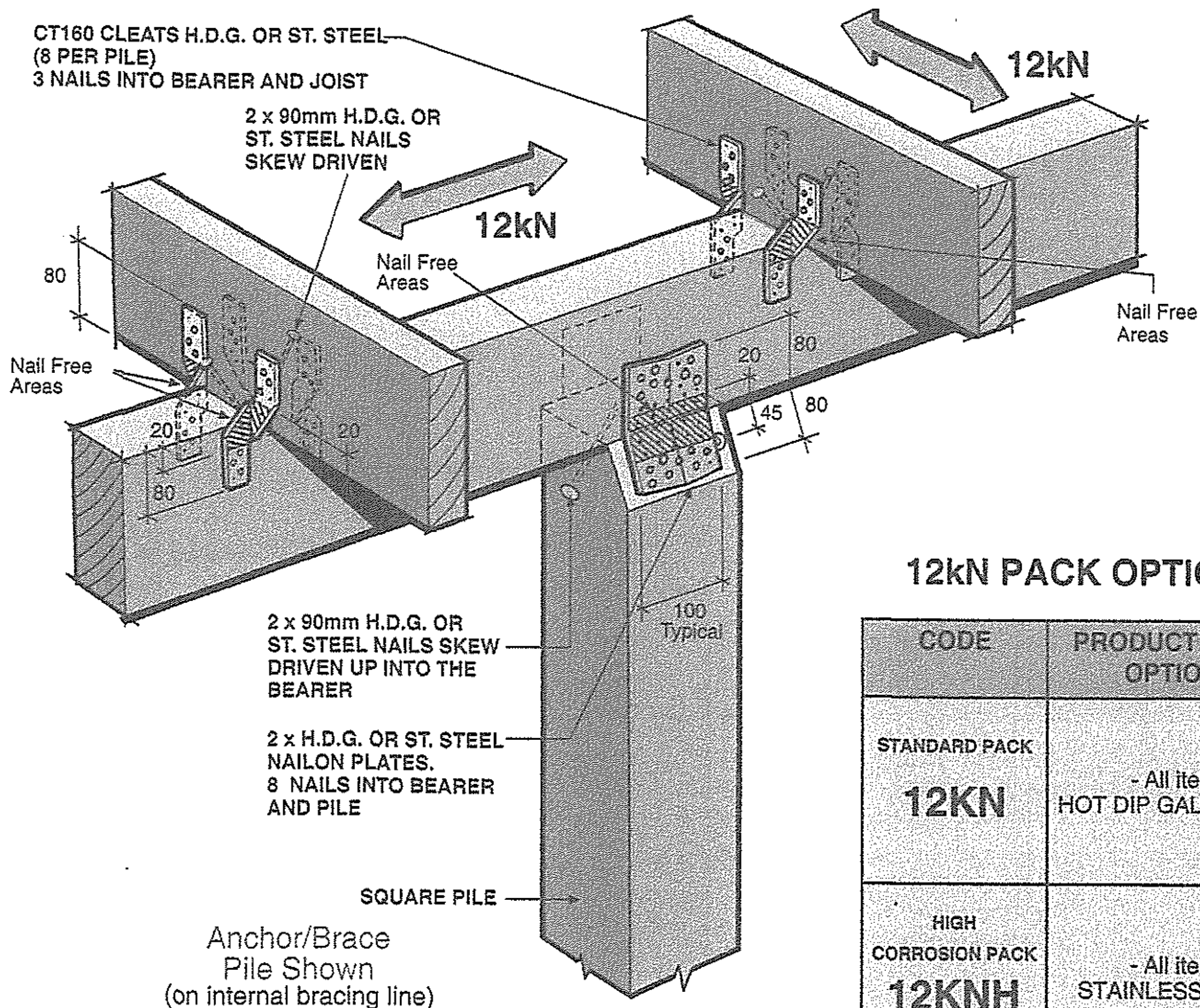
- (a) Where *bearers* are butted over the support: 45 mm;
- (b) In all other cases: 90 mm.

*Any packing necessary beneath bearers shall be of a material as durable and as incompressible as the bearer itself.***C6.12.6***Packing beneath bearers should be avoided if possible.*

LUMBERLOK®

12kN PILE FIXING FOR BRACED PILES OR ANCHOR PILES

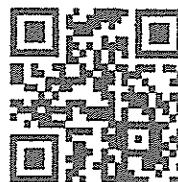
- ★ The 12kN Pile Fixing must be installed in accordance with this brochure
- ★ Auckland University Tested. Test Ref. 4613
- ★ All subfloor construction must be in accordance with NZS 3604:2011
- ★ NZS 3604 requires lines of lateral support to floor joists within 300mm of bearer or bracing lines, refer to Clause 7.1.2
- ★ Joists deeper than 150mm require solid nogging over braced or anchor pile



12kN PACK OPTIONS

CODE	PRODUCT FINISH OPTIONS
STANDARD PACK 12KN	- All items HOT DIP GALVANISED
HIGH CORROSION PACK 12KNH	- All items STAINLESS STEEL

★ See Over For Corrosion Table.



SCAN FOR
INSTALLATION
VIDEO

<https://vimeo.com/117350344>

P. GARLAND HOUSE
31 Halswell Street
WHANGANUI

EXTERIOR DOOR & WINDOW
LINTEL SIZES

	Lintel Sizes	Rough Opening size Height & Width	Reference
W1	2/90x45	2790 x 885 New Alum.Window	Design It.Calcs Member Lintel 1
W2	2/90x45	2790 x 885 New Alum.Window	Design It Calcs. Member Lintel 2
W3	2/90x45	2790 x 885 New Alum. Window	Design It Calcs. Member Lintel 3
W4	2//90x45	2790 x 885 New Alum. Window	Design It Calcs. Member Lintel 4
W5	2/140x45	2790 x 885 New Alum. Window	Design It.Calcs Member Lintel 5
W6	2/190x45	1870 x 1740 New Alum.Window	Design It.Calcs Member Lintel 6
W7	Girder Lintel 2/190x45	1720 x 1640 New Alum. Window	Design It Calcs Wang Frames & Trusses Member Lintel 1
W8	2/90x45	1570 x 760 New Alum. Window	Design It Calcs Member Lintel 7
WD1	2/140x45	2790 x 1700 New Alum.French Doors	Design It Calcs Member Linel 8
WD2	2/140x45	2790 x 1700 New Alum. Door	Design It Calcs Member Lintel 9

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***All new double glazed aluminium window and door joinery units are to be finished with matching timber facings and planted timber sills.**

Note:

- **For Window/Doors W1,W2,W3,W4,W5,W6,W7,W8, WD1 & WD2**
- **Exterior cladding is either new and/or existing rusticated weatherboards, direct fixed.**

Therefore:

To comply with E2/AS1 (direct fixed cladding)

The builder is to allow to fix 20mm jamb battens, each side of the timber frame rough opening sizes shown above.

The builder is also to confirm the finished sizes of all windows and doors with the owner, including finished head heights above F.FL. Level before framing and trimming openings and the manufacturer and installation of new (existing) joinery units.

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DESIGN CERTIFICATE

Technical basis for structural design methodology contained in designIT for houses - New Zealand.

designIT for houses, New Zealand has been developed by experienced timber engineers to assist designers in selecting appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey LVL Limited (including hySPAN, hy90, hyONE and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604.

The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

designIT relies on the accurate input of span and loading information by the user. Where accurate inputs are submitted the product and/or stress grade and the size given will comply with the structural requirements of the New Zealand Building Code (NZBC), provided the installation is in accordance with the installation requirements provided by designIT and/or in product literature and/or NZS 3604, or specific engineering design, as appropriate.

Futurebuild LVL and SG8 components, when used and treated to the required treatment levels prescribed in NZS 3602 and NZS 3604, as modified by Acceptable Solution B2/AS1, will comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

References:

1. NZS 3603:1993 Timber Structures Standard.
2. NZS 3604:2011 Timber-framed buildings.
3. AS/NZS 1170:2002 Structural design actions, Parts 0 and 1.
4. AS/NZS 1170:2011 Structural design actions, Part 2: Wind actions.
5. AS/NZS 1170:2003 Structural design actions, Part 3: Snow and ice actions.
6. AS 1720.1:2010 Timber structures. Part 1: Design methods.
7. AS 1720.3:2016 Timber structures. Part 3: Design criteria for timber-framed residential buildings.

This Design Certificate, and any associated warranty/certification, is void where there has been substitution of alternate products not detailed within the Member Specification.

Version date: 2 October 2020

For further information or advice contact:

Carter Holt Harvey LVL Limited,
173 Captain Springs Road, Orehunga. Auckland
Telephone: 0800 808 131
Email: designit@futurebuild.co.nz
Web: <https://futurebuild.co.nz/>

Specifier details:

Specifier:	Paul Clark
Business name:	Architectural Draughting Services
Email:	pv.clark@xtra.co.nz

Project & site details:

Project:	Garland House -
Site address:	31 Halswell Street Whanganui
Design wind zone	Low
Snow loading	Design snow zone: N0

MEMBER DESIGN DETAILS

Member 1

- | | |
|--------------------------------|---|
| 1) Member code and description | L1 - Lintels - In single or upper storey load bearing walls |
| 2) Date prepared | 09 February 2021 |
| 3) Serviceability criteria | AS 1720.1: 2010 and AS 1720.3: 2016 |

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4) Design inputs

Span	0.9 m
Roof load width 'RLW'	1.3 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	3.0 mm	0.4 mm (long term)	6.9
Live load - $\Psi_S Q$	3.6 mm	0.1 mm	27.6
Wind load - W_s	4.5 mm	0.2 mm	21.6

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35G	0.60	-0.7
1.2G + 1.5Q	0.80	-1.2
1.2G + W_u + $\Psi_c Q$	1.00	-1.2
0.9G + W_u	1.00	0.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 2**1) Member code and description**

L2 - Lintels - In single or upper storey load bearing walls

2) Date prepared

09 February 2021

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	0.9 m
Roof load width 'RLW'	1.3 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + Ψ_{LQ} *	3.0 mm	0.4 mm (long term)	6.9
Live load - Ψ_{SQ}	3.6 mm	0.1 mm	27.6
Wind load - W_s	4.5 mm	0.2 mm	21.6

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-0.7
1.2G + 1.5Q	0.80	-1.2
1.2G + W_u + Ψ_{cQ}	1.00	-1.2
0.9G + W_u	1.00	0.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 3

1) Member code and description L3 - Lintels - In single or upper storey load bearing walls

2) Date prepared 09 February 2021

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	0.9 m
Roof load width 'RLW'	1.3 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + Ψ_{LQ} *	3.0 mm	0.4 mm (long term)	6.9
Live load - Ψ_{SQ}	3.6 mm	0.1 mm	27.6
Wind load - W_s	4.5 mm	0.2 mm	21.6

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3}
		End kN ⁴

1.35G	0.60	-0.7
1.2G + 1.5Q	0.80	-1.2
1.2G + W _u + $\Psi_c Q$	1.00	-1.2
0.9G + W _u	1.00	0.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 4

1) Member code and description L4 - Lintels - In single or upper storey load bearing walls

2) Date prepared 09 February 2021

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	0.9 m
Roof load width 'RLW'	1.3 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	3.0 mm	0.4 mm (long term)	6.9
Live load - $\Psi_S Q$	3.6 mm	0.1 mm	27.6
Wind load - W _s	4.5 mm	0.2 mm	21.6

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k ₁ ¹	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-0.7
1.2G + 1.5Q	0.80	-1.2
1.2G + W _u + $\Psi_c Q$	1.00	-1.2
0.9G + W _u	1.00	0.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 5

1) Member code and description L5 - Lintels - In single or upper storey load bearing walls

2) Date prepared 09 February 2021

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span 0.9 m
Roof load width 'RLW' 5.6 m
Roof type and mass Light roof and ceiling - 40 kg/m²
Nominal wall thickness 90 mm

5) Member specification

Size, stress grade/product Use 2/140 x 45 SG8
Material type Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density < 480 kg/m³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	3.0 mm	0.7 mm (long term)	4.6
Live load - $\Psi_S Q$	3.6 mm	0.2 mm	17.9
Wind load - W_s	4.5 mm	0.3 mm	14.0

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.8
1.2G + 1.5Q	0.80	-4.4
1.2G + W_u + $\Psi_c Q$	1.00	-4.5
0.9G + W_u	1.00	1.3

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 6

1) Member code and description L6 - Lintels - In single or upper storey load bearing walls

2) Date prepared 09 February 2021

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span 1.7 m
Roof load width 'RLW' 5.6 m
Roof type and mass Light roof and ceiling - 40 kg/m²
Nominal wall thickness 90 mm

5) Member specification

Size, stress grade/product	Use 2/190 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + Ψ_{LQ}^*	5.7 mm	1.9 mm (long term)	2.9
Live load - $\Psi_s Q$	6.8 mm	0.6 mm	11.6
Wind load - W_s	8.5 mm	0.9 mm	9.1

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.6
1.2G + 1.5Q	0.80	-5.6
1.2G + W_u + $\Psi_c Q$	1.00	-5.7
0.9G + W_u	1.00	1.6

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 7

1) Member code and description L7 - Lintels - In single or upper storey load bearing walls

2) Date prepared 09 February 2021

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	0.8 m
Roof load width 'RLW'	5.6 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/90 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + Ψ_{LQ}^*	2.7 mm	1.3 mm (long term)	2.1
Live load - $\Psi_s Q$	3.2 mm	0.4 mm	8.1
Wind load - W_s	4.0 mm	0.6 mm	6.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.0
1.2G + 1.5Q	0.80	-4.8
1.2G + W_u + $\Psi_c Q$	1.00	-4.9
0.9G + W_u	1.00	1.4

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 8

1) Member code and description L8 - Lintels - In single or upper storey load bearing walls

2) Date prepared 09 February 2021

3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	1.7 m
Roof load width 'RLW'	3.6 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

5) Member specification

Size, stress grade/product	Use 2/140 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_{LQ}^*$	5.7 mm	2.9 mm (long term)	2.0
Live load - $\Psi_s Q$	6.8 mm	0.9 mm	7.8
Wind load - W_s	8.5 mm	1.4 mm	6.1

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.5
1.2G + 1.5Q	0.80	-3.9
1.2G + W_u + $\Psi_c Q$	1.00	-4.0
0.9G + W_u	1.00	1.1

8) Installation requirements

- Provide at least 30 mm bearing at end supports

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- Vertical lamination required - refer AS 1684

Member 9

- 1) Member code and description L9 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 09 February 2021
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|------------------------|---|
| Span | 1.5 m |
| Roof load width 'RLW' | 3.6 m |
| Roof type and mass | Light roof and ceiling - 40 kg/m ² |
| Nominal wall thickness | 90 mm |
- 5) Member specification
- | | |
|----------------------------|---|
| Size, stress grade/product | Use 2/140 x 45 SG8 |
| Material type | Dry softwood, machine stress graded and verified (NZS 3622) |
| Assumed design density | < 480 kg/m ³ |

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - G + $\Psi_L Q^*$	5.0 mm	2.0 mm (long term)	2.5
Live load - $\Psi_S Q$	6.0 mm	0.6 mm	10.0
Wind load - W_s	7.5 mm	1.0 mm	7.9

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-2.2
1.2G + 1.5Q	0.80	-3.5
1.2G + W_u + $\Psi_c Q$	1.00	-3.5
0.9G + W_u	1.00	1.0

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Notes for interpretation of serviceability data

- 'average deflection' is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS 1170 and AS 1720.
- Deflection is the flexural response to load 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

No 1 Framing – visually graded to NZS 3631	Average + 100%
SG grades - mechanically graded to AS/NZS 1748	Average + 43%

GL grades for glulam to AS 1328
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)

Average + 33%

Average +18%

As can be seen, comparison of the 'average deflection' for different materials, even if calculated on the same basis, does not give the whole picture!

3. The limits referred are those specified in AS 1720.3 for the stated load case.
4. 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements detailed.

Notes for interpretation of reaction data

1. Duration of load factor 'k₁' for strength as per NZS 3603:1993
2. Negative (-) reactions relate to the 'gravity' or 'downwards' force on the support
3. Positive reactions relate to the 'upwards' forces or 'tie-down' requirement on the support
4. End reaction includes allowance for overhang/cantilever where one has been designed

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DESIGN CERTIFICATE

Technical basis for structural design methodology contained in designIT for houses - New Zealand.

designIT for houses, New Zealand has been developed by experienced timber engineers to assist designers in selecting appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey LVL Limited (including hySPAN, hy90, hyONE and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604.

The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

designIT relies on the accurate input of span and loading information by the user. Where accurate inputs are submitted the product and/or stress grade and the size given will comply with the structural requirements of the New Zealand Building Code (NZBC), provided the installation is in accordance with the installation requirements provided by designIT and/or in product literature and/or NZS 3604, or specific engineering design, as appropriate.

Futurebuild LVL and SG8 components, when used and treated to the required treatment levels prescribed in NZS 3602 and NZS 3604, as modified by Acceptable Solution B2/AS1, will comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

References:

1. NZS 3603:1993 Timber Structures Standard.
2. NZS 3604:2011 Timber-framed buildings.
3. AS/NZS 1170:2002 Structural design actions, Parts 0 and 1.
4. AS/NZS 1170:2011 Structural design actions, Part 2: Wind actions.
5. AS/NZS 1170:2003 Structural design actions, Part 3: Snow and ice actions.
6. AS 1720.1:2010 Timber structures. Part 1: Design methods.
7. AS 1720.3:2016 Timber structures. Part 3: Design criteria for timber-framed residential buildings.

This Design Certificate, and any associated warranty/certification, is void where there has been substitution of alternate products not detailed within the Member Specification.

Version date: 13 November 2020

For further information or advice contact:

Carter Holt Harvey LVL Limited,
173 Captain Springs Road, Onehunga. Auckland
Telephone: 0800 808 131
Email: designit@futurebuild.co.nz
Web: <https://futurebuild.co.nz/>

Specifier details:

Specifier:	Mark McCormick
Business name:	Wanganui Frames and Trusses Ltd
Email:	framesandtrusses@icloud.com

Project & site details:

Project:	Penny Garland House
Site address:	31 Halswell St Wanganui
Design wind zone	Low
Snow loading	Design snow zone: N0

MEMBER DESIGN DETAILS

Member 1

1) Member code and description

Kitchen window - Lintels - Supporting girder truss / truncated girder truss

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- 2) Date prepared 17 September 2020
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|-----------------------|-------------------------|
| Span | 2.7 m - continuous span |
| Roof mass | 40 kg/m ² |
| Roof load width 'RLW' | 4.6 m |
- 5) Member specification
- | | |
|----------------------------|---|
| Size, stress grade/product | Use 200 x 45 hySPAN |
| Material type | Structural Laminated Veneer Lumber to AS/NZS 4357 |

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	6.8 mm	3.5 mm (long term)	1.9
Live load - $\Psi_S Q$	10.8 mm	1.3 mm	8.1
Wind load - W_s	13.5 mm	2.0 mm	6.8

*Critical serviceability load case
See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}	
		End kN ⁴	Intermediate kN
1.35G	0.60	-5.2	-10.5
1.2G + 1.5Q	0.80	-7.5	-15.1
1.2G + $W_u + \Psi_C Q$	1.00	-9.0	-18.3
0.9G + W_u	1.00	3.3	6.6

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Provide at least 45 mm bearing at internal supports

Member 3

- 1) Member code and description VB2 - Verandah beams
- 2) Date prepared 17 September 2020
- 3) Serviceability criteria AS 1720.1: 2010 and AS 1720.3: 2016
- 4) Design inputs
- | | |
|-----------------------|----------------------|
| Span | 4.6 m - single span |
| Roof mass | 40 kg/m ² |
| Roof load width 'RLW' | 1.8 m |
- 5) Member specification
- | | |
|----------------------------|---|
| Size, stress grade/product | Use 300 x 63 hySPAN |
| Material type | Structural Laminated Veneer Lumber to AS/NZS 4357 |
- 6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	10.0 mm	5.5 mm (long term)	1.8
Live load - $\Psi_S Q$	12.0 mm	1.4 mm	8.8
Wind load - W_s	23.0 mm	3.1 mm	7.4

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-3.0
1.2G + 1.5Q	0.80	-4.3
1.2G + W_u + $\Psi_c Q$	1.00	-5.2
0.9G + W_u	1.00	1.9

8) Installation requirements

- Provide at least 30 mm bearing at end supports

Notes for interpretation of serviceability data

- 'average deflection' is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS 1170 and AS 1720.
- Deflection is the flexural response to load 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

No 1 Framing – visually graded to NZS 3631	Average + 100%
SG grades - mechanically graded to AS/NZS 1748	Average + 43%
GL grades for glulam to AS 1328	Average + 33%
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)	Average +18%

As can be seen, comparison of the 'average deflection' for different materials, even if calculated on the same basis, does not give the whole picture!

- The limits referred are those specified in AS 1720.3 for the stated load case.
- 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements detailed.

Notes for interpretation of reaction data

- Duration of load factor ' k_1 ' for strength as per NZS 3603:1993
- Negative (-) reactions relate to the 'gravity' or 'downwards' force on the support
- Positive reactions relate to the 'upwards' forces or 'tie-down' requirement on the support
- End reaction includes allowance for overhang/cantilever where one has been designed

LumbertokLintel Fixing ScheduleLight RoofWind Zone :- LowLintel Fixing Option

W1	Lintel Span Load Dimension	.975m 2.0m	Type E
W2	Lintel Span Load Dimension	.975m 2.0m	Type E
W3	Lintel Span Load Dimension	.975m 2.0m	Type E
W4	Lintel Span Load Dimension	.975m 2.0m	Type E
W5	Lintel Span Load Dimension	.975m 3.0m	Type E
W6	Lintel Span Load Dimension	1.83m 2.7m	Type E
W7	Lintel Span Load Dimension	1.73m 3.0m	Type E
W8	Lintel Span Load Dimension	.85m 4.8m	Type E
WD1	Lintel Span Load Dimension	1.79m 3.0m	Type E
WD2	Lintel Span Load Dimension	1.59m 4.5m	Type F

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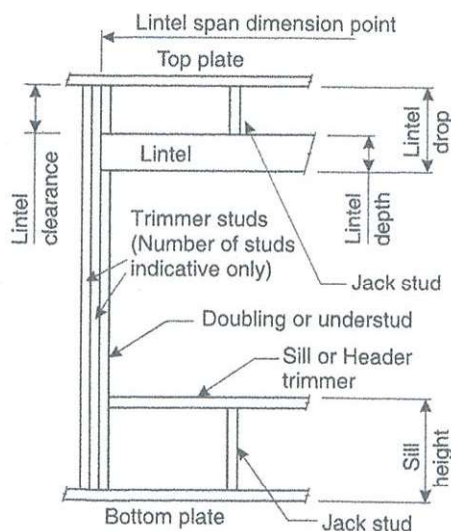
LINTEL FIXING SCHEDULE

ALTERNATIVE TO TABLE 8.14 & FIGURE 8.12 NZS 3604:2011

NOTE:

- ★ All fixings are designed for vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20 kPa.
- ★ Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist horizontal loads.
- ★ These fixings assume the correct choice of rafter/truss to top plate connections have been made.
- ★ All fixings assume bottom plate thickness of 45mm maximum. Note: TYLOK options on timber species.
- ★ Wall framing arrangements under girder trusses are not covered in this schedule.
- ★ All timber selections are as per NZS 3604:2011.

DEFINITIONS



Lintel Supporting Girder Trusses:

Roof Tributary Area	Light Roof Wind Zone			Heavy Roof Wind Zone		
	L, M, H	VH	EH	L, M, H	VH	EH
8.6 m ²	G	G	H	G	G	H
11.6 m ²	G	H	H	G	G	H
12.1 m ²	G	H	H	G	H	H
15.3 m ²	H	H	-	G	H	H
19.1 m ²	H	-	-	G	H	-
20.9 m ²	H	-	-	H	H	-
21.8 m ²	H	-	-	H	-	-
34.3 m ²	-	-	-	H	-	-

Notes:

- 1) Roof Tributary Area = approx. 1/2 x (Total roof area on girder and rafter trusses supported by lintel)
- 2) Assumed girder truss is at mid-span or middle third span of lintel
- 3) Use similar fixings for both ends of lintel
- 4) All other cases require specific engineering design

SELECTION CHART FOR LINTEL FIXING

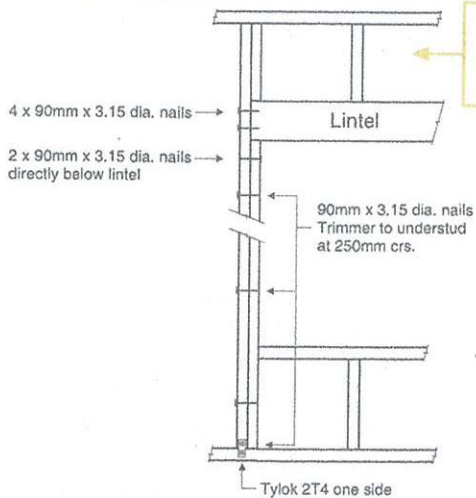
Lintel Span	Loaded Dimension (See Fig. 1.3 NZS 3604:2011)	Light Roof Wind Zone					Heavy Roof Wind Zone				
		L	M	H	VH	EH	L	M	H	VH	EH
0.7	2.0	E	E	E	E	F	E	E	E	E	E
	3.0	E	E	E	F	F	E	E	E	E	F
	4.0	E	E	F	F	F	E	E	E	F	F
	5.0	E	F	F	F	G	E	E	F	F	F
	6.0	E	F	F	G	G	E	E	F	F	G
0.9	2.0	E	E	E	F	F	E	E	E	E	F
	3.0	E	E	F	F	F	E	E	E	F	F
	4.0	E	E	F	F	F	E	E	F	F	F
	5.0	E	F	F	F	G	E	E	F	F	F
	6.0	E	F	F	G	G	E	E	F	F	G
1.0	2.0	E	E	E	F	F	E	E	E	E	F
	3.0	E	E	F	F	F	E	E	E	F	F
	4.0	E	F	F	F	G	E	E	F	F	F
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	E	F	F	G	G	E	E	F	F	G
1.2	2.0	E	E	F	F	F	E	E	F	F	F
	3.0	E	E	F	F	F	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	E	F	F	G	G	E	E	F	F	G
	6.0	F	F	G	G	H	E	E	F	G	G
1.5	2.0	E	E	F	F	F	E	E	F	F	F
	3.0	E	F	F	F	G	E	E	F	F	F
	4.0	E	F	F	G	G	E	E	F	F	G
	5.0	F	F	G	G	H	E	E	F	G	G
	6.0	F	F	G	H	H	E	E	F	G	H
2.0	2.0	E	F	F	F	G	E	E	F	F	F
	3.0	E	F	F	G	G	E	E	F	F	G
	4.0	F	F	G	G	H	E	E	F	G	G
	5.0	F	F	G	H	H	E	E	F	G	H
	6.0	F	G	G	H	H	E	F	G	H	H
2.4	2.0	E	F	F	G	G	E	E	F	F	G
	3.0	F	F	G	G	H	E	E	F	G	G
	4.0	F	F	G	H	H	E	E	F	G	H
	5.0	F	G	G	H	H	E	F	G	H	H
	6.0	F	G	H	H	-	E	F	G	H	H
3.0	2.0	E	F	F	G	G	E	E	F	F	G
	3.0	F	F	G	H	H	E	E	F	G	H
	4.0	F	G	G	H	H	E	F	G	H	H
	5.0	F	G	H	H	-	E	F	G	H	H
	6.0	F	G	H	-	-	E	F	G	H	-
3.6	2.0	F	F	G	G	H	E	E	F	G	G
	3.0	F	F	G	H	H	E	F	G	G	H
	4.0	F	G	H	H	-	E	F	G	H	H
	5.0	F	G	H	-	-	E	F	G	H	-
	6.0	G	H	H	-	-	E	F	H	-	-
4.2	2.0	F	F	G	G	H	E	E	F	G	G
	3.0	F	G	H	H	-	E	F	G	H	H
	4.0	F	G	H	-	-	E	F	G	H	-
	5.0	G	H	H	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-
4.5	2.0	F	F	G	H	H	E	E	F	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.4	F	G	H	H	-	E	F	G	H	-
	4.0	F	G	H	-	-	E	F	G	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
4.8	2.0	F	F	G	H	H	E	E	F	G	H
	3.0	F	G	H	H	-	E	F	G	H	H
	3.2	F	G	H	H	-	F	F	G	H	-
	4.0	F	G	H	-	-	E	F	H	H	-
	5.0	G	H	-	-	-	E	F	H	-	-
	6.0	G	H	-	-	-	E	F	H	-	-

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LINTEL FIXING OPTIONS

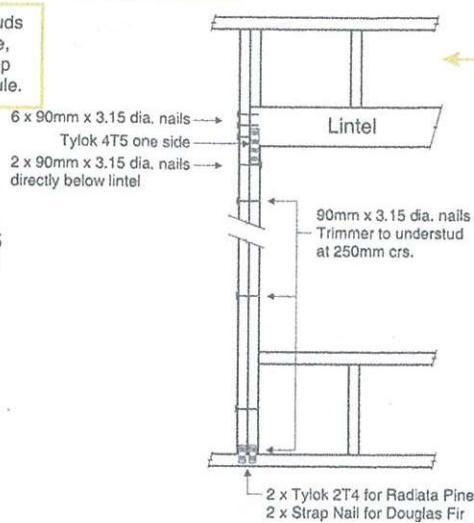
TYPE E 1.4 kN



For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

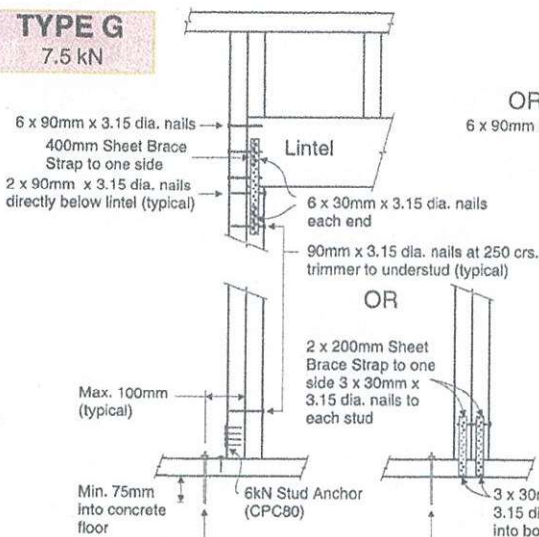
TYPE F 4.0 kN



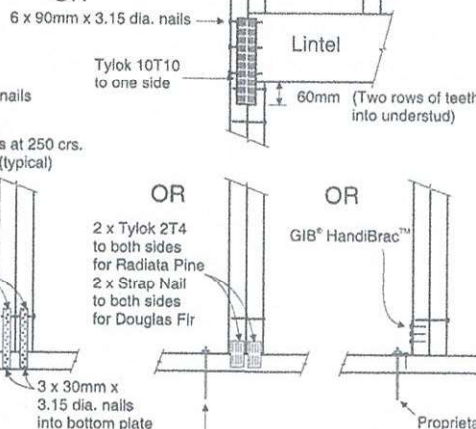
For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

TYPE G 7.5 kN



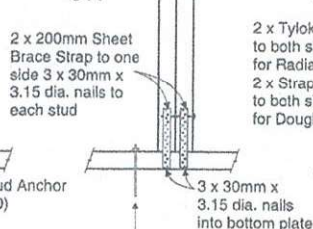
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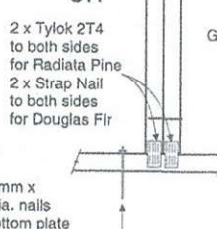
For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

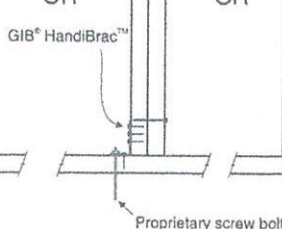
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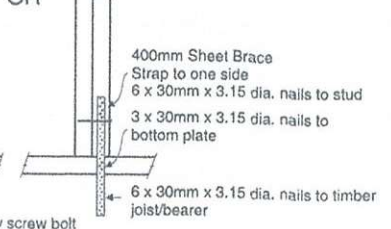
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OR

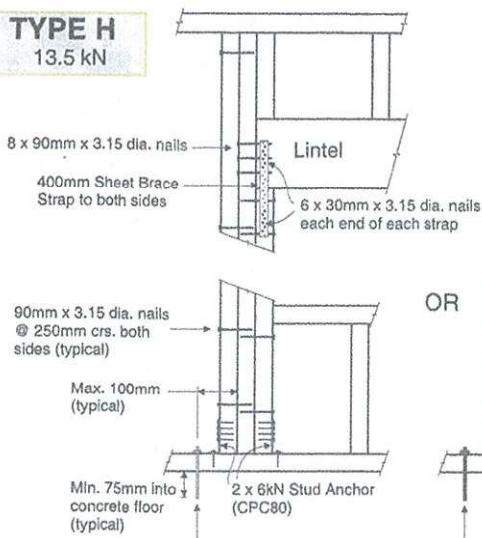


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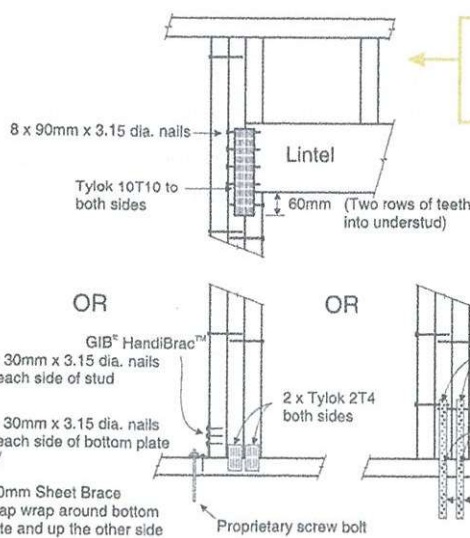


M12 proprietary concrete fixing bolt with 50x50x3mm square washer or M12 x 150mm coach screw with 50x50x3mm square washer into timber joist/bearer

TYPE H 13.5 kN



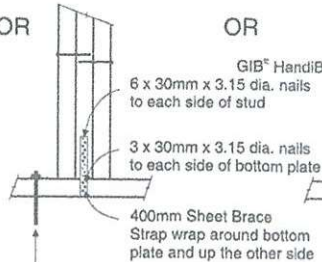
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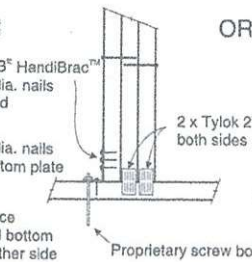
For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

Stud numbers indicative only. Refer Table 8.5 NZS 3604:2011

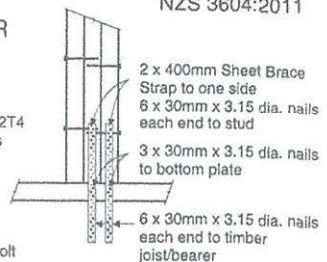
OR



OR



OR



M12 proprietary concrete fixing bolt with 50x50x3mm square washer or M12 x 150mm coach screw with 50x50x3mm square washer into timber joist/bearer



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SECTION 1 - SCOPE AND INTERPRETATION

NZS 3604:2011

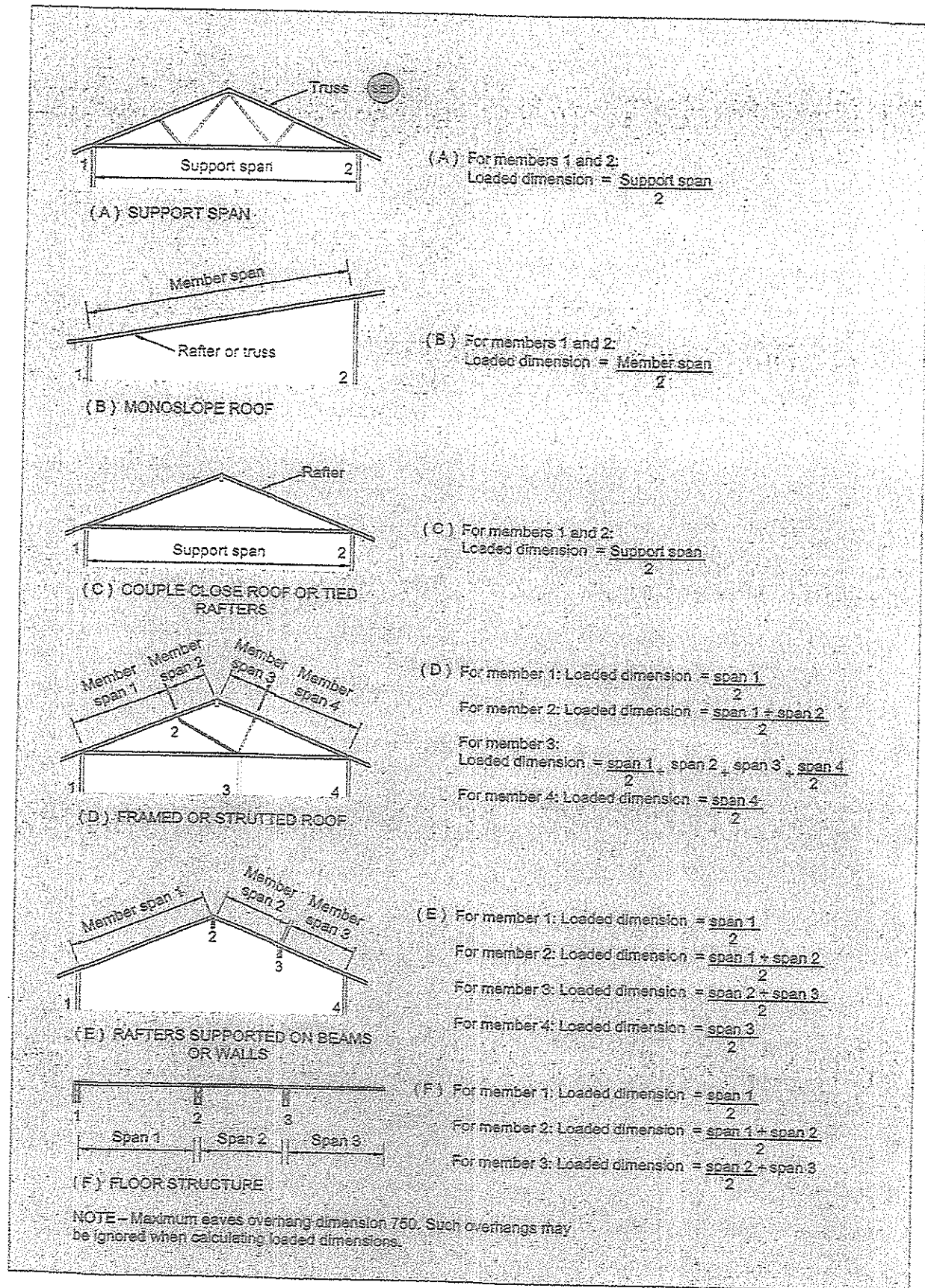


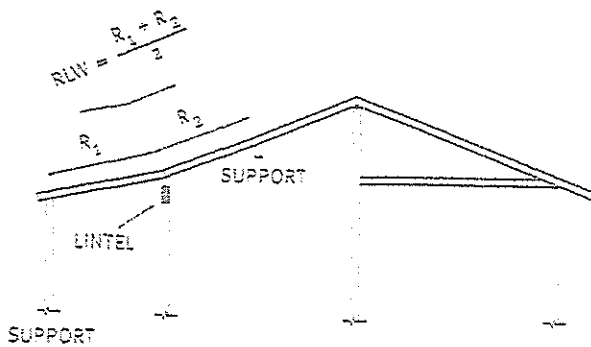
Figure 1.3 - Definitions of spans and loaded dimensions (see 1.3)

Supporting roof and ceiling only

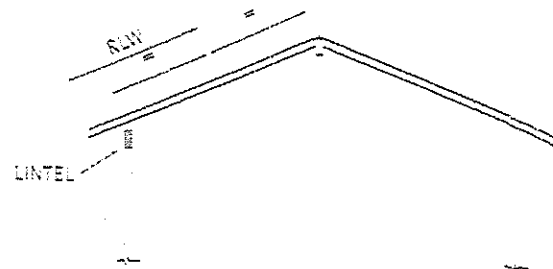
Hy90 Section D x B (mm)	Light roof and ceiling									
	Roof load width 'RLW' (m)									
	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2
	Maximum lintel span (m)									
150 x 90	3.1	2.9	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0
200 x 90	3.8	3.6	3.4	3.3	3.1	3.0	2.9	2.9	2.8	2.6
240 x 90	4.4	4.1	3.9	3.7	3.6	3.5	3.4	3.3	3.2	3.2
300 x 90	5.2	4.9	4.6	4.4	4.3	4.1	4.0	3.9	3.6	3.6
360 x 90	5.9	5.5	5.3	5.1	4.9	4.7	4.6	4.5	4.4	4.3
400 x 90	6.3	6.0	5.7	5.5	5.3	5.1	5.0	4.8	4.7	4.6

Hy90 Section D x B (mm)	Heavy roof and ceiling									
	Roof load width 'RLW' (m)									
	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2
	Maximum lintel span (m)									
150 x 90	2.5	2.3	2.1	2.0	1.9	1.9	1.8	1.7	1.7	1.6
200 x 90	3.3	3.0	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.2
240 x 90	3.6	3.4	3.2	3.1	3.0	2.9	2.8	2.7	2.7	2.6
300 x 90	4.3	4.0	3.8	3.6	3.5	3.4	3.3	3.2	3.1	3.1
360 x 90	4.9	4.6	4.4	4.2	4.0	3.9	3.8	3.7	3.6	3.5
400 x 90	5.3	5.0	4.7	4.5	4.3	4.2	4.1	4.0	3.9	3.8

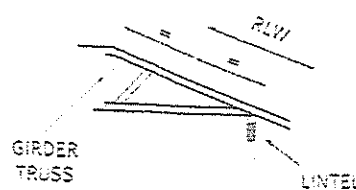
Minimum bearing at each end of lintel = 35mm doubling stud



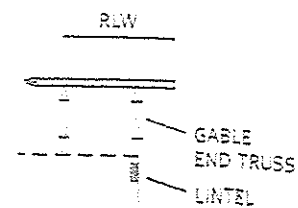
CATHEDRAL ROOF



TRUSSED ROOF



HIP END TRUSSED ROOF



GABLE END TRUSSED ROOF

SECTION 8 - WALLS

NZS 3604:2011

Table 8.2 - Studs in loadbearing walls for all wind zones - SG 8 (see 8.5.1.1)

Wind zone	Loaded dimension of wall (m)	Stud sizes for maximum length (height) of (m)								
		2.4			2.7			3.0		
		At maximum stud spacing (mm) of:								
		300	400	600	300	400	600	300	400	600
		(mm x mm)	(mm x mm)	(mm x mm)	(mm x mm)	(mm x mm)	(mm x mm)	(mm x mm)	(mm x mm)	(mm x mm)
(width x thickness)										
(a) Single or top storey – Light and heavy roof										
Extra high	2.0	-	90 x 45	90 x 70	90 x 45	90 x 70	90 x 90	90 x 70	90 x 70	140 x 45
	4.0	-	90 x 45	90 x 70	90 x 45	90 x 70	90 x 90	90 x 70	90 x 70	140 x 45
	6.0	-	90 x 45	90 x 70	90 x 45	90 x 70	90 x 90	90 x 70	90 x 70	140 x 45
Very high	2.0	-	90 x 45	90 x 70	90 x 35	90 x 70	90 x 70	90 x 45	90 x 70	90 x 90
	4.0	-	90 x 45	90 x 70	90 x 35	90 x 70	90 x 70	90 x 45	90 x 70	90 x 90
	6.0	-	90 x 45	90 x 70	90 x 35	90 x 70	90 x 70	90 x 45	90 x 70	90 x 90
High	2.0	-	90 x 35	90 x 45	90 x 35	90 x 45	90 x 70	90 x 35	90 x 70	90 x 70
	4.0	-	90 x 35	90 x 45	90 x 35	90 x 45	90 x 70	90 x 35	90 x 70	90 x 70
	6.0	-	90 x 35	90 x 45	90 x 35	90 x 45	90 x 70	90 x 35	90 x 70	90 x 70
Medium	2.0	-	90 x 35	90 x 35	90 x 35	90 x 35	90 x 45	90 x 35	90 x 35	90 x 70
	4.0	-	90 x 35	90 x 35	90 x 35	90 x 35	90 x 45	90 x 35	90 x 35	90 x 70
	6.0	-	90 x 35	90 x 35	90 x 35	90 x 35	90 x 45	90 x 35	90 x 35	90 x 70
Low	2.0	-	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 45
	4.0	-	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 45
	6.0	-	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 35	90 x 45
Internal walls for all wind zones	2.0	-	70 x 45	70 x 45	70 x 45	70 x 45	90 x 35	70 x 45	90 x 35	90 x 45
	4.0	-	70 x 45	70 x 45	70 x 45	70 x 45	90 x 35	70 x 45	90 x 35	90 x 45
	6.0	-	70 x 45	70 x 45	70 x 45	70 x 45	90 x 35	70 x 45	90 x 35	90 x 45
3.6										
4.2										
4.8										
At maximum stud spacing (mm) of:										
300 400 600 300 400 600 300 400 600										
(mm x mm) (mm x mm) (mm x mm) (mm x mm) (mm x mm) (mm x mm) (mm x mm) (mm x mm) (mm x mm)										
(width x thickness)										
Extra high	2.0	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	140 x 90	190 x 90	190 x 90
	4.0	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	140 x 90	190 x 90	190 x 90
	6.0	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	140 x 90	190 x 90	190 x 90
Very high	2.0	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	140 x 90	190 x 45	190 x 90
	4.0	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	140 x 90	190 x 45	190 x 90
	6.0	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	140 x 90	190 x 45	190 x 90
High	2.0	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	190 x 45	190 x 90
	4.0	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	140 x 90	190 x 90
	6.0	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90	140 x 90	140 x 90	140 x 90	190 x 90
Medium	2.0	90 x 70	90 x 70	140 x 45	90 x 90	140 x 45	140 x 90	140 x 45	140 x 90	140 x 90
	4.0	90 x 70	90 x 70	140 x 45	90 x 90	140 x 45	140 x 90	140 x 45	140 x 90	140 x 90
	6.0	90 x 70	90 x 70	140 x 45	90 x 90	140 x 45	140 x 90	140 x 45	140 x 90	140 x 90
Low	2.0	90 x 35	90 x 70	90 x 70	90 x 70	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90
	4.0	90 x 35	90 x 70	90 x 70	90 x 70	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90
	6.0	90 x 35	90 x 70	90 x 70	90 x 70	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90
Internal walls for all wind zones	2.0	90 x 35	90 x 70	90 x 70	90 x 70	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90
	4.0	90 x 35	90 x 70	90 x 70	90 x 70	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90
	6.0	90 x 35	90 x 70	90 x 70	90 x 70	90 x 90	140 x 45	140 x 45	140 x 45	140 x 90
- For definition of loaded dimension see 1.3.										

- For definition of loaded dimension see 1.3.

- NOTE -
- Determine the loaded dimension of the wall at floor level and the loaded dimension of the wall above at roof level and use the greater value in this table.
 - 140 x 45 may be substituted for 90 x 90. 90 x 35 may be substituted for 70 x 45.
 - Studs 70 mm and 90 mm thick may be replaced with studs of 35 mm and 45 mm thickness respectively, provided they are placed at no more than one half the spacing required for the 70 mm and 90 mm stud they are replacing.
 - Studs 70 mm and 90 mm thick may be substituted with built-up members sized in accordance with 8.5.1.2 and nailed together in accordance with 2.4.4.7.

SECTION 8 - WALLS

NZS 3604:2011

Table 8.4 - Studs in non-loadbearing walls for all wind zones - SG 8 (see 8.5.1.1 and figure 8.2)

Wind zone	Maximum length (height) of stud (m)	Stud size for maximum spacing of studs (mm) of:		
		300 (mm x mm)	400 (mm x mm) (width x thickness)	600 (mm x mm)
Extra high	2.4	90 x 35	90 x 45	90 x 70
	2.7	90 x 45	90 x 70	90 x 90
	3.0	90 x 70	90 x 70	140 x 45
	3.3	90 x 90	140 x 45	140 x 45
	3.6	140 x 45	140 x 45	140 x 70
	3.9	140 x 45	140 x 70	190 x 45
	4.2	140 x 70	140 x 70	190 x 45
	4.8	190 x 45	190 x 70	-
Very high	2.4	90 x 35	90 x 35	90 x 70
	2.7	90 x 35	90 x 45	90 x 70
	3.0	90 x 45	90 x 70	90 x 90
	3.3	90 x 70	90 x 90	140 x 45
	3.6	90 x 90	140 x 45	140 x 45
	3.9	140 x 45	140 x 45	140 x 70
	4.2	140 x 45	140 x 70	190 x 45
	4.8	140 x 70	190 x 45	190 x 70
High	2.4	90 x 35	90 x 35	90 x 45
	2.7	90 x 35	90 x 35	90 x 70
	3.0	90 x 35	90 x 45	90 x 70
	3.3	90 x 70	90 x 70	140 x 45
	3.6	90 x 70	90 x 90	140 x 45
	3.9	90 x 90	140 x 45	140 x 70
	4.2	140 x 45	140 x 45	140 x 70
	4.8	140 x 70	190 x 45	190 x 45
Medium and low	2.4	90 x 35	90 x 35	90 x 35
	2.7	90 x 35	90 x 35	90 x 35
	3.0	90 x 35	90 x 35	90 x 70
	3.3	90 x 35	90 x 45	90 x 70
	3.6	90 x 70	90 x 70	140 x 45
	3.9	90 x 70	90 x 90	140 x 45
	4.2	90 x 90	140 x 45	140 x 70
	4.8	140 x 45	140 x 70	190 x 45
Internal walls for all wind zones	2.4	70 x 45	70 x 45	70 x 45
	2.7	70 x 45	70 x 45	90 x 35
	3.0	70 x 45	90 x 35	90 x 35
	3.3	90 x 35	90 x 35	90 x 70
	3.6	90 x 45	90 x 70	90 x 90
	3.9	90 x 70	90 x 70	140 x 45
	4.2	90 x 70	90 x 90	140 x 45
	4.8	140 x 45	140 x 45	140 x 70

NOTE -

- (1) 90 x 35 may be substituted for 70 x 45.
140 x 45 may be substituted for 90 x 90.
- (2) Studs 70 mm and 90 mm thick may be replaced with studs of 35 mm and 45 mm thickness respectively, provided they are placed at no more than one half the spacing required for the 70 mm and 90 mm stud they are replacing.
- (3) Studs 70 mm and 90 mm thick may be substituted with built-up members sized in accordance with 8.5.1.2 and nailed together in accordance with 2.4.4.7.

EXTERNAL WALLSTOP PLATE FIXING

- Refer Lumberlok Stud to top plate fixing

- Wind Zone - Low

- Studs 3.4 metres

- Load Dimension $\frac{6.0}{2} + .310$ o/h

- Load Dimension = 3.4 metres

- Fixing Option = A Refer attached Lumberlok
Fixing Options



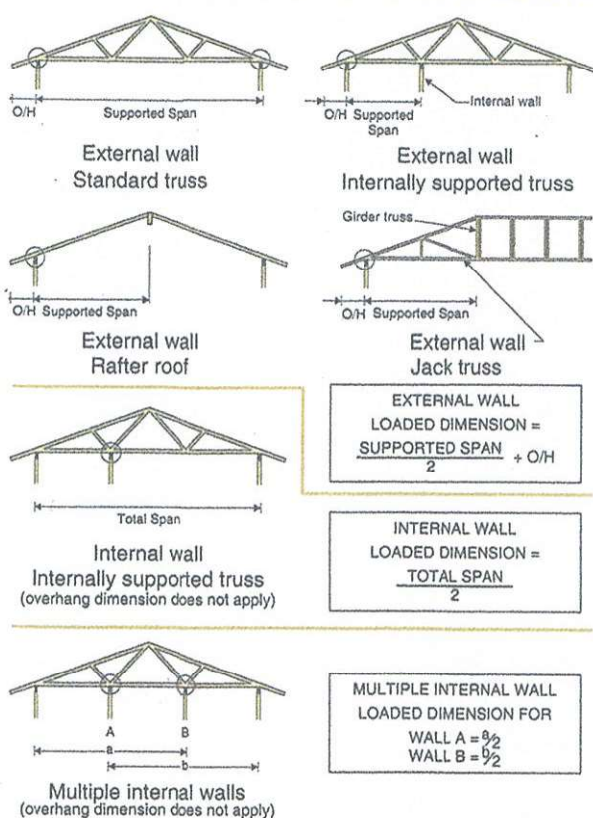
LUMBERLOK®

STUD TO TOP PLATE FIXING SCHEDULE ALTERNATIVE TO TABLE 8.18 NZS 3604:2011

NOTE:

- ★ All fixings are designed to resist vertical loads only. Dead loads include the roof weight and standard ceiling weight of 0.20kPa.
- ★ Refer to Table 8.19 NZS 3604:2011 for nailing schedule to resist lateral loads.
- ★ These fixings assume the correct choice of rafter/truss to top plate connections have been made.
- ★ For gable end walls where the adjacent rafter/truss is located within 1200mm and with a maximum verge overhang of 750mm, select stud to top plate fixing using a loaded dimension of 1.5m.
- ★ All fixings assume top plate thickness of 45mm maximum.
- ★ Wall framing arrangements under girder trusses are not covered in this schedule.
- ★ All timber selections are as per NZS 3604:2011.

LOADED DIMENSION DEFINITION



FIXING SELECTION CHART

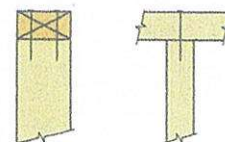
(Suitable for walls supporting roof members at 600, 900 or 1200mm crs.)
Wind Zones L, M, H, VH, EH, as per NZS 3604:2011

Loaded Dimension (m) Stud Centres			Light Roof Wind Zone					Heavy Roof Wind Zone				
300mm	400mm	600mm	L	M	H	VH	EH	L	M	H	VH	EH
3.0	2.3	1.5	A	A	B	B	B	A	A	B	B	B
4.0	3.0	2.0	A	A	B	B	B	A	A	B	B	B
5.0	3.8	2.5	A	B	B	B	B	A	A	B	B	B
6.0	4.5	3.0	A	B	B	B	B	A	A	B	B	B
7.0	5.3	3.5	A	B	B	B	B	A	A	B	B	B
8.0	6.0	4.0	A	B	B	B	B	A	A	B	B	B
9.0	6.8	4.5	B	B	B	B	B	A	A	B	B	B
10.0	7.5	5.0	B	B	B	B	B	A	A	B	B	B
11.0	8.3	5.5	B	B	B	B	B	A	A	B	B	B
12.0	9.0	6.0	B	B	B	B	B	A	A	B	B	B

FIXING OPTIONS

FIXING TYPE A 0.7kN

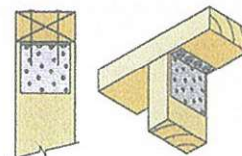
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



FIXING TYPE B 4.7kN

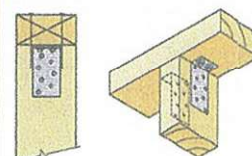
CHOOSE ANY OF THE 3 OPTIONS BELOW

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
LUMBERLOK
6kN Stud Anchor
(CPC80)

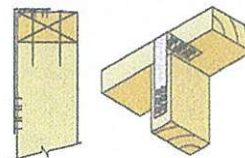
2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
2 x LUMBERLOK
CPC40

Recommended for internal wall options to avoid lining issues

2 x 90mm x 3.15 dia. plain steel wire nails driven vertically into stud.



Plus
LUMBERLOK
Stud Strap
(one face only)

NOTE:

To calculate the number of B type fixings required, divide the wall length by the stud centres, add 1 to this figure and locate this number of fixings as evenly as possible along the wall length. This figure includes the start and end studs in each wall length.



SCAN FOR
SPECIFICATION
VIDEO

<https://vimeo.com/117353604>

9.4 Timber Weatherboards

Amend 5
Aug 2011

Timber weatherboard *claddings* shall be either *direct fixed* to *framing* over a *wall underlay* or fixed over a *drained cavity* as described in Paragraph 9.1.8.

Based on the *risk score* for an *external wall* calculated as per Paragraph 3.1, the weatherboard *cladding* may require the inclusion of a *drained cavity*.

9.4.1 Limitations

9.4.1.1 Weatherboard profiles

This Acceptable Solution is limited to the following types of timber weatherboards:

- a) Horizontal bevel-back,
- b) Horizontal rebated bevel-back,
- c) Horizontal rusticated,
- d) Vertical shiplap, and
- e) Vertical board and batten.

Profiles shall be as given in NZS 3617 or BRANZ Bulletin 411.

9.4.1.2 Vertical weatherboards

This Acceptable Solution is limited to the use of *direct fixed* vertical weatherboards in risk categories as shown in Table 3.

COMMENT:

Vertical weatherboards are not used over cavities because of the need for horizontal battens, which if solid would interfere with a *drained cavity*.

Vertical weatherboards are therefore limited to low risk applications.

9.4.1.3 Horizontal weatherboards

Horizontal weatherboards shall be either *direct fixed* or fixed over a *drained cavity*, according to the risk categories as shown in Table 3.

9.4.2 Materials

Timber weatherboard *cladding* shall include the following features:

- a) *Wall underlay* complying with Table 23 and Paragraphs 9.1.5–9.1.7, and
- b) Timber selection and treatment of weatherboards in accordance with NZS 3602.

9.4.3 Installation

A *building underlay* complying with Table 23 shall be installed behind:

- a) All *direct fixed* timber weatherboards, or
- b) *Cavity battens* for timber weatherboards installed over a *drained cavity*.

COMMENT:

Refer to Paragraph 1.5 for qualification of installers.

9.4.3.1 Fixings

Fixings shall comply with Tables 20 and 24.

Timber weatherboards shall be drilled for nailing at all joints and ends. All cut ends of painted weatherboards shall be primed.

9.4.4 Horizontal weatherboards

9.4.4.1 Horizontal laps

Laps shall be:

- a) 32 mm for non-rebated bevel-back boards, or
- b) 25 mm horizontal lap for rebated bevel-back and rusticated boards, with a minimum gap of 2 mm at the overlap between boards.

9.4.4.2 Joints

Joints shall be made only over supports and have:

- a) Corrosion-resistant soakers fitted, complying with Paragraph 4.3.2 to Paragraph 4.3.8, or
- b) Scarf or splay joints.

9.4.4.3 Fixings

Boards shall be fixed through the *wall underlay* to the *framing* in accordance with Table 24.

Amend 5
Aug 2011

Amend 5
Aug 2011

Amend 2
Jul 2005

Amend 5
Aug 2011

Amend 5
Aug 2011

Amend 5
Aug 2011

Amend 5
Aug 2011

9.4.4.4 External corners

External corners shall be weatherproofed by one of the following methods:

- a) For rusticated and bevel-back weatherboards, corner boxes with:
 - i) scribes for bevel-back weatherboards, as shown in Figure 78, or
 - ii) plugs or scribes for rusticated weatherboards, as shown in Figure 78,
- b) For bevel-back weatherboards:
 - i) mitred joints with back *flashing* as shown in Figure 78, or
 - ii) mitred joints with corrosion-resistant soakers – refer to Paragraphs 4.3.2 to 4.3.6 and Figure 77.

9.4.4.5 Internal corners

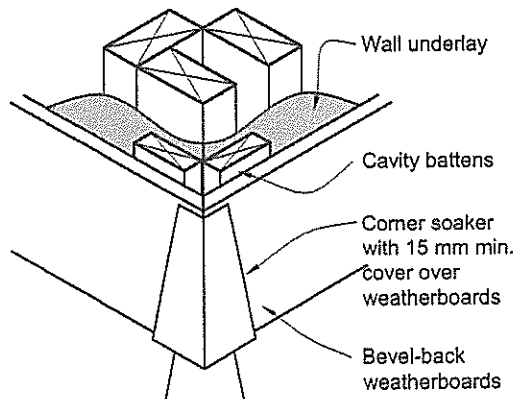
Internal corners shall be made *weathertight* as shown in Figure 79. A corrosion-resistant *flashing* shall be fitted behind weatherboards at all internal corners as shown in Figure 79.

Amend 5
Aug 2011

Amend 5
Aug 2011

Figure 77: Corner soakers for bevel-back weatherboards
Paragraph 9.4.4.4

NOTE: Soaker corner for *direct fixed* weatherboards is similar to Figure 88.



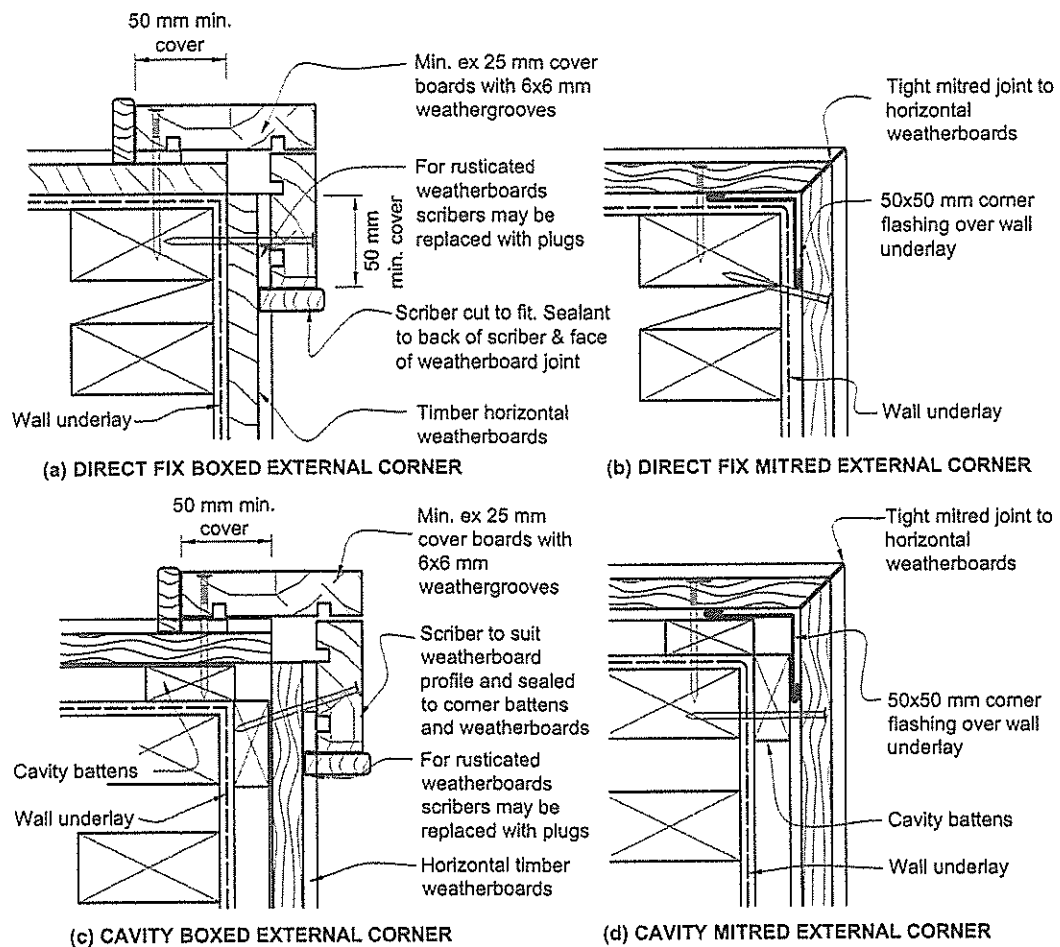
Amend 2
Jul 2005

Amend 2
Jul 2005

Amend 5
Aug 2011

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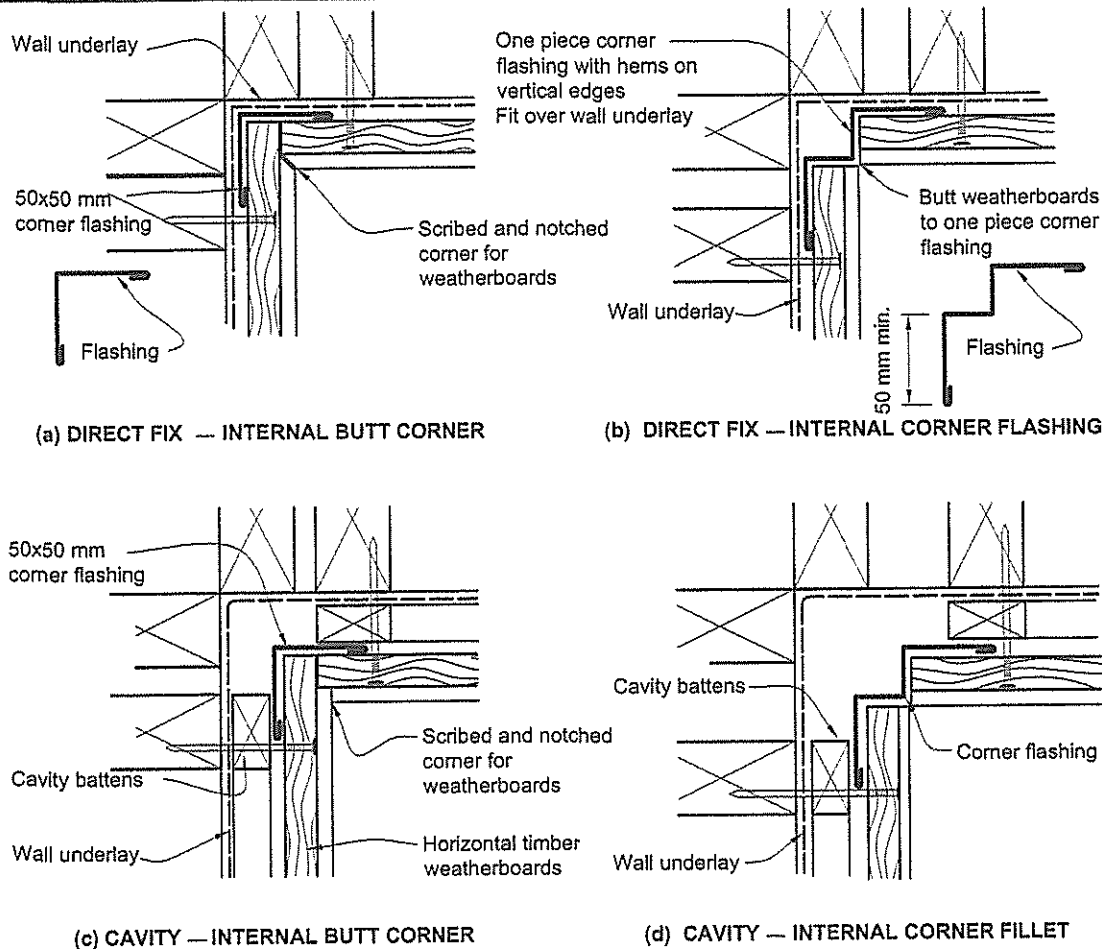
Figure 78: External corners for horizontal weatherboards
Paragraph 9.4.4.4



Amend 5
Aug 2011

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Figure 79: Internal corners for horizontal or vertical weatherboards
Paragraph 9.4.4.5



Amend 5
Aug 2011

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9.4.5 Vertical weatherboards

Vertical shiplap and board and batten weatherboards shall be in continuous lengths over a storey height.

9.4.5.1 Laps

- Vertical shiplap weatherboards shall be fitted with a minimum gap of 2 mm at the overlap between boards.
- Board and batten weatherboards shall:
 - be fitted with a 5 mm to 8 mm gap between boards, and
 - have weather grooves to boards and battens aligned.

9.4.5.2 Fixings

Vertical weatherboards shall be fixed to *dwangs* at 480 mm maximum centres in accordance with Table 24.

9.4.5.3 Corners

a) External corners

External corners shall be weatherproofed by the use of corner facings as shown in Figure 80.

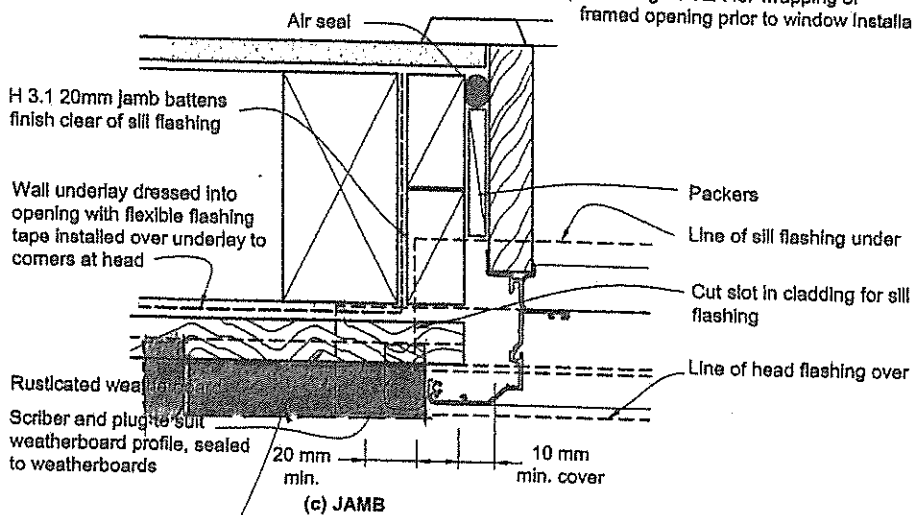
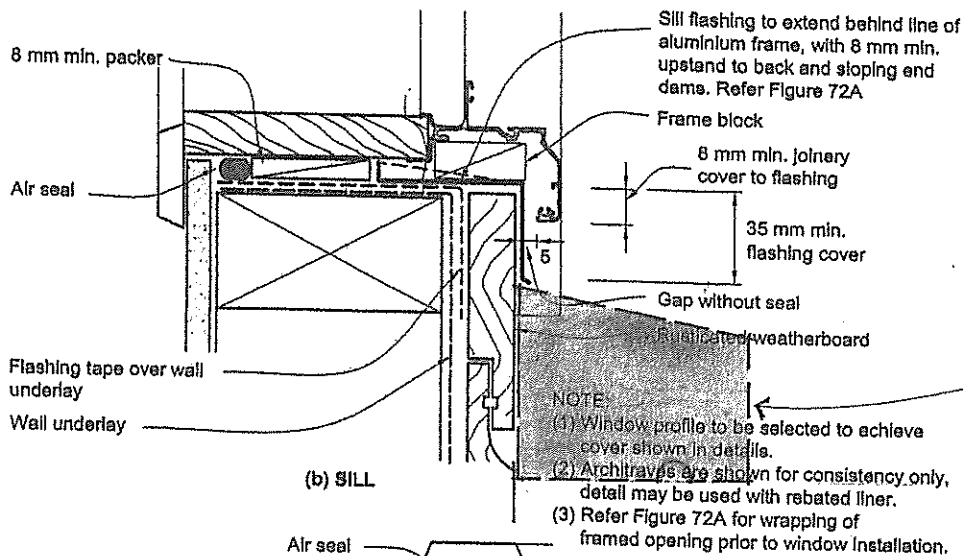
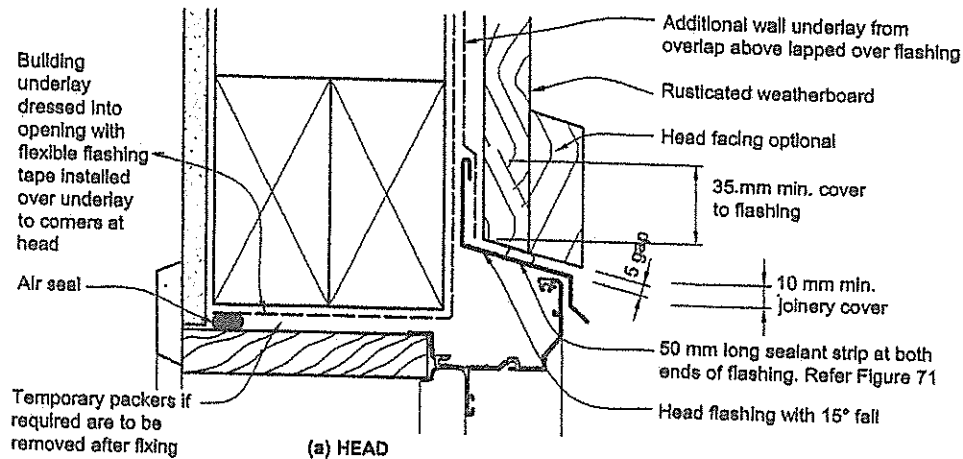
b) Internal corners

A corrosion-resistant corner *flashing*, as per Table 7 and Figure 79, shall be fitted behind the weatherboards at all internal corners.

Amend 5
Aug 2011

Amend 5
Aug 2011

Figure 82 Windows and doors for direct fixed rusticated weatherboards
Paragraph 1



H3.1 treated & preprimed
timber facing clwy scribe
& plug. - (shaded)

H3.1 treated & preprimed
timber facing clwy scribe
& plug. - (shaded)

AMENDED HEAD, SILL & JAMB FLASHING DETAILS
FOR DIRECT FIXED RUSTICATED WEATHERBOARDS

DENNY GARLAND HOUSE
31 Hakswell Street, Whangarei
February 2021

Dwg No 22

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9.1.10.7 Closed cell foam tape

Compressible foam tape shown behind window facings and *cladding* joints shall be closed cell PVC foam, with:

- a) Hardness 55-60 to ASTM D2240 Scale OO,
- b) Grade VE-43 to ASTM D1667,
- c) Compression set of 20% maximum to ASTM D1667, and
- d) UV weathering in UV Weatherometer for 1500 light hours to ASTM G154 or ASTM G155 with no visible deterioration in appearance.

9.1.10.8 Attachments for windows and doors

Install windows and doors using pairs of minimum 75 x 3.15 galvanised jolt head nails or 8 gauge x 65 mm stainless steel screws, through reveals into surrounding *framing* at:

- a) Maximum 450 mm centres along sills, jambs and heads, and
- b) Maximum 150 mm from reveal ends.

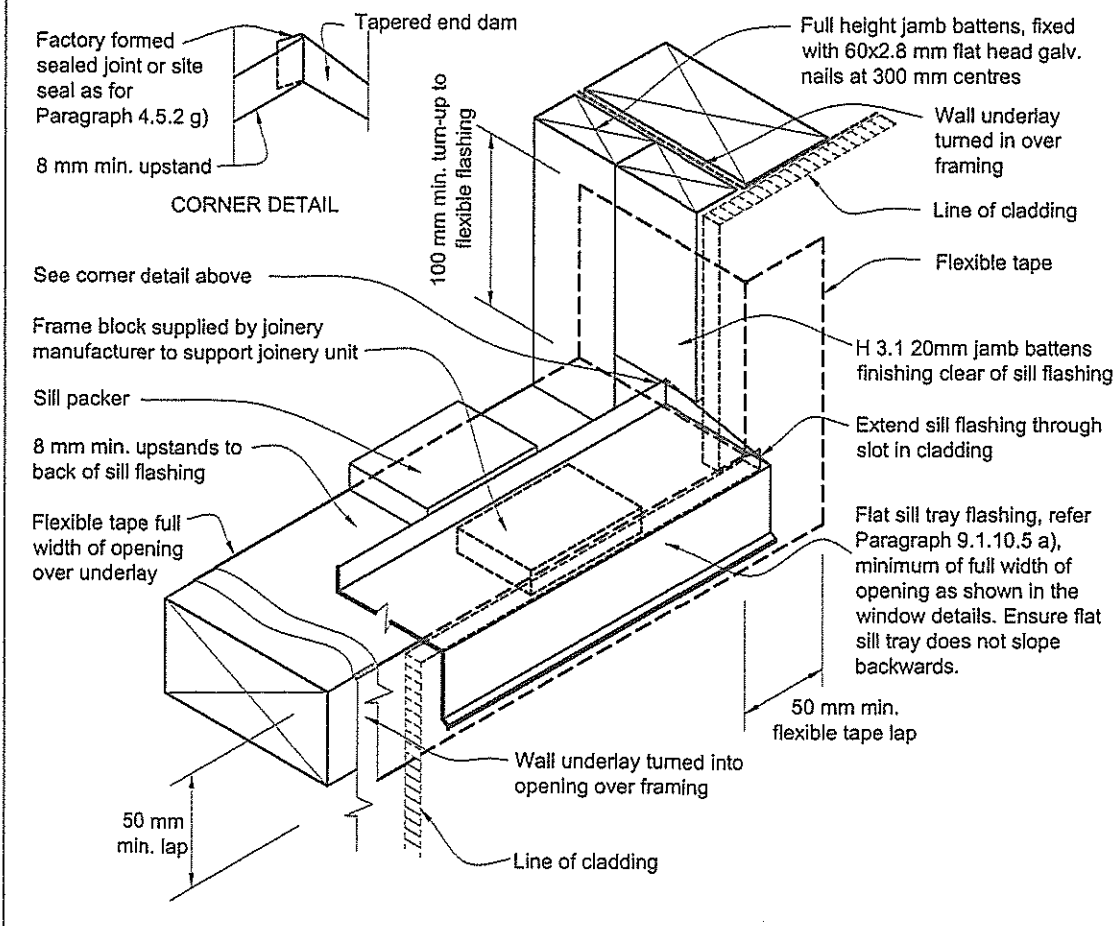
Install packers between reveals and *framing* at all fixing points, except between head reveals and lintels.

Amend 5
Aug 2011

Figure 72A: General window and door opening for direct fixed
Paragraphs 9.1.5, 9.1.10.2, Figures 81, 82, 83, 84, 90, 95 and 115

NOTE:

- (1) Detailed *cladding* omitted for clarity, refer to specific *claddings*.
- (2) *Sill flashing* shall extend back past the condensation channel of the window.
- (3) Head to be treated similarly with continuous *building underlay* and *flexible tape* at corners.
- (4) Refer individual *cladding* details for jamb flashings and sill tray return requirements

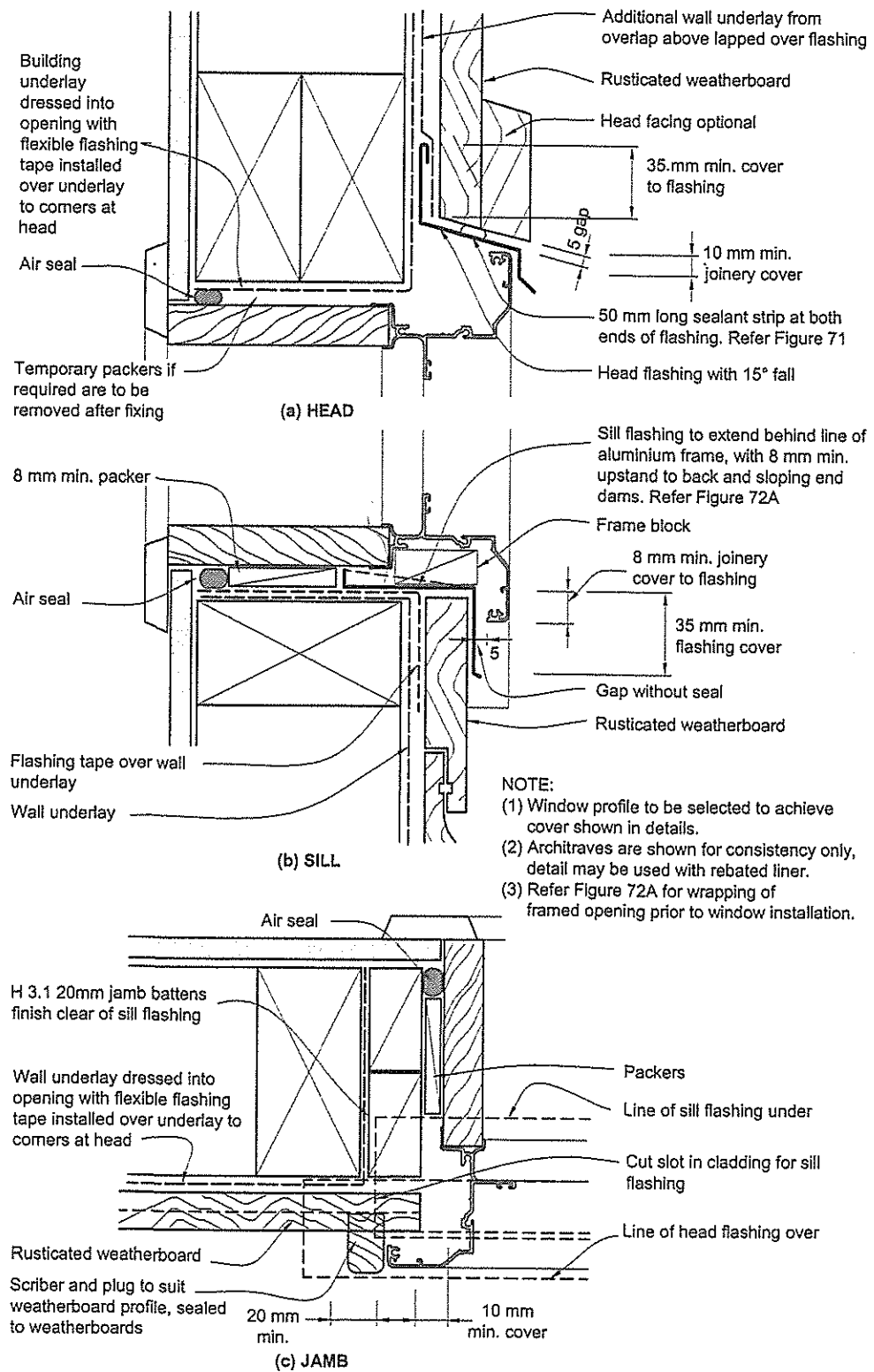


Errata 2
Dec 2011

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Amend 5
Aug 2011

Figure 82: Windows and doors for direct fixed rusticated weatherboards
Paragraph 9.4.6



Amend 5
Aug 2011

Amend 2
Jul 2005

Amend 2
Jul 2005**8.4 Profiled Metal Roof Cladding****8.4.1 Limitations**

This Acceptable Solution is limited to the following types of profiled metal roof cladding:

- a) Profiled as outlined in Paragraph 8.4.4,
- b) Valley gutters that do not change direction in plan,
- c) Not curved, and
- d) With sheets no more than 18 metres long.

Amend 5
Aug 2011**COMMENT:**

If curved profiled metal sheet is used, the radius of the curve may affect durability. Specific design is required, and manufacturers and the New Zealand Metal Roof and Wall Cladding Code of Practice should be consulted for recommendations.

Amend 2
Jul 2005**8.4.2 General**Amend 2
Jul 2005**COMMENT:**

Refer to Paragraph 1.5 for qualification of installers.

Amends
2 and 3**8.4.3 Materials****8.4.3.1 Choice of metal**

Metal roof cladding and flashings shall be selected according to the exposure conditions in Table 20 as defined in:

- a) NZS 3604, or
- b) AS/NZS 2728.

Amend 2
Jul 2005Amend 5
Aug 2011Amend 5
Aug 2011**COMMENT:**

The exposure zone in which a building is located can affect the durability of flashings.

Exposure zones are defined in NZS 3604, based on the likely exposure to wind-driven sea-salt. Corrosion due to geothermal or corrosive industrial atmospheres, as defined in NZS 3604, require specific design.

Exposure zones are based on AS/NZS 2728. AS/NZS 2728 lists atmospheric classes derived from ISO 9223 for Australia and New Zealand.

Amend 5
Aug 2011**8.4.3.2 Steel**

Materials for the manufacture of profiled steel roof cladding shall:

- a) have a BMT of 0.4 mm minimum
- b) be grade G550, or G300 for rolled, crimped, or trough profile roofing
- c) be selected for corrosion protection according to the intended exposure zone as shown in Table 20.

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Jul 2005**8.4.3.3 Aluminium**

Aluminium for the manufacture of profiled aluminium roofing shall comply with AS/NZS 1734, and be a minimum:

- a) Base metal thickness (BMT) of 0.7 mm,
- b) 5000 series.

Pre-painted aluminium roofing shall have a factory-applied finish complying with AS/NZS 2728.

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A deterioration in the appearance of the coating of the metal does not necessarily relate to a deterioration in the weathertightness of the roof cladding.

8.4.4 Profiles

Profiles covered in this Acceptable Solution are shown in Figure 38, and consist of:

- a) **Corrugated** – curved with a crest height of 16.5 mm minimum,
- b) **Trapezoidal** – symmetrical or asymmetrical with a minimum crest height of 19 mm, and for asymmetrical a flat or lightly profiled pan width of 210 mm maximum between crests, and
- c) **Trough profile** – with vertical ribs at a minimum height of 38 mm, and flat or lightly profiled pans of 210 mm maximum between crests.

8.4.5 Roof pitch

For *roofs* up to 18 metres in length without end laps, pitches shall be:

- a) Corrugated – not less than 8° (1:7).
- b) *Trapezoidal* – not less than:
 - i) 4° (1:14) where the crest height is less than 27 mm, or
 - ii) 3° (1:20) where the crest height is 27 mm or higher.
- c) *Trough profile* – not less than 3° (1:20).

COMMENT:

For *roofs* over 18 metres in length refer to the manufacturer for minimum pitch requirements. Where manufacturers have more stringent requirements, these should be followed to optimise performance and to avoid invalidating guarantees.

8.4.6 Structure

The maximum span and fixing patterns of profiled metal *roof cladding* between *purlins* to comply with this Acceptable Solution are given in Table 11, Table 12 or Table 13, 14 and 15. Spans shown are for steel with *BMT*, grade and profile as specified in each Table.

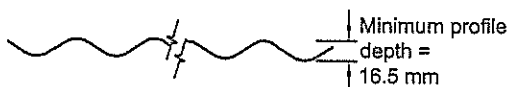
COMMENT:

For *purlin* sizes, spacing and fixing, refer to NZS 3604.

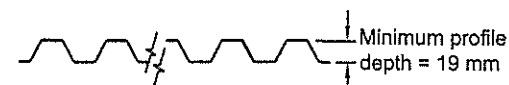
Additional support will be required around roof-mounted services such as air-conditioning in order to avoid roof distortion.

Figure 38: Profiled metal profiles
Paragraphs 8.4.4, 9.6.1, 9.6.5 and Table 3

NOTE: Tables 11 to 13 have limited profile requirements for given roofing spans.



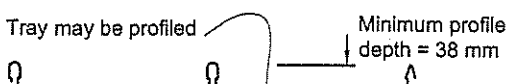
Corrugated Profile



Trapezoidal Profile (Symmetrical)



Trapezoidal Profile (Asymmetrical)



Trough Profile

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Table 11: Steel corrugate profiled roofing – 0.4 mm BMT and minimum profile height 16.5 mm
Maximum spans and fixing patterns. Refer to Paragraph 8.4.6

Purlin spacings (metres)		Wind zones		
End span	Intermediate span	Low and Medium	High and Very High	Extra High
0.4	0.6	C2	C2	C2
0.6	0.9	C2	C2	C1
0.8	1.2	C2	C1	C1

NOTE: C1 fixing pattern is – Hit 1, miss 1...

C2 fixing pattern is – Hit 1, miss 1, hit 1, miss 2...

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Table 12: Steel corrugate profiled roofing – 0.55 mm BMT with minimum profile height 16.5 mm
Maximum spans and fixing patterns. Refer to Paragraph 8.4.6

Purlin spacings (metres)		Wind zones		
End span	Intermediate span	Low and Medium	High and Very High	Extra High
0.4	0.6	C3	C3	C3
0.6	0.9	C3	C3	C3
0.8	1.2	C3	C3	C3
1.15	1.6	C3	C3	C2

NOTE: C2 fixing pattern is – Hit 1, miss 1, hit 1, miss 2...

C3 fixing pattern is – Hit 1, miss 2, hit 1, miss 3...

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Table 13: Steel trough profile roofing - 0.55 mm BMT with profile height 40 mm minimum, and pan width 210 mm maximum(2)
Maximum spans. Refer to Paragraph 8.4.6

All building wind zones
Maximum span of roof cladding
mm

End span	Intermediate span
1100	1600

NOTE: (1) Trough profile with 0.4 mm BMT steel is excluded from this Acceptable Solution
(2) For profile heights and pan widths outside this range, refer to supplier's literature for fixing patterns and spans

COMMENT:

Screw fixing is recommended for metal roofing as there is less likelihood of the fixing 'backing out' than with a nail.

The spacing requirements for fixings are conservative, and a specific design may produce a more optimum spacing, especially with the use of load-spreading washers. Consult roofing manufacturers for information.

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8.4.8.1 Fixing requirements

Fixings shall:

- Be fixed through crests,
- Penetrate *purlins* by a minimum of 40 mm for nail fixings and 30 mm for screw fixings,
- Include sealing washers of:
 - neoprene (having a carbon black content of 15% or less by weight),
 - profiled washer and EPDM washer where required to allow for expansion of the profiled metal roof cladding.

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COMMENT:

It is recommended that access to the roof is limited to within 100 mm of purlin lines to avoid damaging the roof cladding.

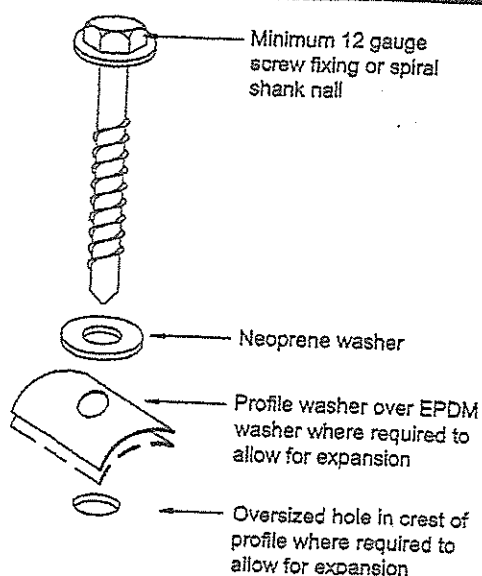
8.4.7 Underlay

All profiled metal long-run roofing shall have a roof underlay installed to Table 23. See Paragraph 8.1.5 for installation details.

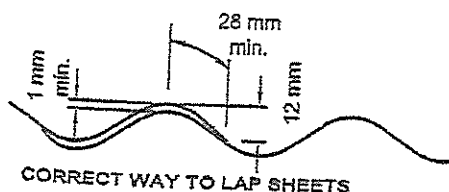
8.4.8 Fixings: corrugated and trapezoidal

Fixings shall be as shown in Tables 11, 12, 14 and 15, and shall be a minimum 12-gauge screw, as shown in Figure 39, which complies with Class 4 of AS 3566: Part 2.

Figure 39: Corrugated and trapezoidal fixings and sheet lap
Paragraphs 8.4.8, 9.6.6, Tables 20, 22 and 24



TYPE OF FIXING FOR PROFILED METAL ROOFING



CORRECT WAY TO LAP SHEETS

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Table 14: Steel trapezoidal profiled roofing – 0.4 mm BMT and profile height 27 mm minimum(1), and minimum 5-rib profiles
Maximum spans and fixing patterns. Refer to Paragraph 8.4.6

Purlin spacings (metres)		Wind zones		
End span	Intermediate span	Low and Medium	High and Very High	Extra High
0.4	0.6	T2	T2	T1
0.6	0.9	T2	T1	T1
0.8	1.2	T2	T1	T1
1.2	1.8	SED	SED	SED

NOTE: T1 fixing pattern is – Fix every crest...

T2 fixing pattern is – Hit 1, miss 1...

SED Specific Engineering Design

(1) For profile heights and pan widths outside this range, refer to supplier's literature for fixing patterns and spans

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Table 15: Steel trapezoidal profiled roofing – 0.55 mm BMT, profile height 27 mm minimum(1) and minimum 5-rib profiles
Maximum spans and fixing patterns. Refer to Paragraph 8.4.6

Purlin spacings (metres)		Wind zones		
End span	Intermediate span	Low and Medium	High and Very High	Extra High
0.4	0.6	T2	T2	T2
0.6	0.9	T2	T2	T2
0.8	1.2	T2	T2	T2
1.2	1.8	T2	T1	T1

NOTE: T1 fixing pattern is – Fix every crest...

T2 fixing pattern is – Hit 1, miss 1...

(1) For profile heights and pan widths outside this range, refer to supplier's literature for fixing patterns and spans

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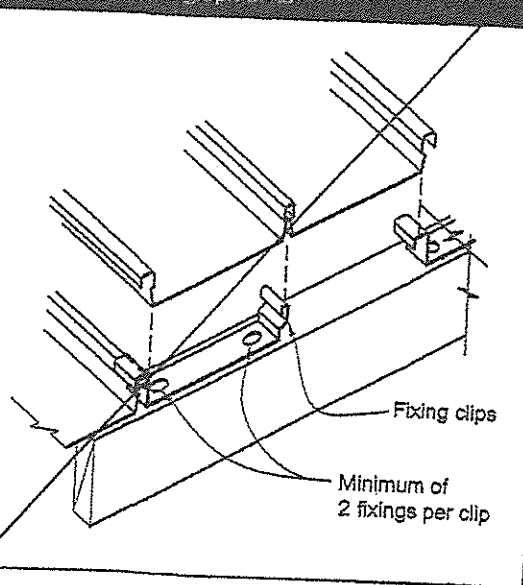
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8.4.9 Fixings: trough profile

Clip fixings for *trough profiles* and spans as shown in Table 13 shall be as shown in Figure 40, and shall:

- Have a minimum *BMT* of 0.9 mm
- Be a minimum width of 30 mm
- Be made from a material compatible with the *cladding*, refer to Tables 20 and 21
- Have clips fastened with a minimum of two 10-gauge by 30 mm waferhead hot-dipped galvanised screws which comply with Class 3 of AS 3566: Part 2.

Figure 40. Typical trough profile fixings
Paragraph 8.4.9



8.4.10 Allowance for expansion

Allowance shall be made for expansion of corrugated and *trapezoidal roof cladding* as shown in Table 16.

Where Table 16 requires profiled washers, allowance shall be made for expansion by:

- Fixing the top 50% (closest to the ridge) with conventional fixings, and
- Fixing the lower 50% with sealing washers fixed over profiled washers as shown in Figure 39, and:
 - using oversized holes, and
 - positioning fixing in centre of hole.

Table 16: Expansion provisions
Paragraph 8.4.10, Figure 39

Material	< 8 m	8-12 m	12-18 m	> 18 m
Steel	NSR	Profiled washers	Profiled washers	SD
Aluminium	Oversized holes	Profiled washers	SD	SD

SD – Requires specific design
NSR – No special requirements

8.4.11 Flashing requirements

The roofing shall be flashed at all boundaries to comply with the following:

- At edges discharging to gutters with *eaves flashings* where required in Figure 45(a)
- Soft edge to cover *flashings* complying with Paragraph 4.6. Refer to Figure 41 for example of use and Tables 21 and 22.
- Notched turn-downs to cover *flashings* shall comply with Paragraph 4.6. Refer to Figure 42 for example of use.
- Materials for *flashings* shall be compatible with the *roof cladding* material as per Table 21 and Table 22, and shall be in accordance with Paragraph 4.3.
- Provide *expansion joints* in accordance with Paragraph 4.5.2.

8.4.11.1 Fixing flashings

- When fixing *flashings* to the structure, use screws as for roofing (see Paragraph 8.4.8).

b) When fixing *flashings* to other *flashings* or to roofing use:

- i) for galvanized steel, 4 mm diameter monel metal or stainless steel rivets, where compatible as per Table 21,
- ii) for aluminium-zinc coated steel, 4 mm diameter aluminium rivets,
- iii) for aluminium, 4 mm diameter aluminium rivets.

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COMMENT:

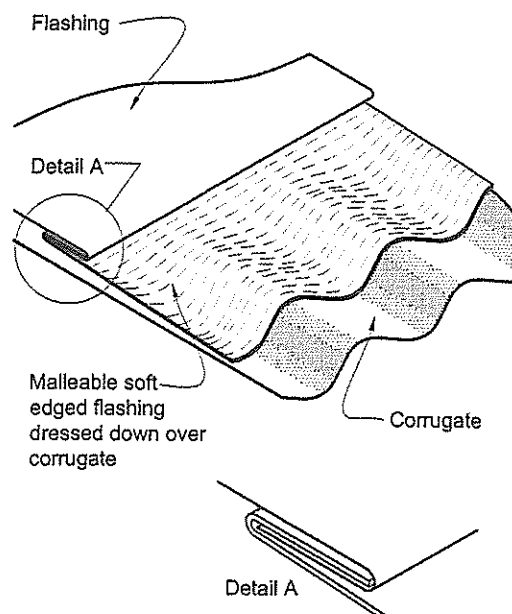
The use of stainless steel fixings is not recommended by steel manufacturers for use with coated steel, in severe marine and industrial environments, as they are considered to cause deterioration.

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- c) *Flashing* joints, including *expansion joints* where required, shall be in accordance with Paragraph 4.5.2 and as shown in Figure 6.
- d) Where end-laps are required in *flashings*, form these as shown in Figure 6 and, before joining the two parts, apply an 8 mm diameter bead of neutral cure sealant complying with:
 - i) Type F, Class 20LM or 25LM of ISO 11600, or
 - ii) low modulus Type II Class A of Federal Specification TT-S-00230C.

Figure 41: Soft edge flashing
Paragraphs 4.6, 8.4.12 and 8.4.11

NOTE: *Apron flashing* cover varies according to wind zone - refer Table 7.

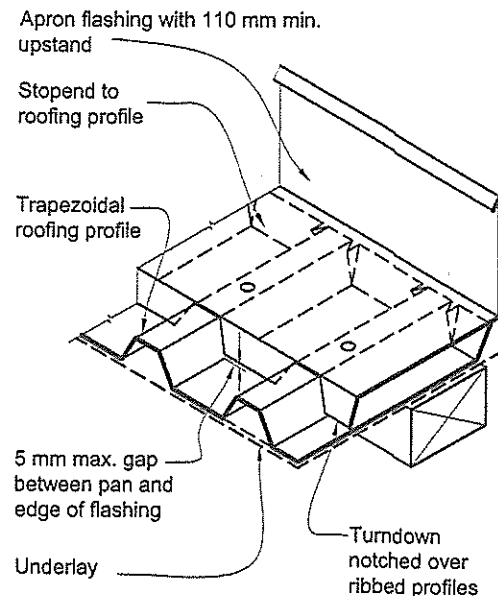


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Figure 42: Trapezoidal notched flashing
Paragraphs 4.5, 8.4.11 and 8.4.12

NOTE: *Apron flashing* cover varies according to wind zone - refer Table 7.



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8.4.12 Flashing details

The roof shall be flashed using details shown below:

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a) Ridge to hip as shown in Figure 43,

b) *Apron flashing* and change in pitch as shown in Figure 44,

c) *Eaves* and roof/wall ridge as shown in Figure 45,

d) *Eaves flashing* as in Figure 45(a) required for all roofs under 10° pitch and soffit widths less than 100 mm,

e) Ridge and hip as shown in Figure 46,

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f) *Barge flashings* as shown in Figure 47,

g) *Apron flashing – parallel flashing* to profile as shown in Figure 48.

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COMMENT:

Reduced cover for barge and apron flashings may be applicable for specifically designed roofs in low wind zones.

Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for additional guidance on ridge to hip flashings.

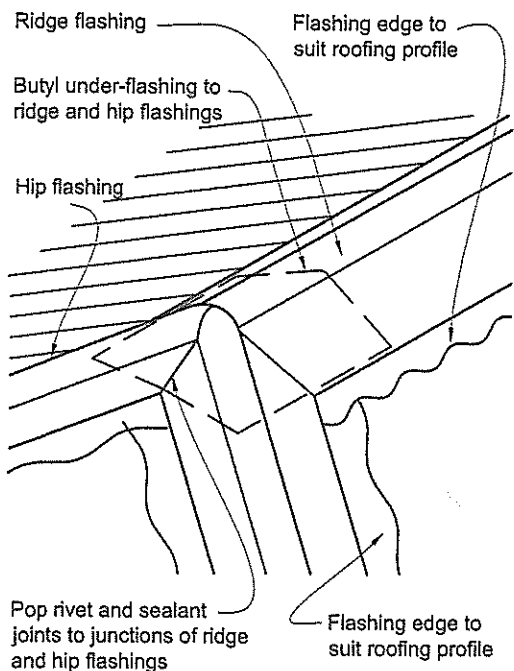
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Figure 43: Ridge to hip flashings

Paragraphs 8.4.11 and 8.4.12

NOTE: Flashing cover varies according to wind zone - refer Table 7.
For other ridge to hip flashings refer to New Zealand Metal Roofing and Wall Cladding Code of Practice.



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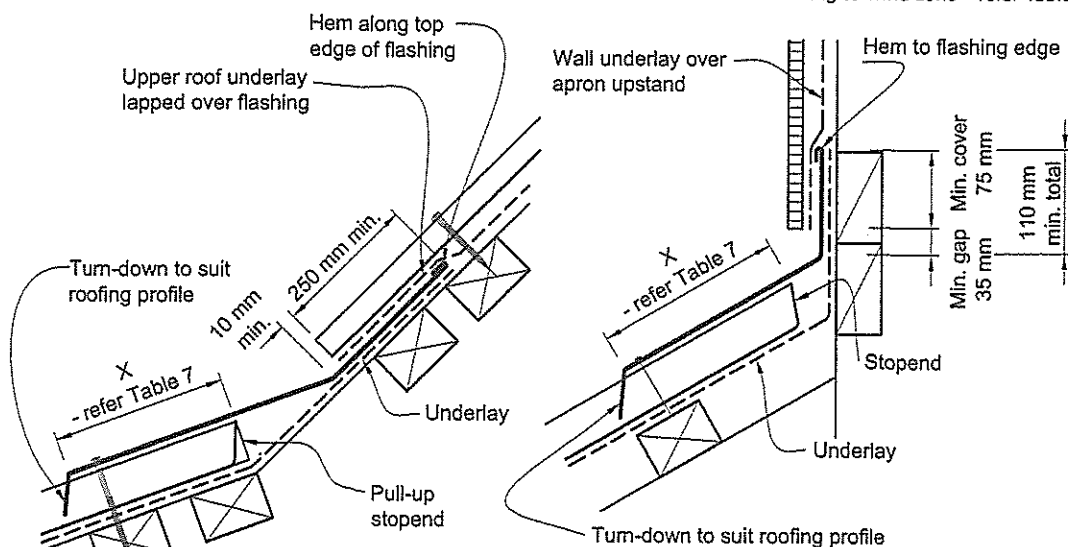
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Figure 44: Apron flashing and change in pitch for profiled metal

Paragraphs 4.5, 8.4.11, 8.4.12, Table 7

NOTE: X = variable according to wind zone - refer Table 7.



(a) CHANGE IN PITCH

(b) APRON FLASHING

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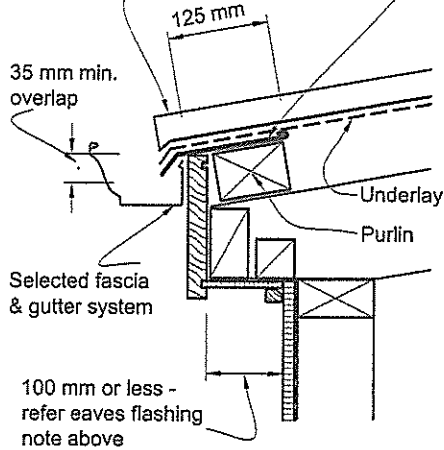
Errata 2
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Figure 45: Eaves and roof/wall ridge for profiled metal
Paragraphs 4.5, 8.4.11, 8.4.12, Table 7

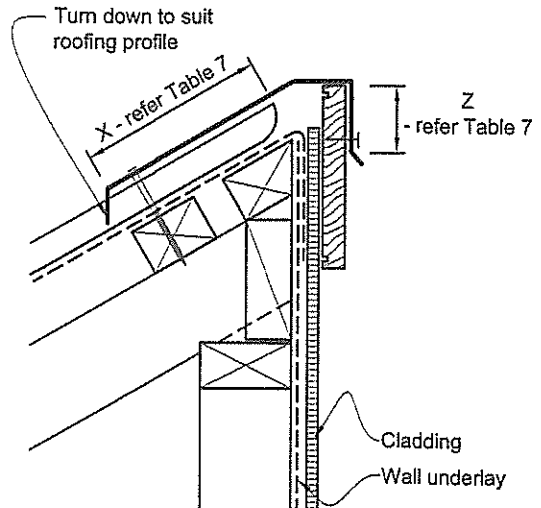
Eave flashing required where all of the following conditions are met:

- Roof slope less than or equal to 10°, and
- soffit width less than or equal to 100 mm, and
- wind zones are Very High or Extra High

Profiled metal roofing



(a) EAVE



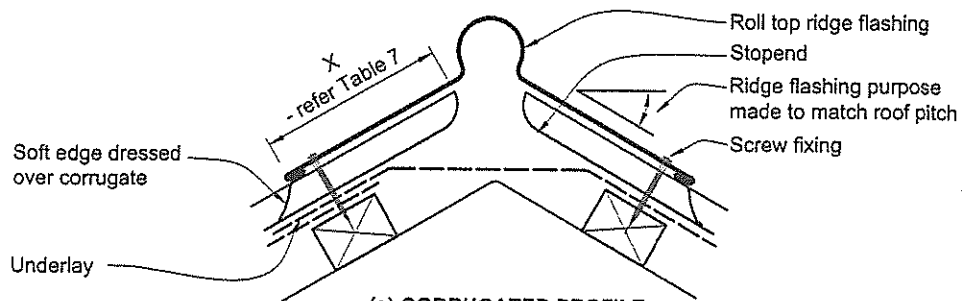
(b) ROOF / WALL RIDGE

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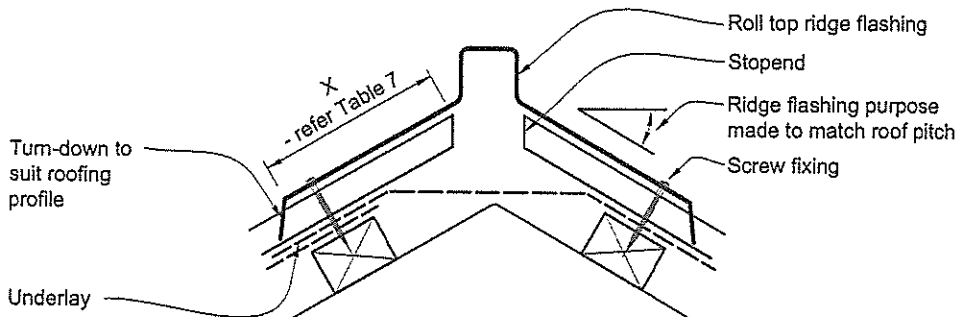
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Figure 46: Ridge and hip flashings for profiled metal
Paragraphs 4.4, 4.5, 8.4.11, 8.4.12, Table 7



(a) CORRUGATED PROFILE

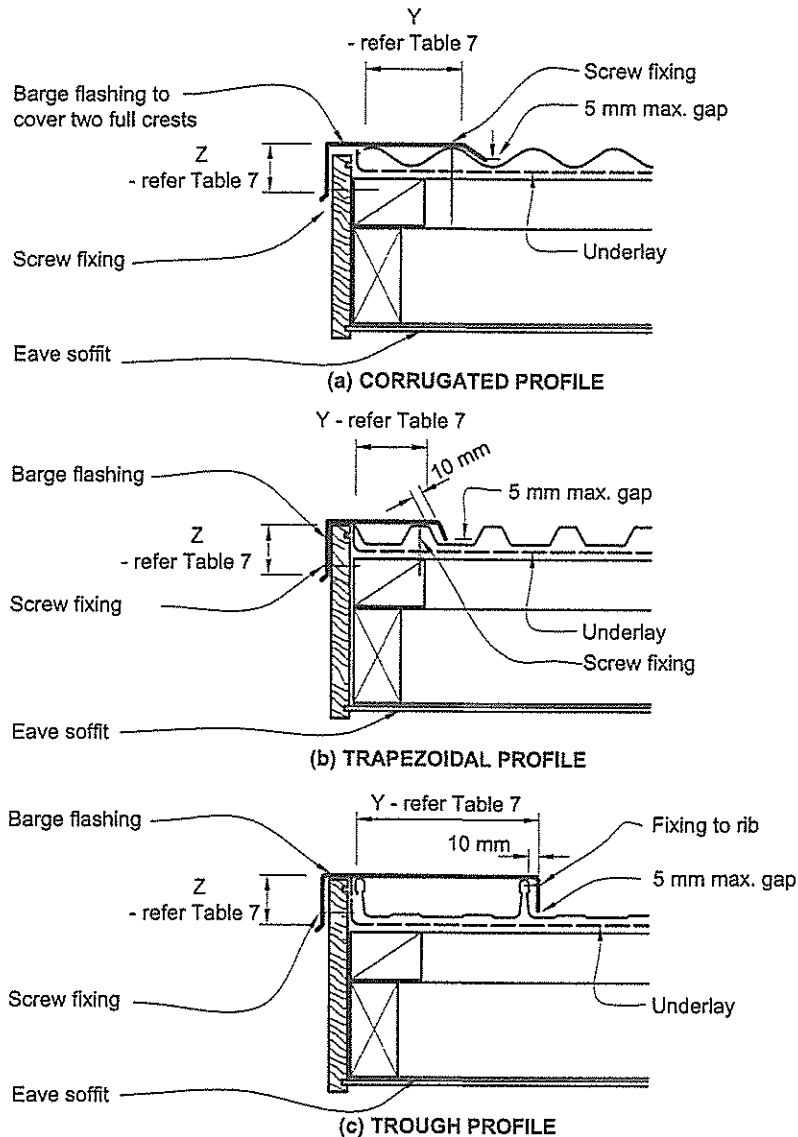


(b) TRAPEZOIDAL PROFILE

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Figure 47: Barge flashings for profiled metal
Paragraphs 8.4.11, 8.4.12, Table 7



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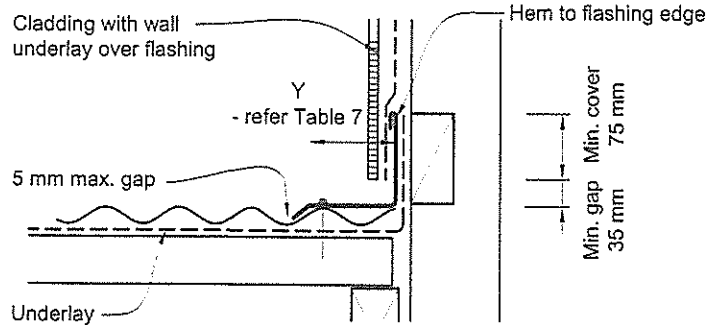
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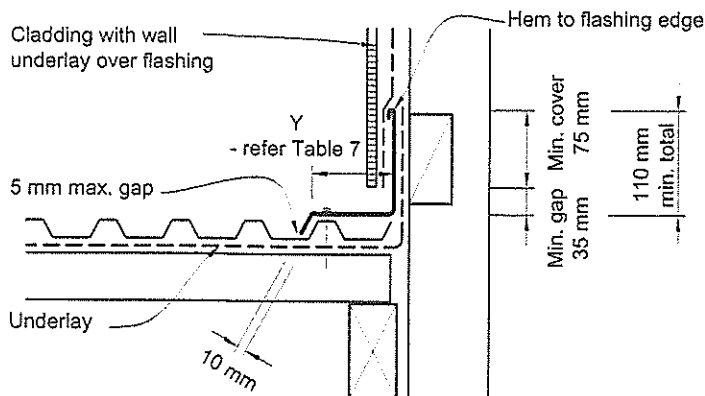
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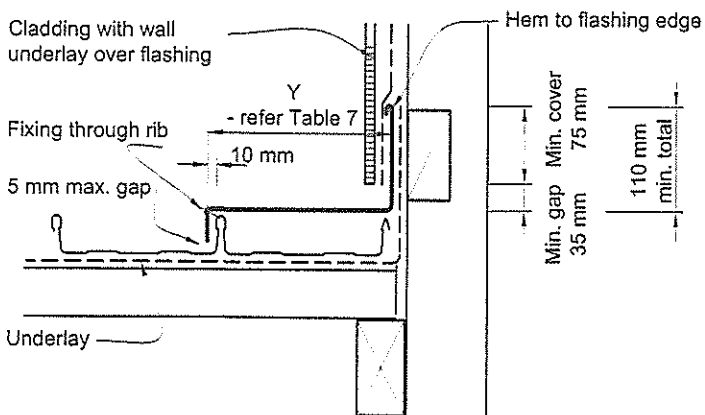
Figure 48: Parallel apron flashings for profiled metal
Paragraphs 8.4.11, 8.4.12, Table 7



(a) CORRUGATED PROFILE



(b) TRAPEZOIDAL PROFILE



(c) TROUGH PROFILE

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8.4.13 Stopends

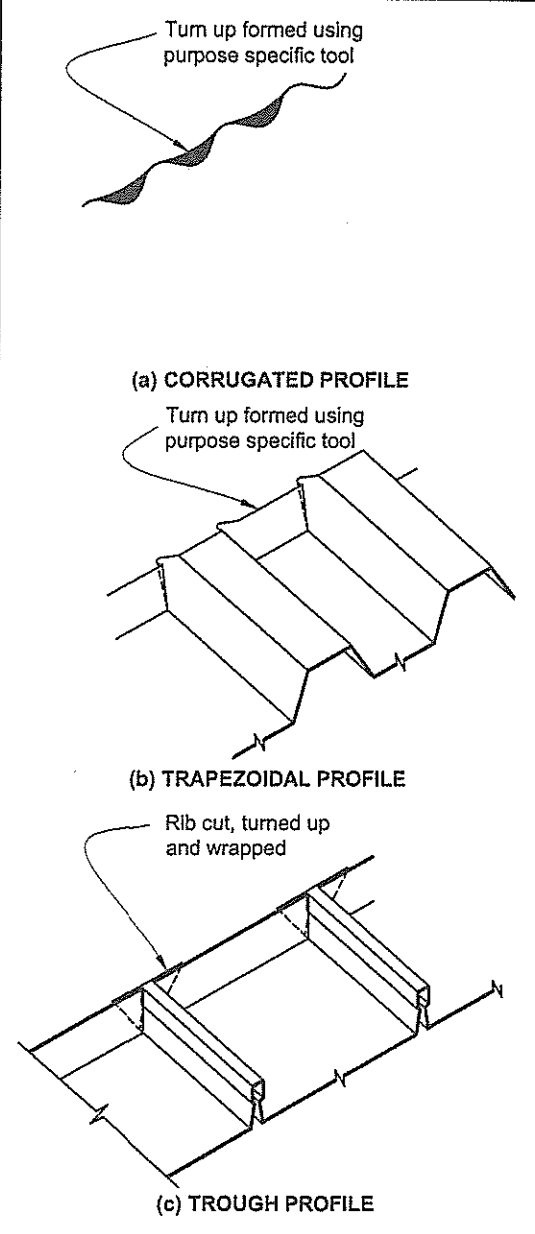
The top ends of profiled metal roof *cladding* shall have *stopends* as shown in Figure 49 for *trapezoidal* and *trough* profile metal roof *cladding*, where:

- The *roof pitch* is less than 25°, or
- The *building* is in a High/Very High/Extra High *wind zone*.

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Figure 49: Profiled metal stopends
Paragraph 8.4.13, Figure 92



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8.4.14 Turn-downs at gutters

The lower ends of *trapezoidal* and *trough* profile roofing shall be turned down at gutters, where the *roof pitch* is less than 10°.

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The turn-down shall be 30° from the plane of the sheet.

COMMENT:

Specific tools are available and should be used to turn up or turn down ends. Care should be taken to ensure the sheet does not split.

Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for guidance on methods.

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8.4.15 Profile closure

Preformed compressible seals shall not be used at the *eaves*.

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COMMENT:

Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for guidance.

8.4.16 Hidden, valley and internal gutters

Hidden, *valley* and internal *gutters* shall be in accordance with Paragraph 8.1.6.

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8.4.16.1 Hidden gutters

Parallel *hidden gutters* shall be as shown in Figure 50 and Paragraph 8.1.6.2.

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8.4.16.2 Valley gutters

Valley gutters shall be in accordance with catchment areas shown in Table 8, and as shown in Figure 51 and Paragraph 8.1.6.2.

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COMMENT:

Refer to the New Zealand Metal Roof and Wall Cladding Code of Practice for additional guidance on sizing, materials and fixing.

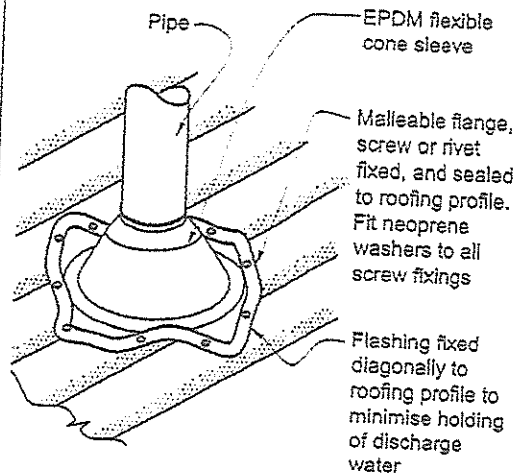
8.4.16.3 Internal gutters

Internal gutters shall be as shown in Figure 52 and Paragraph 8.1.6.1.

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Figure 53: Flashing for small pipes
Paragraphs 8.3.10, 8.4.17, 9.6.6.5
and 9.6.9.6



NOTE:

- (1) Max. roof pitch for this flashing 45°, minimum pitch 10° if base of flange covers one or more complete troughs.
- (2) For pipes up to 85 mm diameter.

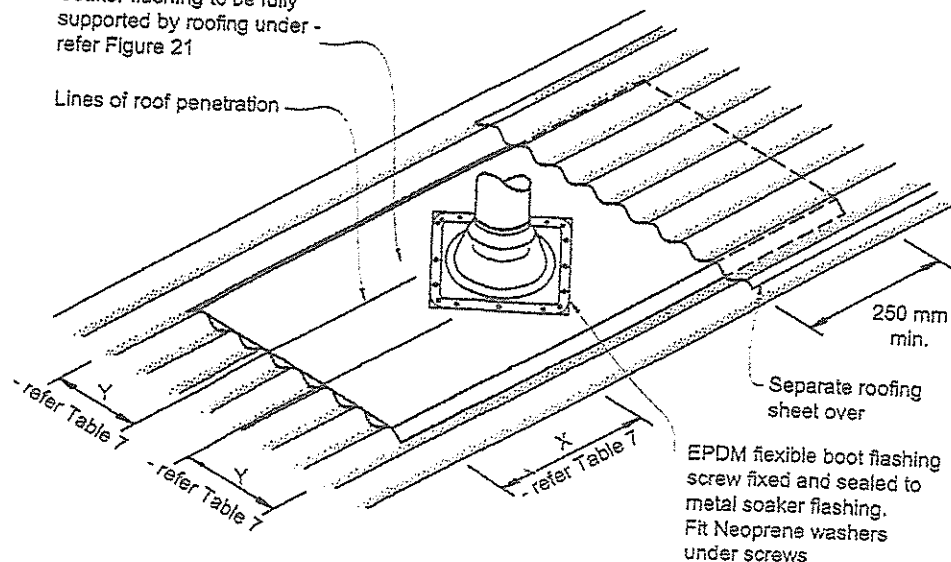
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Figure 54: Soaker flashing for pipe penetrations
Paragraph 8.4.17

- NOTE:** (1) Suitable for pipes from 86 mm to 500 mm diameter.
(2) Suitable only for roof pitches of 10° or more.

Soaker flashing to be fully supported by roofing under - refer Figure 21

Lines of roof penetration



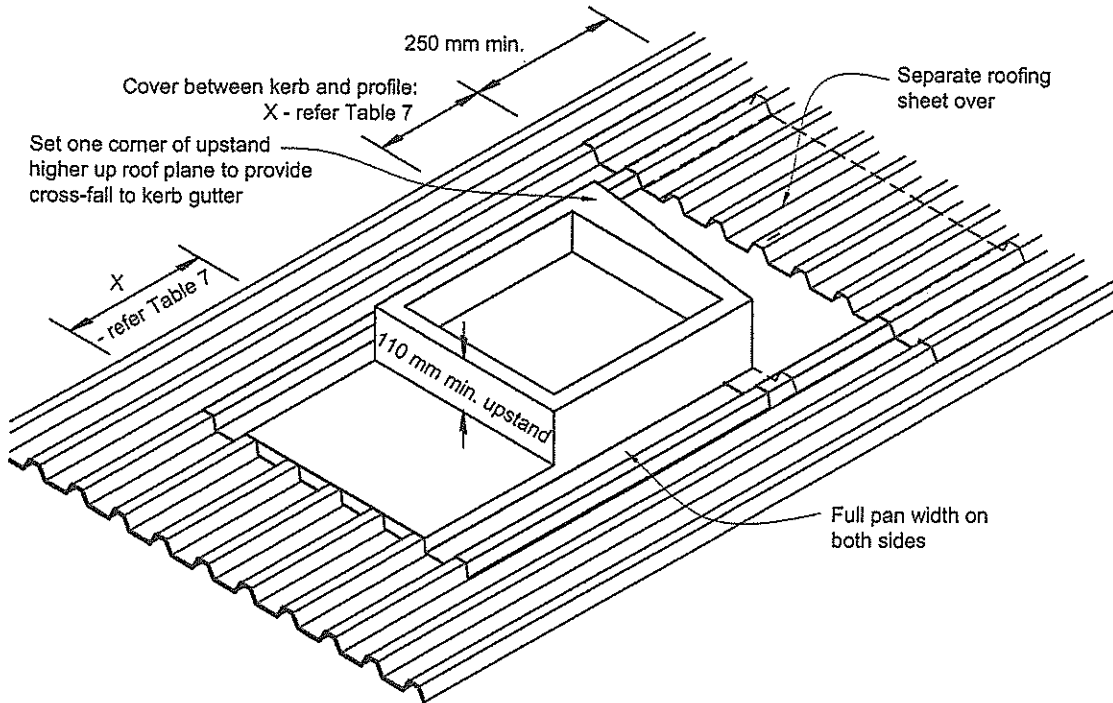
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Figure 55: Soaker flashing for other penetrations
Paragraph 8.4.17, Table 17

NOTE: (1) Suitable for penetrations up to 1200 mm wide.
(2) Suitable only for roof pitches of 10° or higher.



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4.6.1 Overlap with roof claddings**4.6.1.1 Apron flashing cover over metal roofing****a) Transverse flashing:**

Refer to Figure 7 for example of use. The apron shall have:

- i) for notched turn-downs, a gap between the *flashing* and the pan of the *roof cladding*. The gap shall be a maximum of 5 mm, and
- ii) a minimum effective cover to *roof cladding*, excluding any *soft edge* or turn-down to the *flashing*, as shown in Table 7.

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b) Parallel flashing:

Refer to Figure 48 for example of use. The apron shall:

- i) be dimensioned to suit the *roof cladding* profile,
- ii) for profiled metal *roof cladding*, cover at least two crests, (turned-up edge to full crest height constitutes a crest), and
- iii) for profiled metal *roof cladding*, overhang *flashing* a minimum 10 mm clear of crest and maximum 5 mm clear of trough as shown in Figure 47.

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4.6.1.2 Ridges and hips

Refer to Figure 46 for example of use.

- a) For notched turn-downs of the *flashing* leave a gap between the *flashing* and the *roof cladding*. The gap shall be a maximum of 5 mm.
- b) There shall be a minimum effective cover to *roof cladding*, excluding any *soft edge* or turn-down to the *flashing*, in accordance with Table 7.

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4.6.1.3 Change in metal roof pitches

Refer to Figure 44 for example of use.

- a) There shall be a minimum effective lap under *roof cladding* in accordance with Table 7, with a *hem* at upper edge.
- b) The apron cover over the *roof cladding* shall be in accordance with Table 7.

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4.6.1.4 Roof- or deck-to-wall junctions

Refer to Figure 7 for example of use.

- a) There shall be a total minimum upstand height of 110 mm, in accordance with Table 7, comprising a minimum:
- overlap cover of *cladding* to the *flashing* upstand of 75 mm, and
 - 35 mm clearance from bottom of the wall *cladding* to *roof cladding* or finished *deck* material.

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Table 7: Metal flashings – general dimensions

Paragraphs 4.6, 4.6.1.1, 4.6.1.2, 4.6.1.3, 4.6.1.4, 4.6.1.5, 4.6.1.6, 4.6.1.7, 5.1, 6.4, 6.5, 7.4.4, 8.3.8, 9.1.3, 9.1.10.2, 9.1.10.4 and 9.4.5.3

Type	Description	All (1)	Situation 1 (2) minimum mm	Situation 2 (3) minimum mm	Situation 3 (3a) minimum mm	Figure reference (as example)
Aprons: general	<i>Transverse flashing</i> over roofing		130 (4)	200 (4)	200 mm	Figure 7 and Figure 44 (X values)
	<i>Parallel flashing</i> over roofing		Two crests, finish in next trough – refer 4.6.1.1b)			Figures 47, 48 (Y values)
Ridges/ hips	<i>Transverse flashing</i> over roofing		Refer Aprons: general			Figures 43, 45b, 46
Changes in roof pitches	Upper lap under roofing	250 mm min.			Not permitted under E2/AS1	Figure 44
	<i>Transverse flashing</i> over roofing		Refer Aprons: general			
Barges	Overlap to barge board		50 (8)	70 (8)	90 mm	Figure 47 (Z values)
Cappings	Overlaps to <i>cladding</i>		50 (8)	70 (8)	90 mm	Figure 10 (Z values)
	Slope to top: <i>parapet</i> and balustrade – metal capping	5° min.				Figures 10, 11, 12, 130
	Slope to balustrade – <i>flush-finished EIFS</i> and fibre cement(5)	10° min.				Figures 117, 129, 130
Roof or Deck to Wall	Overlaps to roofing		-Refer Aprons: general			
– See membranes below	Lap under <i>cladding</i> above	75 mm min.			90 mm	Figures 7, 26, 30, 35, 37, 44, 48, 50
	Clearance below <i>cladding</i>	35 mm min.				
	Total upstand	110 mm min.				

Amend 6
Aug 2011

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Table 7: continued Metal flashings – general dimensions
Paragraphs 4.6, 4.6.1.1, 4.6.1.2, 4.6.1.3, 4.6.1.4, 4.6.1.5, 4.6.1.6, 4.6.1.7, 5.1, 6.4, 6.5, 7.4.4, 8.3.8, 9.1.3, 9.1.10.2, 9.1.10.4 and 9.4.5.3

Membrane roofs and decks		Lap under cladding above				Figures 18, 62a, c, 64b
Type	Description	All (1)	Situation 1 (2) minimum mm	Situation 2 (3) minimum mm	Situation 3 (3a) minimum mm	Figure reference (as example)
Windows	Window flange clearance for <i>direct fixed claddings</i> and ply or fibre cement on cavities	5 mm				Eg. Figure 81
	Cover to window/door jamb flange	10 mm(7) min.				Eg. Figure 81c
	Cover to window/door sill flange	8 mm(7) min.				Eg. Figure 81c
Sills	Sill <i>flashing</i> slope (6)	Flat(6)				Eg. Figures 72a, 81b
Heads	Head <i>flashing</i> slope	15° min.				Eg. Figure 81a
	Lap under <i>cladding</i> above	35 mm min.			60 mm	Eg. Figure 81a
	Anti-capillary gap to <i>cladding</i>	5 mm				Eg. Figure 81a
	Total upstand	40 mm min.				
Corners	Corner <i>flashings</i> (1)	50 mm x 50 mm minimum			75 x 75 mm	Eg. Figure 79
Inter-storey junctions	Junction <i>flashing</i> : slope	15° min.				
	Lap over <i>cladding</i> below (1)	35 mm min.(8)			60 mm	Figure 70
	Lap under <i>cladding</i> above	35 mm min.			60 mm	
	Clearance under <i>cladding</i>	5 mm min.				
	Total upstand	40 mm min.				

NOTES: (1) Unless otherwise dimensioned in details.

(2) **Situation 1:** Low, Medium, High *wind zones*, where roof pitch $\geq 10^\circ$ (X or Z values)

(3) **Situation 2:** All roof pitches in Very High *wind zones*,
Low, Medium and High *wind zones* where roof pitch $\leq 10^\circ$. (X or Z values)

(3a) **Situation 3:** For all roof pitches in Extra High *wind zone*.

(4) Excluding any *soft edge* or turn-down to roofing.

(5) For *buildings* other than housing, slope shall be as per F4/AS1.

(6) For *direct fixed* window/doors, unless shown. Sill *flashing* must extend past the condensation channel. Ensure sill *flashings* are not installed with backwards slope.

(7) Excluding *drip edge*.

(8) Excluding *drip edge*.

Amend 5
Aug 2011

Amend 5
Aug 2011

Amend 2
Jul 2005

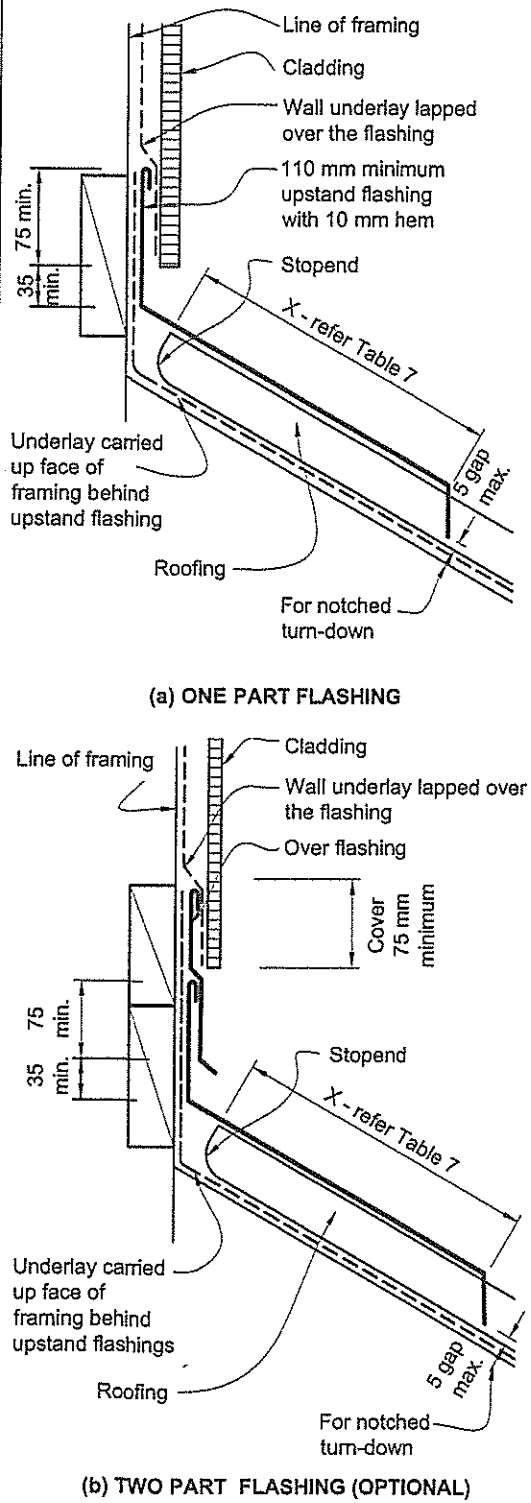
Errata 2
Dec 2011

Amend 5
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Figure 7: Basic apron flashing
Paragraphs 4.6.1.1, 4.6.1.4, 5.1, 8.3.8 and Table 7

NOTE: *Stopends* to profiled metal - refer Figure 49



4.6.1.5 Barges

Refer to Figure 47 for example of use.

- There shall be a minimum effective overlap to the barge board, excluding the *drip edge* to the *flashing*, in accordance with Table 7.
- The apron cover over the *roof cladding* shall be as for Paragraph 4.6.1.1.

4.6.1.6 Window and door heads

Refer to Figures 71 and 81 for example of use.

- Slopes and covers of *flashings* at window and door heads shall comply with Table 7.
- Overlap cover of *cladding* to the *flashing* upstand and clearance from the bottom of the *cladding* to top of head *flashing* slope shall be in accordance with Table 7.
- Details for door heads shall be based on those applying to windows.

4.6.1.7 Inter-storey junctions

Refer to Paragraph 9.1.9.4 and Figure 70.

- Minimum slopes and covers of *flashings* shall be in accordance with Table 7.
- Overlap cover of the *cladding* to the *flashing* upstand, and clearance from the bottom of the *cladding* to the top of the slope of the head *flashing*, shall be in accordance with Table 7.

5.0 Roof/Wall Junctions

5.1 Apron flashings

Refer Paragraph 4.3 for acceptable *apron flashing* materials.

All roof-to-wall junctions shall be made *weathertight* by using an *apron flashing* as outlined in Paragraph 4.6.1.1, and shown in Figure 7, that:

- Provides a minimum lap under the *wall cladding* of 75 mm in accordance with Table 7, except that:
 - pressed metal tiles shall have a *flashing* fitted to achieve the minimum required overlap of *wall cladding*, as shown in Figure 35,

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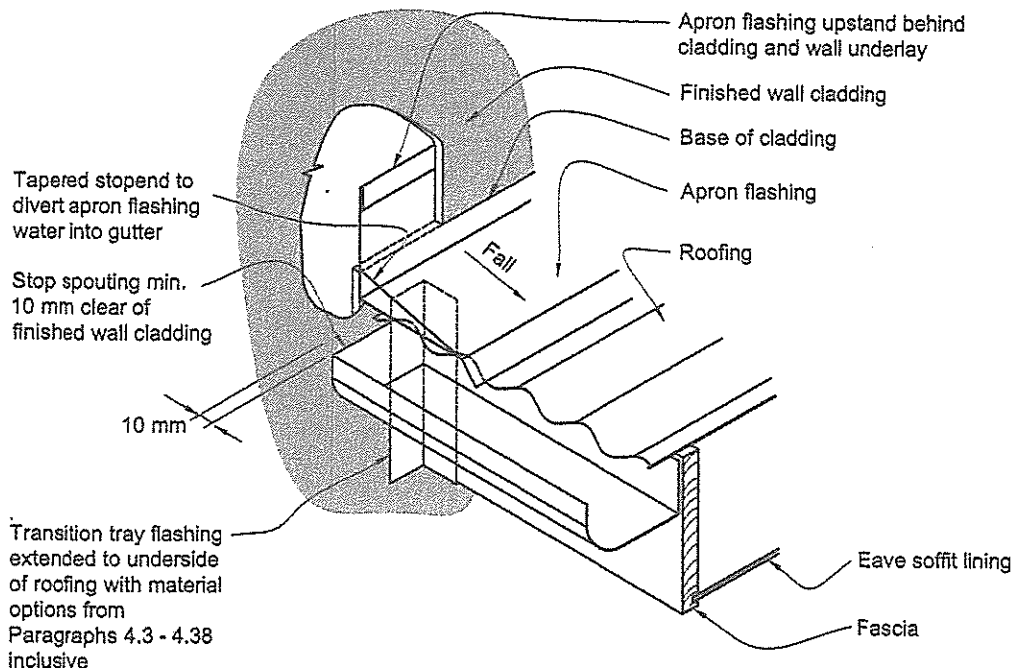
Amend 5
Aug 2011

Amend 2
Jul 2005

Amend 2
Jul 2005

Figure 8B: Gutter/wall junction
Paragraphs 5.1 and 5.2

- NOTE: (1) The upstand at the lower edge of the *apron flashing* may be preformed to a larger size and then trimmed on site to suit.
(2) The *transition flashing* bridges gap at the end of the fascia to protect the soffit *framing*.
(3) *Wall underlay* omitted for clarity.



Amend 5
Aug 2011

5.2 Gutters, barges and fascias

Amend 5
Aug 2011

Where *eaves* gutters/spoutings, barges or fascias terminate against *claddings*, these shall be installed after the *wall cladding*, and after any protective finishes have been applied.

Amend 5
Aug 2011

Eaves gutters/spouting, barges and fascias shall terminate so as to leave a gap of 10 mm from the finished *wall cladding* as shown in Figure 8B.

COMMENT:

It is important to ensure the *wall cladding* behind *eaves* gutters/spoutings, barges and fascias is protected by the surface coating to prevent moisture penetration through the unsealed *cladding*.

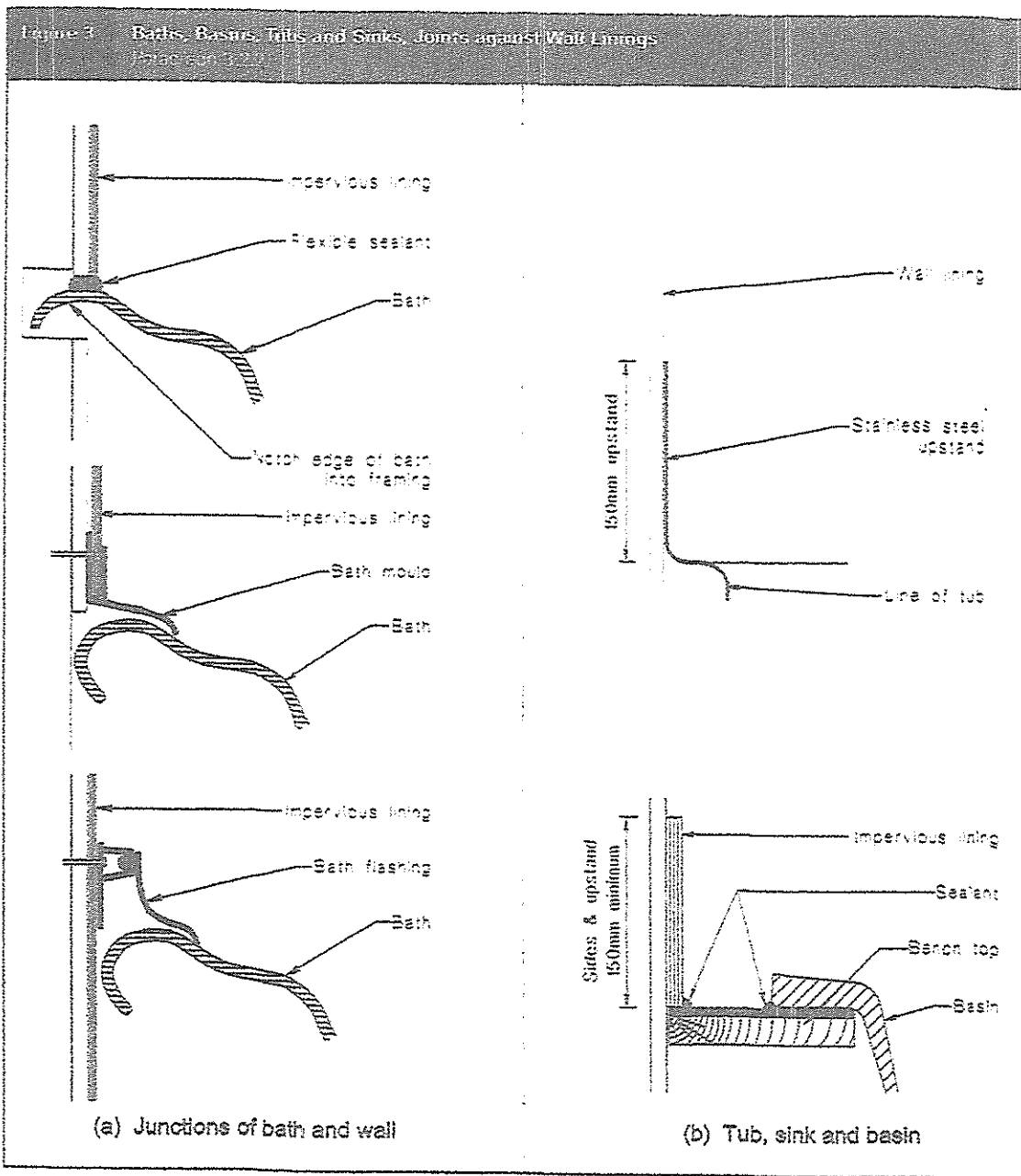
Amend 5
Aug 2011

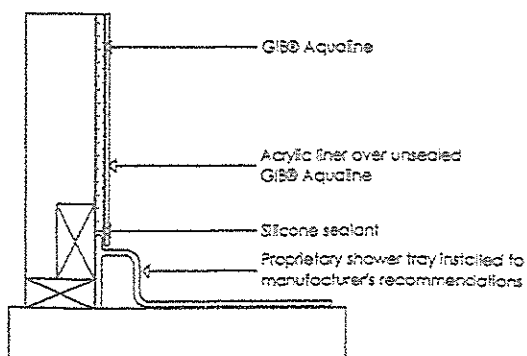
5.3 Soffits

Eaves shall be enclosed by installing soffit *linings* direct fixed to *framing* and comprising minimum 4.5 mm fibre cement sheet, or 7 mm H3 plywood, with joints, fixings and finishes as shown in Paragraphs 9.7 and 9.8. Soffit *linings* shall be finished to fascias, barges and *wall claddings* as outlined in Figure 8A generally, or Figure 114 for *flush finished* fibre cement. *Wall underlays* shall not be required behind soffit *linings*.

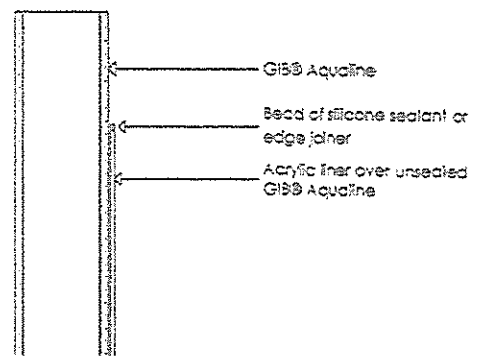
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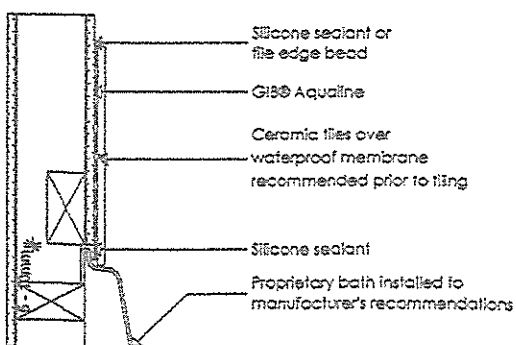




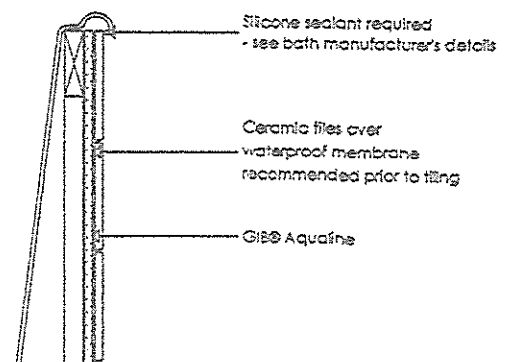
SHOWER WALL / TRAY DETAIL
SCALE 1:10



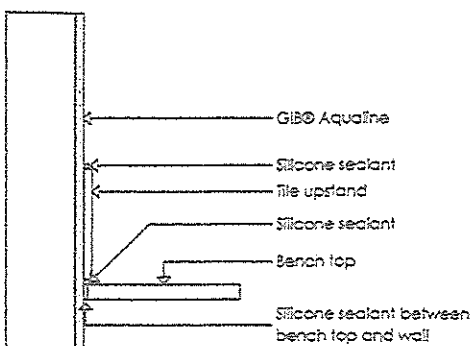
LINER TOP DETAIL
SCALE 1:10



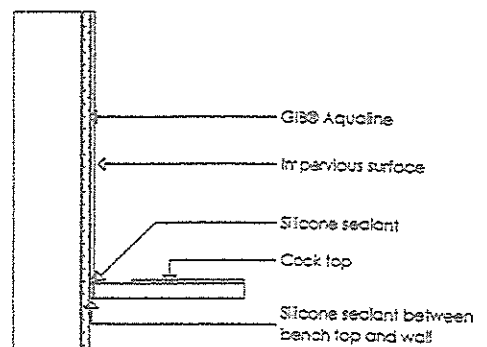
BATH / WALL DETAIL
SCALE 1:10



BATH PLINTH DETAIL
SCALE 1:10



BENCH TOP / WALL DETAIL
SCALE 1:10

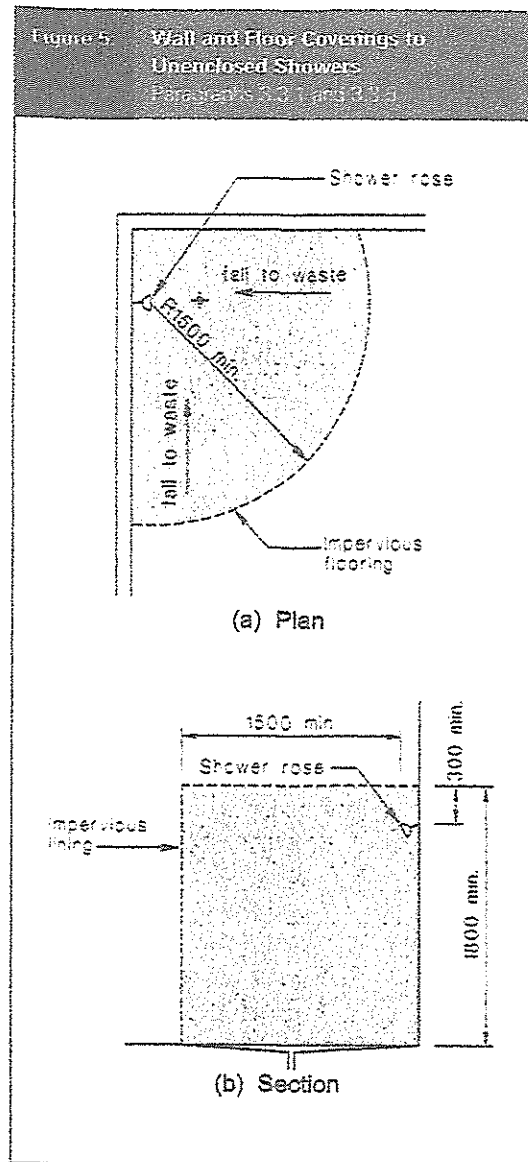
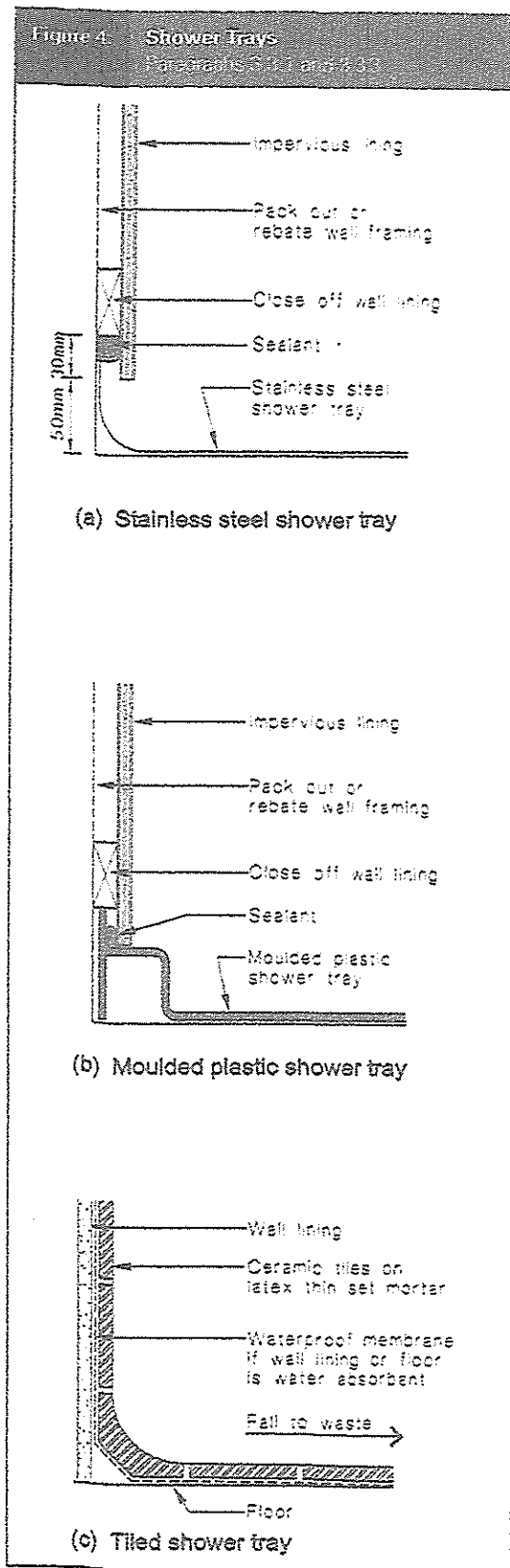


BENCH TOP / WALL DETAIL
SCALE 1:10

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INTERNAL MOISTURE

Acceptable Solution E3/AS1



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GETTING ALARMED

In most fatal house fires, there were no working smoke alarms. Alarms give occupants a crucial warning to escape to safety.

Smoke alarms are a requirement under New Zealand Building Code clause F7 *Warning systems*. This applies to new homes and all existing homes undergoing building work.

Acceptable Solution F7/AS1 requires Type 1 smoke alarms, which must have:

- a hush button to silence the alarm for at least 60 seconds
- a test button
- a sound level that complies with NZS 4514:2009 *Interconnected smoke alarms for houses* [not less than 75 dBA at the sleeping position and not more than 100 dBA at 1.8 m height].

Some alarms are battery powered while others are hard wired to the mains – these are more reliable. Some new alarms are much smaller than older types.

Although not a requirement in houses, smoke alarms should be interconnected so that, when one smoke alarm detects fire smoke, all alarms will sound. Some models connect wirelessly.

NZS 4514:2009 can be downloaded for free from www.standards.govt.nz/sponsored-standards/building-standards.

How many?

F7/AS1 requires alarms on every level in multi-storey buildings and either in every sleeping space or within 3 m of a sleeping space door.

Where a single smoke alarm is installed (which is not considered sensible), it should be between the living and sleeping spaces. At least two alarms should be installed where living spaces separate sleeping areas.

F7/AS1 also requires that alarms must be audible to occupants sleeping in rooms with closed doors. Fire and Emergency New Zealand recommends installing an alarm in each sleeping and living space – a sensible approach to ensure full compliance with F7/AS1.

Where?

Alarms should be on the ceiling (the preferred option) or high on a wall. If on a wall, install 100 mm from the ceiling and 600 mm from a corner to avoid dead air pockets.

Do not install:

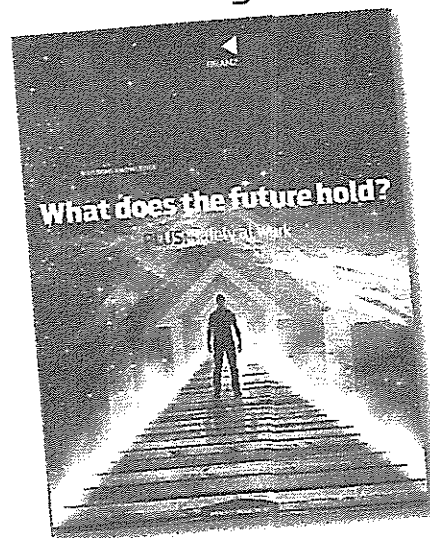
- in a kitchen, garage or bathroom
- near a heat source
- in damp or draughty areas.

Vacuum over smoke alarms to avoid dust build-up, and test with the test button monthly.

All rental homes must have smoke alarms, hard wired or with a battery life of at least 8 years.

Build

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pv.clark@xtra.co.nz

From: Service NEW ZEALAND <service@velux.co.nz>
Sent: Wednesday, 10 February 2021 9:14 AM
To: pv.clark@xtra.co.nz
Subject: Velux VSS skylight architectural detail
Attachments: VSS - Solar Opening Skylight and Custom Made Watershed Flashing in Corrugated Ste....pdf; VSS - Solar Opening Skylight and Custom Made Under Flashing in Corrugated Steel R....pdf; VS and VSE VSS 'AE' code(w prepared KLI) - 454443-2019-01.pdf

Hi Paul,
As requested please see attached details and installation instructions for the VSS skylight.

Kind regards

Prashant Sharma
VELUX New Zealand Limited
62B Princes Street
Onehunga
1061
Auckland

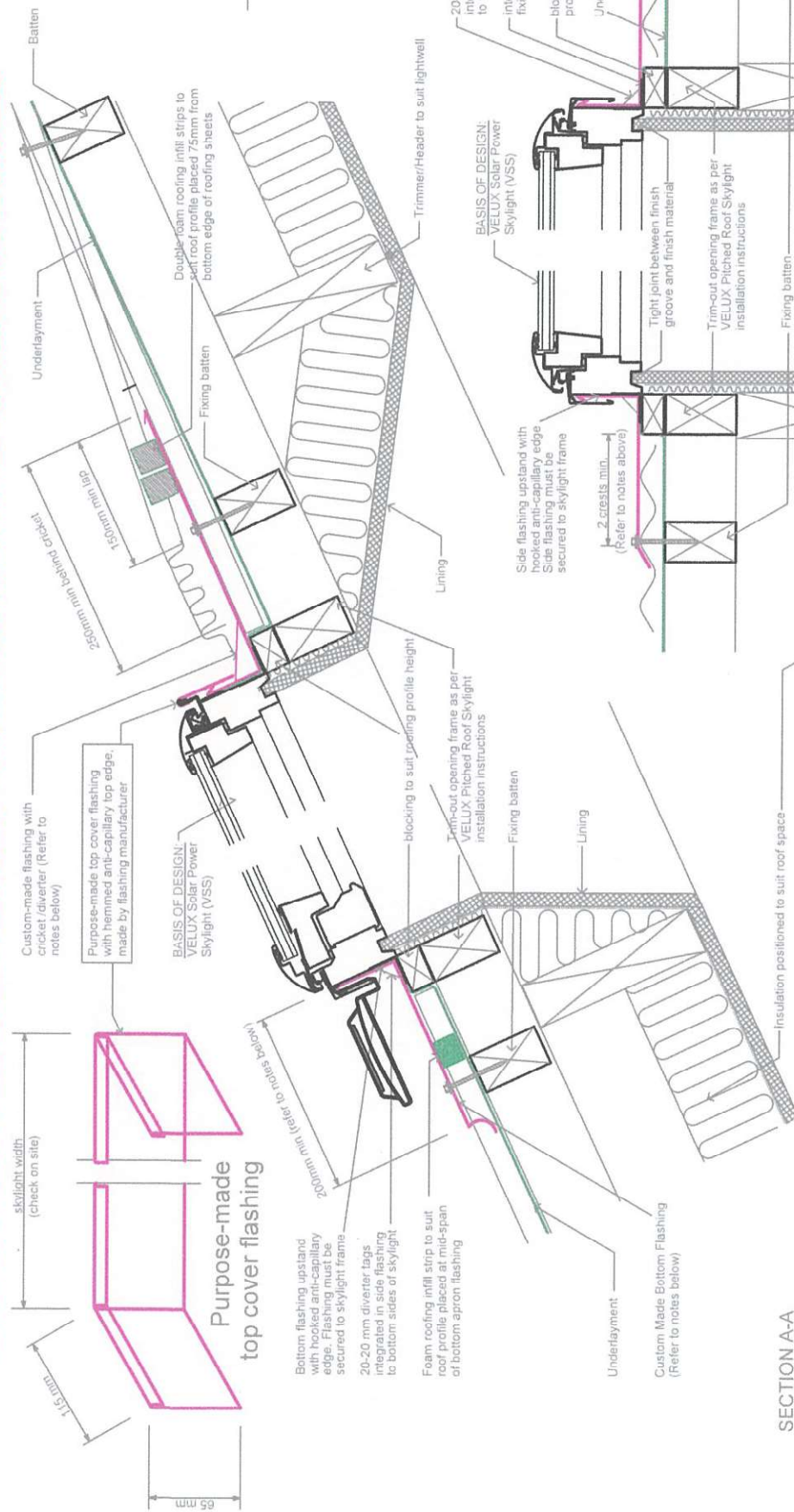
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e-mail: service@velux.co.nz
www: www.velux.co.nz

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THIS DETAIL APPLIES TO METAL CORRUGATE ROOF PROFILES WITH ROOFPITCHES BETWEEN 15 AND 60 DEGREES.



SECTION A-A

BRANZ APPRAISAL CUSTOM OVER / UNDER FLASHING

This detail applies to all metal profile roofs with roof pitches between 15 and 60 degrees.

No cricket or diverter required when skylight is less than 600mm wide, and catchment less than 40 sqm.

Custom flashings must be designed to meet the requirements set out in the latest version of the New Zealand Metal Roof and Wall Cladding Code of Practice, and shall be manufactured and installed by a specialist flashing contractor to the latest trade practices.

For roofs with roof pitches less than 15 degrees, the VELUX Skylight must be installed to a min. 15 degrees. The flashing and installation must be guaranteed against weather-tightness by the specialist flashing contractor. Insulation material meeting the requirements of NZBC/H1 is required in the cavities of the lightwell structure.

SECTION B-B



NEW ZEALAND LTD.
Sky-Product Management
0800 650 445

Name	Date
Drawn by	Mar 19
Checked by	Mar 19
Drawing No.	

VELUX VSS Solar Power skylight with custom-made over-under
Flashing for Corrugated Metal Roofs 15-60 degrees

ELEVATION



This detail applies to all metal profile roofs with roofpitches between 15 and 60 degrees. No cricket or diverter required when skylight is less than 600mm wide, and catchment less than 40 sqm. Custom flashings must be designed to meet the requirements set out in the latest version of the New Zealand Metal Roof and Wall Cladding Code of Practice, and shall be manufactured and installed by a specialist flashing contractor to the latest trade practices.

For roofs with roof pitches less than 15 degrees, the VELUX Skylight must be installed to a min.15 degrees. The flashing and installation must be guaranteed against weathertightness by the specialist flashing contractor. Insulation material meeting the requirements of NZBC/H1 is required in the cavities of the ligwell structure.

	Name	Date
Drawn by		Mar 19
Checked by		Mar 19
Drawing No.		

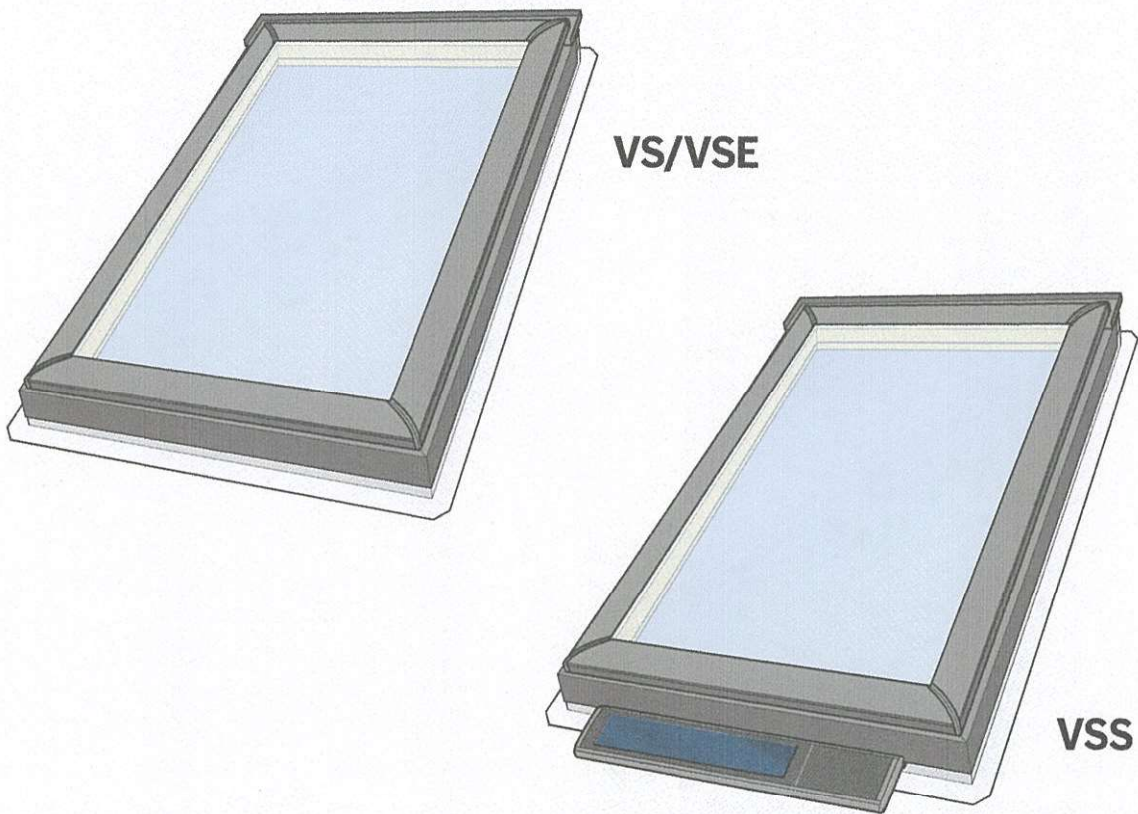
VELUX
Key-Product Management

NEW ZEALAND LTD.
0800 650 445

VELUX VSS Solar Power skylight with custom-made Water-Flashing for Corrugated Metal Roofs 15-86 Degrees

VELUX®

VELUX® VS VELUX INTEGRA® VSE VELUX INTEGRA® Solar VSS



ENGLISH: Deck Mounted Skylight Installation Instructions

한국어: 천창 설치 지침서



VAS 454443-2019-01

⚠ VSE/VSS – Important information/Warnings

ENGLISH: Read instructions carefully before installation and operation as incorrect installation can lead to severe injury. Keep instructions for future reference and hand them over to any new user.

Electrical connection (VSE only)

It is customer's responsibility:

- To contact a qualified electrical installer.

Electrical Shock Hazard (VSE only)

- Disconnect power to the junction or outlet box before servicing the skylight.
- Do not have a fuse in the neutral circuit. This could result in a fire, electrical shock or other personal injury.

To reduce the risk of fire, personal injury and death:

- Do not install the skylight in a location or at a height where unsupervised children may be present.
- Always switch off power to the skylight operator at the service panel when connecting the skylight, when installing accessories and whenever the operator cover is removed.
- On suspicion of malfunction, switch off power and call for service.

Safety

- The skylight is to be installed more than 2.5 m above the floor.
- The skylight can be used by persons (aged 8 years and above) with sufficient experience and knowledge if they have been given instruction concerning safe use and understand the hazards involved. Cleaning and user maintenance must not be done by unsupervised children.
- Children must not play with the skylight and its electrical products. The remote control should be kept out of reach of children. Do not allow children near an open skylight.
- Before operating, ensure that the skylight with electrical products can be operated without risk of damage to property or injury to people or animals.
- For personal safety, never have head, hand, arm or any other body part out of or through the opening of the skylight without first having switched off power.
- If repair or adjustment work is needed, disconnect power and ensure that it cannot be reconnected unintentionally.
- It is recommended to place a remote control in the room where the skylight and its electrical products have been installed.
- Make sure that the insect screen is installed before putting the skylight into use.
- Remote control:
FCC ID: XSG831641 and IC ID: 8642A-831641
Certificate of Radio Equipment in Japan: No. 10215191/AA/00
Window operator (solar skylight operator):
FCC ID: XSG832876 and IC ID: 8642B-832876
Window operator (electric skylight operator):
FCC ID: XSG863765 and IC ID: 8642A-863765
This device complies with part 15 of the FCC and RSS-210 of the IC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
- This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to

correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the device and receiver.
 - Connect the device to an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.
- FCC Radiation Exposure Statement: This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
 - The term "IC:" before the device certification number signifies that the Industry Canada technical specifications were met.

Function

- If the VSE rain sensor gets wet or the VSS acoustical rain sensor detects rain, the skylight automatically closes.
- Disabling the rain sensor while the skylight is open creates a risk of water to the interior of the building.
- If the rain sensor is activated, the skylight will close within approximately 30 seconds. If the skylight is activated with the remote control or another activation control, it will take up to one minute until the skylight is completely closed. Therefore, in case of sudden rain, water may enter the room before the skylight is closed.
- In case of snow and/or ice, the operation of the skylight may be blocked resulting in damage to the skylight.

Product

- This product has been designed for use with genuine VELUX products. Connection to or use with other products may cause damage, malfunction or injury.
- Electrical products must be disposed of in conformity with all local codes, ordinances, rules and regulations for electronic waste and not with household waste.
- Used remote control batteries have to be disposed of in conformity with the relevant environmental regulations and ordinances.
- Expected battery lifetime of the remote control: Approx 1 year.
- The packaging can be disposed of with usual household waste.
- Radio frequency band: 2.4 GHz.
- Radio frequency range: 110 yards (100 m) free field. Depending on building construction, the indoor range is approx 30 ft (10 m). However, constructions with reinforced concrete, metal ceilings and plaster walls with steel members may reduce the range.

Maintenance and service

- Disconnect power before carrying out any maintenance, repair, adjustment or service work to the skylight or products connected to it (including battery backup KLB 100, if installed) and ensure that it cannot be reconnected unintentionally.
- Maintenance and installation must be carried out in consideration of Health and Safety at work requirements.
- There are no serviceable parts inside the skylight operator.
- Spare parts are available through your VELUX sales company. Please provide information from the data plate.
- If you have any technical questions, please contact your VELUX sales company, see telephone list or www.velux.com.



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△VSE/VSS - 안전사고 예방을 위한 중요 정보 공지

한국어: 제품을 설치할 때, 심각한 부상의 위험을 방지하기 위해서 제품을 설치하거나 사용하기 전에 이 책자의 내용을 충분히 숙지하시고 다음 사용자를 위하여 자료를 보관하고 전달해 주세요.

전기 연결 (VSE에만)

고객의 책임:

- 검증된 전기기술자에게 요청하세요.

전기 감전 위험 (VSE에만)

- 스카이라이트를 설치하기 전에 전선박스 혹은 콘센트 박스의 전원을 차단하세요.
- 중성 회로에는 퓨즈가 있어야 합니다. 화재나 감전 혹은 다른 위험이 있을 수 있습니다.

화재, 부상 혹은 사망사고의 위험을 감소시키기 위한 방법

- 보호자가 필요한 어린이의 손이 닿을 수 있는 높이나 위치에 스카이라이트를 설치하지 마세요.
- 스카이라이트를 연결할 때, 악세사리를 설치할 때, 그리고 커버를 분리할 때마다 항상 서비스 패널의 스카이라이트 전원을 끄세요.
- 오작동으로 의심되는 경우에는 전원을 끄고 서비스를 요청하세요.

안전

- 스카이라이트는 바닥으로부터 2.5m 이상 되는 높이에 설치해야 합니다.
- 스카이라이트를 사용하기 전에 안전한 제품사용법과 제품에 관련된 위험에 대해서 충분한 내용을 숙지한 8세 이상의 사람이 사용할 것을 권장합니다. 아 이들이 혼자 청소를 할 경우, 위험할 수 있으니 반드시 보호자와 함께 해 주세요.
- 어린이들이 스카이라이트, 그리고 관련 부속품을 가지고 장난치지 않도록 잘 관리해 주세요. 리모컨은 어린이들의 손이 닿지 않는 곳에 보관하시고 열려 있는 스카이라이트 가까이에서 어린이가 가지 않도록 주의시키세요.
- 본 제품을 작동시키기 전, 혹시 모를 재산상의 위험이나 손상 혹은 사람이나 동물이 다칠 만한 요인은 없는지 잘 살펴본 후 사용해 주세요.
- 스카이라이트의 전원을 끄지 않은 상태에서는 절대 스카이라이트 밖으로 손이나 팔 등 신체의 어떤 부분도 내밀지 마세요.
- 수리나 조정 작업이 필요한 경우에는 반드시 스카이라이트로 들어오는 전원을 차단하여 의도치 않은 오작동이 없도록 하여야 합니다.
- 리모컨은 스카이라이트와 그 관련제품이 설치된 공간에 함께 두는 것이 바람직합니다.
- 스카이라이트를 사용하기 전에 방충망이 설치되어 있는지 확인하세요.
- 리모컨
- FCC ID: XSG831641 and IC ID: 8642A-831641
- Certificate of Radio Equipment in Japan: No. 10215191/AA/00
- 스카이라이트 구동 (태양광 스카이라이트 구동):
- FCC ID: XSG832876 and IC ID: 8642B-832876
- 스카이라이트 구동 (전동형 스카이라이트 구동):
- FCC ID: XSG863765 and IC ID: 8642A-863765
- 이 장치는 FCC 규칙의 제 15 조와 IC 규칙의 RSS-210을 준수합니다. 작동에는 다음 두 가지 조건이 적용됩니다: (1) 이 장치는 유해한 간섭을 유발하지 않으며 (2) 이 장치는 원하지 않는 작동을 유발할 수 있는 간섭을 포함하여 수신된 모든 간섭을 수용해야 합니다.
- 이 장치는 테스트를 거쳐 FCC 규정 제 15 조에 의거, Class B 디지털 장치에 대한 제한을 준수하는 것으로 판명되었습니다. 이러한 제한 사항은 주거 지역 설치 시 유해한 간섭으로부터 합리적인 보호를 제공하도록 고안되었습니다.
- 이 장치는 무선 주파수 에너지를 생성, 사용 및 방출할 수 있으며, 지침에 따라 설치 및 사용하지 않을 경우 무선 통신에 유해한 간섭을 일으킬 수 있습니다. 그러나 특정 설치에서 간섭이 발생하지 않는다는 보장은 없습니다. 장치를 켜다가 켜서 판단할 수 있는 라디오 또는 TV 수신에 유해한 간섭을 일으키는 경우 다음 방법 중 하나 이상을 사용하여 간섭을 수정하세요.
 - 수신 안테나의 방향이나 위치를 변경하세요.
 - 장치와 수신기 사이의 간격을 넓히세요.
 - 수신기가 연결된 것과 다른 회로의 콘센트에 장치를 연결하세요.

- 대리점이나 숙련된 라디오 / TV 기술자에게 도움을 요청하세요. 규정 준수 책임이 있는 당사자에 의해 명시적으로 승인되지 않은 변경이나 개조는 사용자 권한을 상실할 수 있습니다.

- 수
- 있다.
- FCC 방사선 노출 선언: 이 장치는 통제되지 않은 환경에 대해 설정된 FCC RF 방사선 노출 제한을 준수합니다.
- 장치 인증 번호 앞에 있는 "IC" 라는 용어는 캐나다 산업 성 (Industry Canada) 기술 사양이 충족되었음을 나타냅니다.

기능

- VSE 레인센서가 젖거나 VSS 음파 레인센서가 비를 감지하면 스카이라이트가 자동으로 닫힙니다.
- 스카이라이트가 열려 있는 동안 레인 센서를 비활성화하면 건물 내부에 물이 들어갈 위험이 있습니다.
- 레인센서가 활성화되면 약 30초 내에 스카이라이트가 닫힙니다. 리모컨 또는 다른 구동 컨트롤로 스카이라이트가 활성화되면 스카이라이트가 완전히 닫힐 때까지 최대 1분이 걸립니다. 그러므로, 갑작스러운 비의 경우, 스카이라이트가 닫히기 전에 물이 방으로 들어갈 수 있다.
- 데이터 없음의 경우, 천장의 작동이 차단되어 스카이라이트가 손상될 수 있습니다.

제품

- 본 제품은 정품 VELUX 제품과 함께 사용하도록 설계되었습니다. 다른 제품에 연결하거나 사용하는 경우 손상, 오작동 또는 부상의 원인이 될 수 있습니다.
- 전기 제품은 가정 쓰레기가 아닌 전자 폐기물에 대한 모든 현지 법규, 법령, 규칙 및 규정에 따라 폐기해야 합니다.
- 사용한 원격 제어 배터리는 관련 환경 규정 및 법규에 따라 폐기해야 합니다.
- 리모컨의 예상 배터리 수명: 약 1년.
- 포장재는 일반 가정용 폐기물로 폐기할 수 있습니다.
- 무선 주파수 대역: 2.4GHz.
- 무선 주파수 범위: 110야드(100m) 범위에서 사용 가능. 건물 구조에 따라 실내 범위는 약 30피트(10m)입니다. 단, 철근 콘크리트, 금속 천장 및 강재를 사용한 석고 벽체는 범위를 줄일 수 있다.

유지보수와 애프터서비스

- 스카이라이트 혹은 스카이라이트에 연결된 제품(배터리 백업 KLB 100 설치된 경우)에 대한 유지보수, 수리, 조정 또는 서비스 작업을 수행하기 전에 반드시 전원을 차단하여 오작동으로 인한 위험을 제거하세요.
- 유지보수 및 설치 작업 요건의 안전보건을 고려하여 수행되어야 합니다.
- 스카이라이트 오퍼레이터 내부에 서비스 가능한 부품이 없습니다.
- VELUX 판매 회사를 통해 예비 부품을 구할 수 있습니다. 부탁합니다.
- 데이터 플레이트에서 정보를 제공합니다.
- 기술 관련 질문이 있는 경우 VELUX 판매업체에 문의하십시오.
- 회사, 전화 목록 또는 www.velux.com 을 참조하십시오.



io-homecontrol® 설치에 간편하면서도 더욱 안전하고 방전된 무선 기술입니다. io-homecontrol® 라벨이 부착된 제품들은 상호 통신이 가능하고, 편리함과 보안, 에너지 성능을 향상시키는 제품입니다.

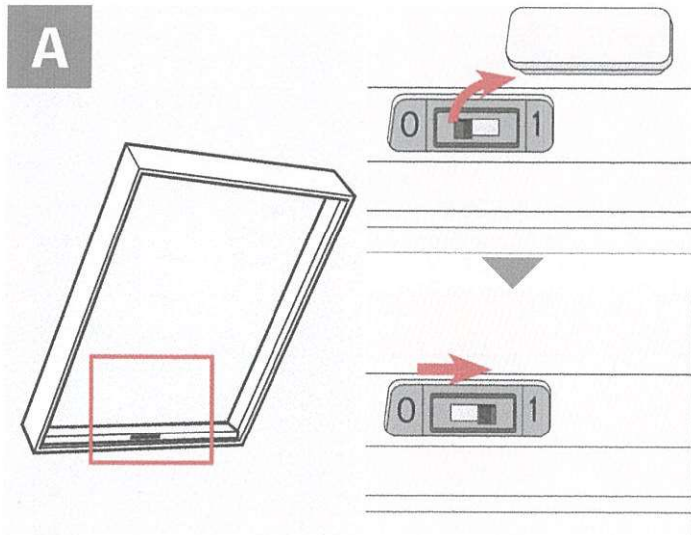
www.io-homecontrol.com

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VSS 

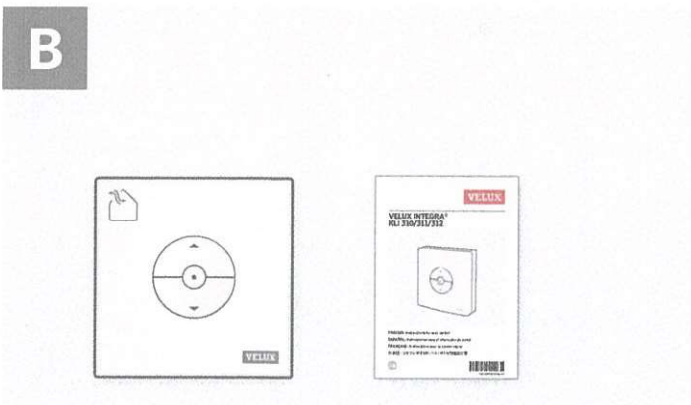
This page is for solar skylight VSS only.

이 페이지는 태양광 스카이라이트 VSS에만 해당하는 내용입니다.



ENGLISH: Before mounting the skylight: Turn on power.

한국어: 스카이라이트를 장착하기 전에 파워를 켜세요.



ENGLISH: Control: See enclosed instructions for wall switch.

한국어: 제어: 벽면 스위치에 대한 지침을 참조하세요.



ENGLISH: For steep roof pitches above 45° and for roofing materials with profile height above 50 mm, use wire extension kit ZZZ 241DM to relocate the solar panel and rain sensor as shown in the enclosed instructions for ZZZ 241DM.

한국어: 45° 이상의 가파른 지붕각도 및 프로필 높이가 50mm를 초과하는 지붕 마감자재의 경우, 와이어 확장 키트 ZZZ 241DM을 사용하여 동봉된 ZZZ 241DM 지침과 같이 태양열 패널 및 레인센서를 재배치하세요.

Important installation requirements

ENGLISH: Roof pitch and roofing material

Skylights VS, VSE and VSS are designed for roof pitches 15°-90° and roofing materials as specified for the VELUX flashings.

Accessories

Refer to instructions for accessory type in question or contact your VELUX sales company for further information.

Vapour barrier

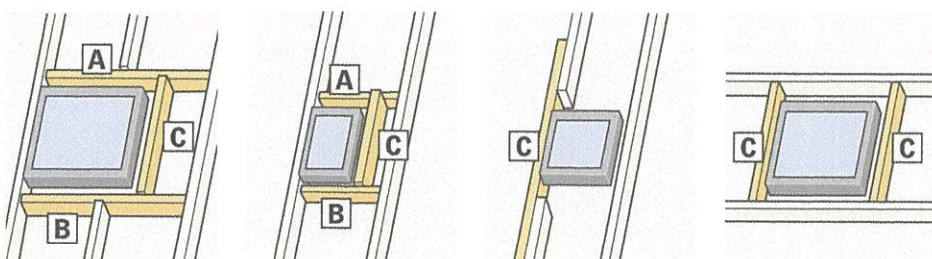
Where a vapour barrier is part of the roof construction, this barrier must be extended and connected to the skylight finish groove.

Treatment of wooden frame

Most VELUX skylights are pre-painted white and require no on-site painting. Stain grade skylights (available on order) have a temporary treatment against mould and mildew. Further treatment with wood stain, paint, etc is necessary and can be done prior to installation or shortly after installation. Make sure that wood stain, paint, etc is not applied to gaskets.

Caution

Removal of sash during installation of the skylight is not recommended. Please contact your VELUX sales company for further information.



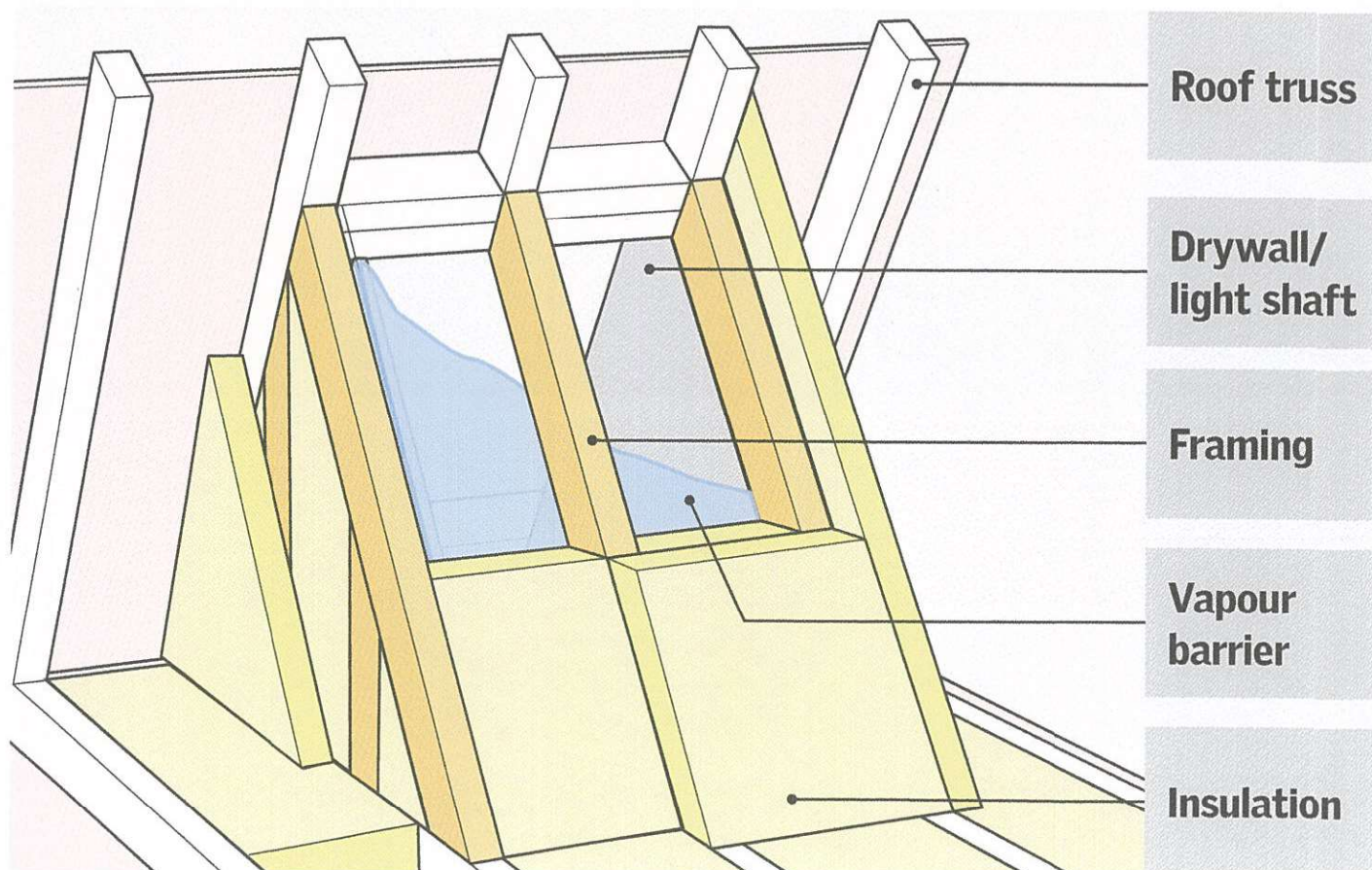
Roofing rafters

The skylight must be supported by roofing rafters as shown.

Install top, side and bottom support rafters when necessary.

- A** Top support rafter.
- B** Bottom support rafter.
- C** Side support rafter.

Light shaft application



설치 숙지 사항안내

한국어: 지붕각도 및 지붕 마감자재

Skylights VSE, VSE 및 VSS는 VELUX 후레싱에 지정된 지붕각도 15도~90도 사용 및 지붕 마감자재를 위해 설계되었습니다.

악세사리

해당 액세서리 유형에 대한 지침을 참조하거나 자세한 내용은 VELUX 판매 회사에 문의하십시오.

방습지

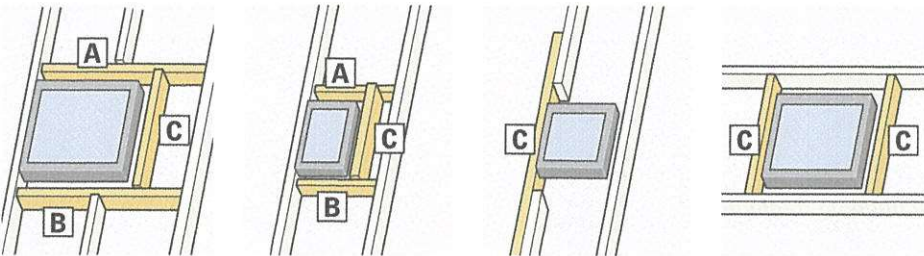
방습지가 지붕 구조의 일부인 경우, 이 방습지를 연장시켜 스카이라이트 마감 홈에 연결해야 합니다.

목재 프레임 처리

대부분의 VELUX 스카이라이트는 미리 흰색 도색이 되어 있어 현장에서 따로 도장할 필요가 없습니다. 스테인 마감제품 스카이라이트는 곰팡이에 대한 임시 적으로 처리가 되어 있습니다. 하지만 스테인, 페인트 등을 추가로 도장해야 하며, 도장 작업은 설치하기 전, 후에 할 수 있습니다. 가스킷에 스테인, 페인트 등이 도포되지 않도록 주의하세요.

주의

스카이라이트 설치 중에 샷시를 제거하는 것은 권장하지 않습니다. 자세한 내용은 VELUX 판매 회사에 문의하세요.



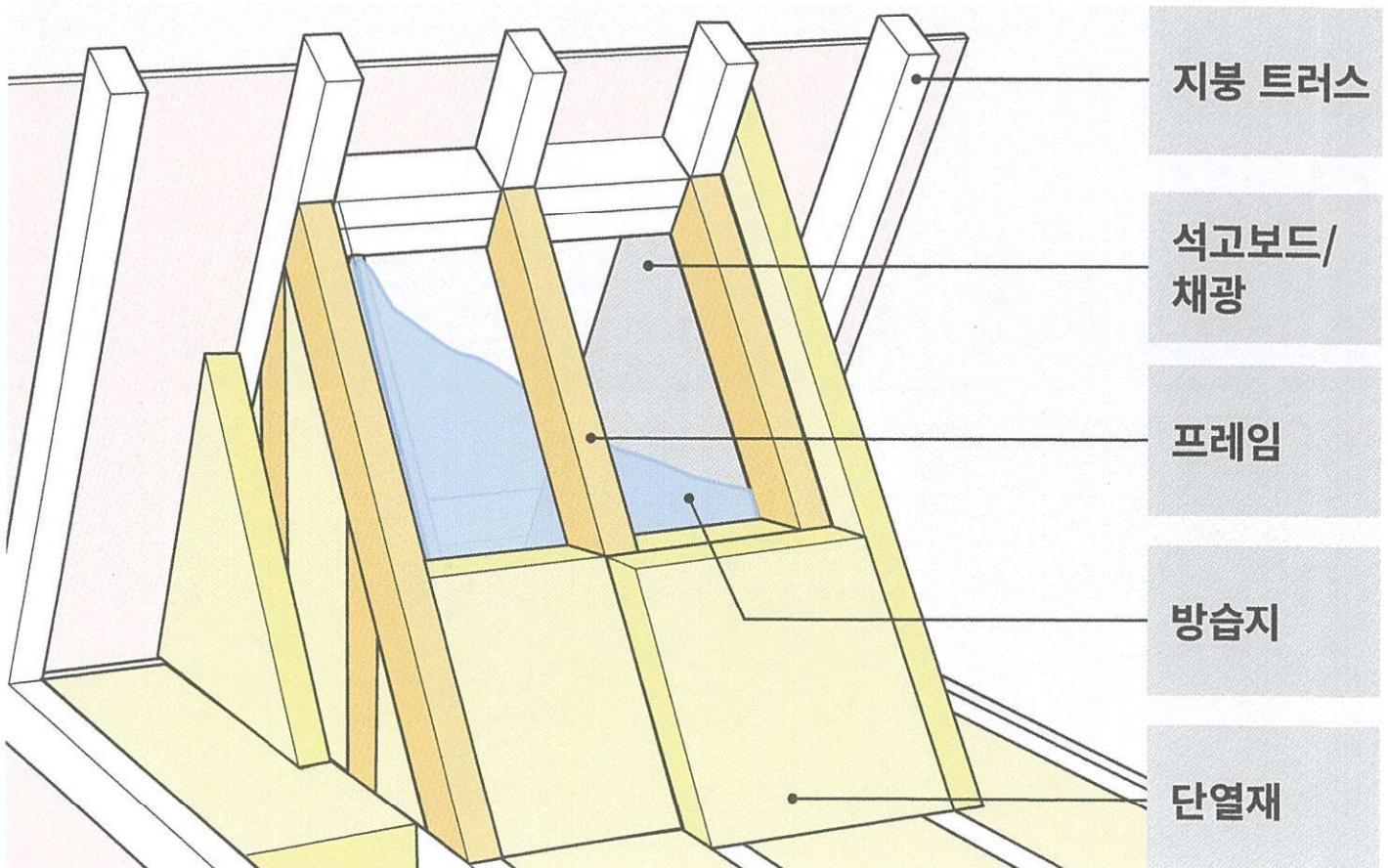
지붕 서까래

스카이라이트는 그림과 같이 서까래로 지지되어야 합니다.

필요한 경우 상부, 측면 및 하부 지지용 서까래를 설치하세요.

- A** 상부 지지 서까래.
- B** 바닥 지지 서까래.
- C** 측면 지지 서까래.

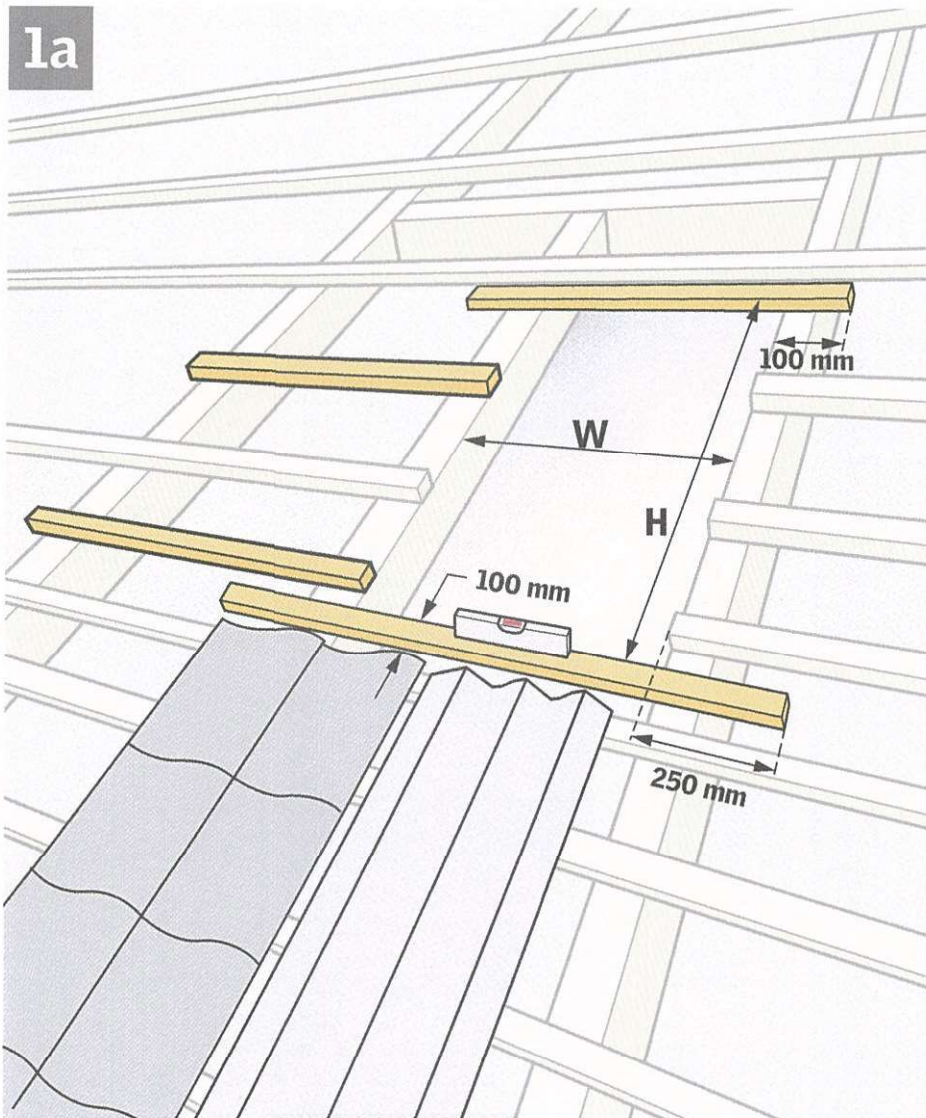
채광 적용



Framing out

지붕 프레임 작업하기

1a

**ENGLISH: Tiles and new metal sheet roofing with flashing EDW**

Prepare the rough opening to match the size of the skylight frame.

Install installation battens at top and bottom as shown and add support battens at the sides as necessary to support the flashing in minimum 2-3 places.

Keep 100 mm distance from edge of roofing material to top edge of installation batten.

For tiles, ensure that the bottom of the skylight frame is fitted above a complete course of tiles.

Check for level.

한국어: 신축건물에서 EDW 후레싱과 기와 및 금속 지붕마감재 시공법

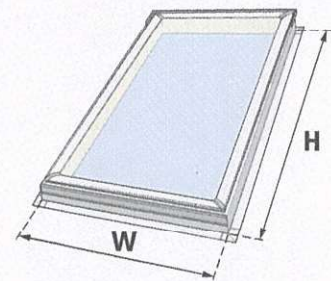
개구부를 스카이라이트 프레임 크기에 맞게 준비합니다.

그림과 같이 상단과 하단에 상을 설치하고, 후레싱을 설치하는 데 필요한 경우 측면에 지지할 수 있는 상을 최소한 2-3군데 추가합니다.

지붕 마감재의 가장자리에서 상 상단 가장자리까지 100mm 거리를 유지한다.

기와 설치의 경우, 전체 마감 설치 기와 위에 스카이라이트 프레임의 하단부를 장착해야 합니다.

수평을 점검하세요.

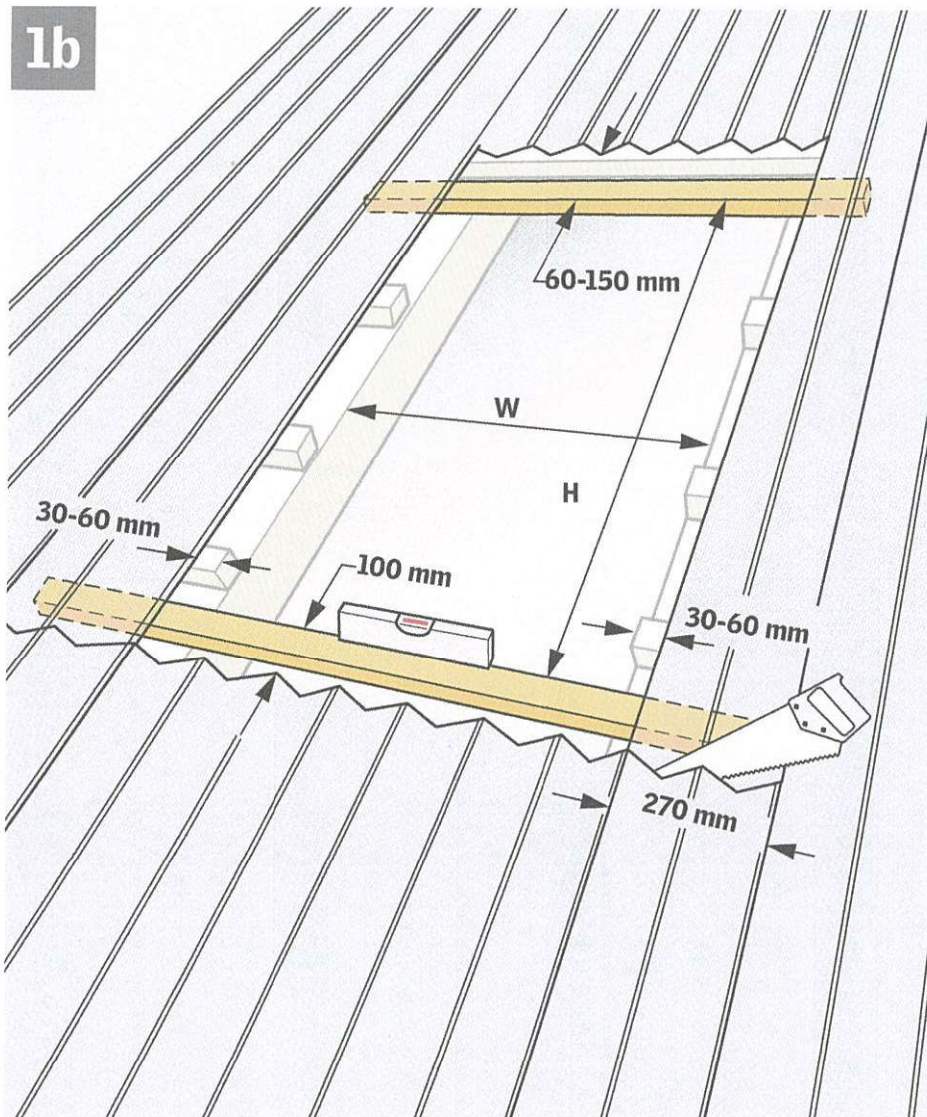


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Framing out

지붕 프레임 작업하기

1b

**ENGLISH: Existing metal sheet roofing with flashing EDW**

Cut the metal sheets as shown, maintaining the correct distance to the rough opening.

Finish the rough opening to match the size of the skylight frame.

Install installation battens as shown and headers and jack rafter as necessary.

Check for level.

Important: Install saddle flashing EDW before installing the skylight.

한국어: 기존 건물에서 EDW 후레싱과 금속 지붕마감재 시공법

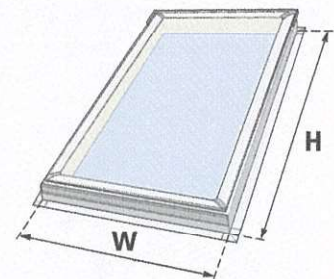
그림과 같이 금속 시트를 잘라 개구부까지의 올바른 거리를 유지하세요.

개구부는 스카이라이트 프레임 크기와 맞춰 마감해 줍니다.

그림과 같이 상을 설치하고 필요에 따라 헤더와 가지 '사'자 보(jack rafter)를 설치하세요.

수평을 점검하세요.

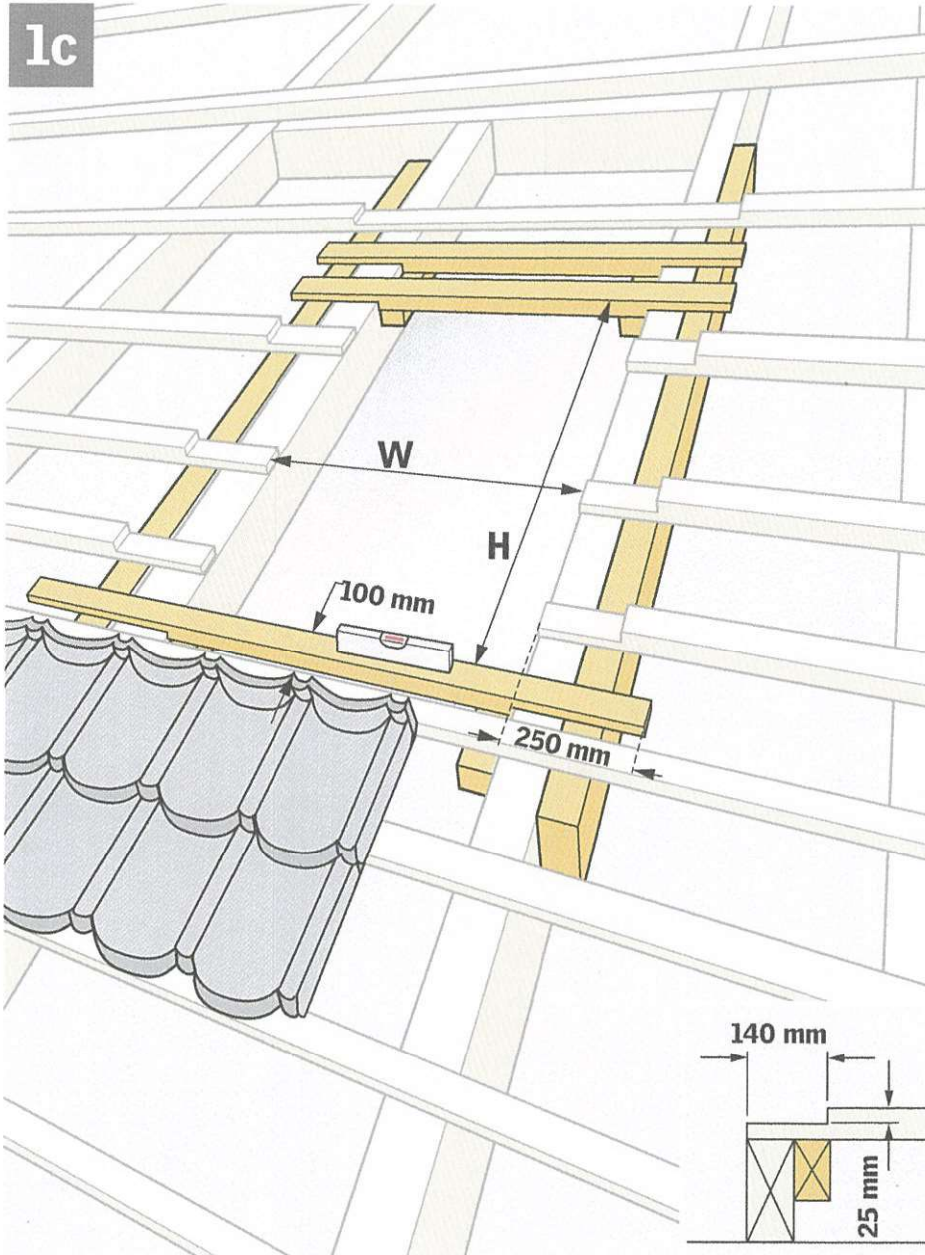
중요: 스카이라이트를 설치하기 전에 EDW 후레싱을 설치하세요.



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Preparing of roof

지붕준비

**ENGLISH: DECRA®, HARVEY™ or CORONA® roofing material with flashing EDW**

Prepare the rough opening to match the size of the skylight frame.

Install installation and support battens as shown and headers and jack rafter as necessary. Installation battens and support battens must be recessed 25 mm below batten level.

Keep 100 mm distance from edge of roofing batten to top edge of installation batten.

Check for level.

Cut roofing battens down 25 mm deep at sides and at top and 140 mm wide at sides. Install an extra trimmer to support the weakened roofing battens.

한국어: DECRA®, HARVEY™ 또는 CORONA® 지붕마감재와 EDW 후레싱 시공방법

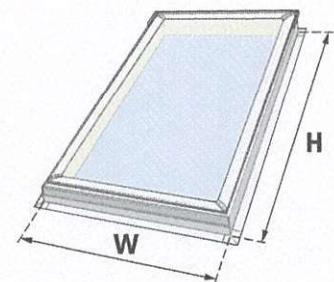
개구부를 스카이라이트 프레임 크기에 맞게 준비합니다.

그림과 같이 상을 설치하고, 필요에 따라 헤더와 가지 '사'자 보(jack rafter)를 설치합니다. 각 상의 간격과 높이 위치는 그림에 표기된 것처럼 맞추어야 합니다.

지붕에 건 상의 가장자리에서 시공을 위해 건 상의 상단 가장자리까지 100mm 간격을 유지해야 합니다.

수평을 점검하세요.

지붕에 건 상은 측면과 상단에서 25mm 아래로, 측면의 너비는 140mm로 절단한다. 약해진 상을 지지해주기 위해 추가로 트리머를 시공해 주세요.

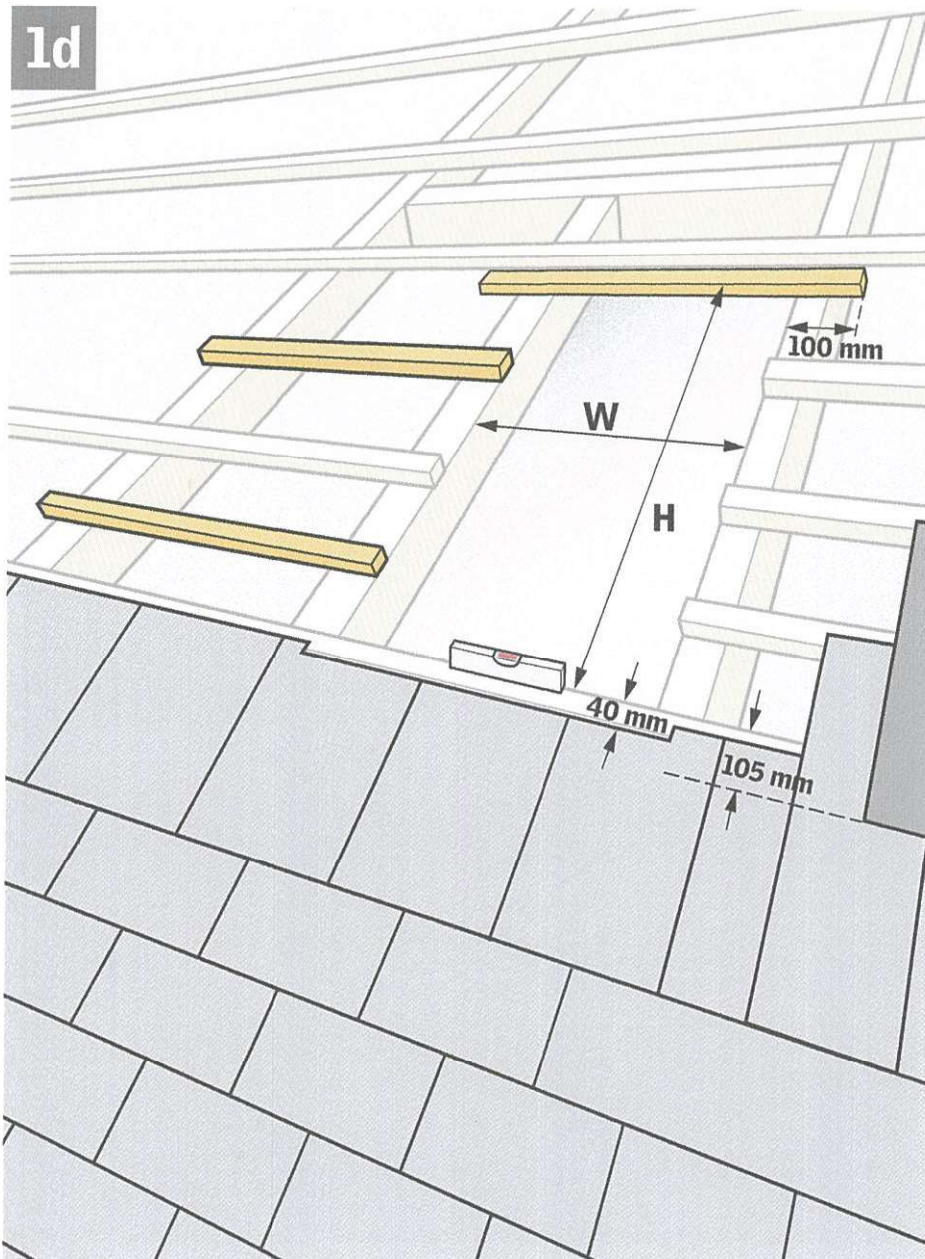


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Preparing of roof

지붕준비

1d

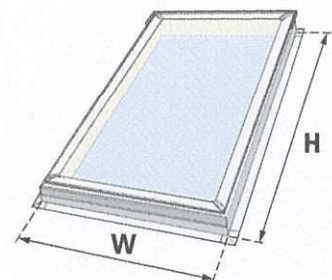


ENGLISH: Shingles/slates with flashing EDL

Prepare the rough opening to match the size of the skylight frame. For best installation appearances, maintain distance to roofing material as shown (105 mm). Install installation batten at top as shown and add support battens at the sides as necessary to support the flashing in minimum 2-3 places. Check for level.

한국어: 싱글/슬레이트 지붕에 EDL 후레싱 시공 방법

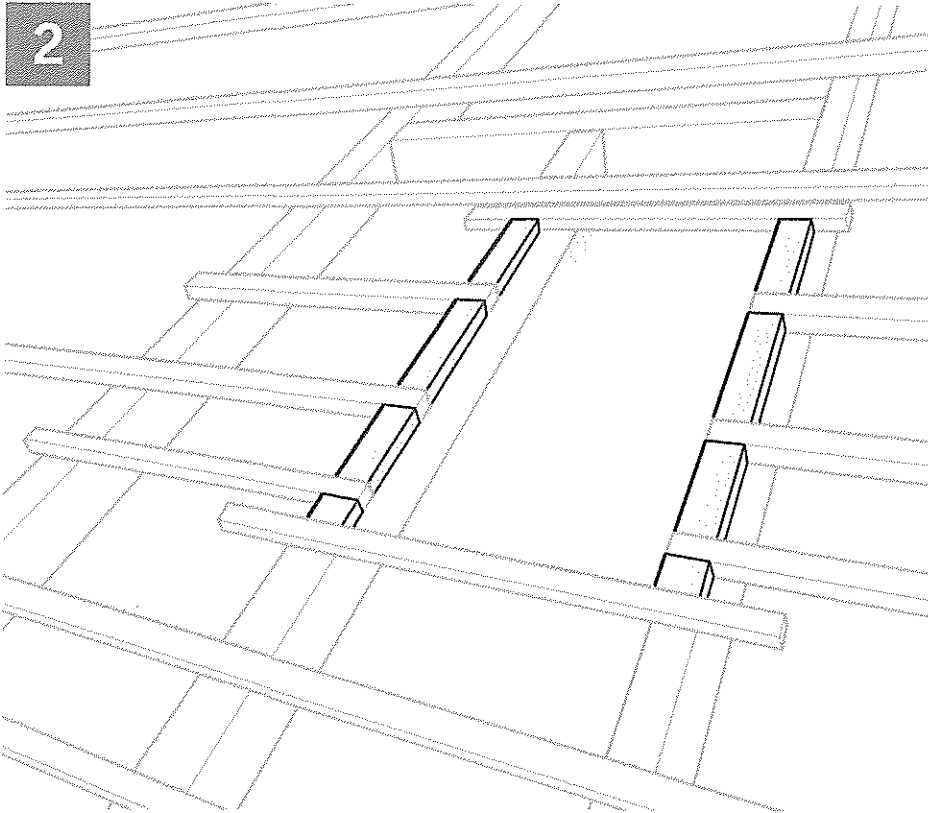
개구부를 스카이라이트 프레임 크기에 맞게 준비합니다. 그림처럼 지붕마감재와의 거리를 105 mm 유지하셔야 보기 좋게 시공이 가능합니다. 그림과 같이 상단에 상을 설치하고, 필요에 따라 측면에 최소 2-3 군데 상을 추가하고 수평을 점검해 주세요.



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Infill battens

세로 상 추가하기



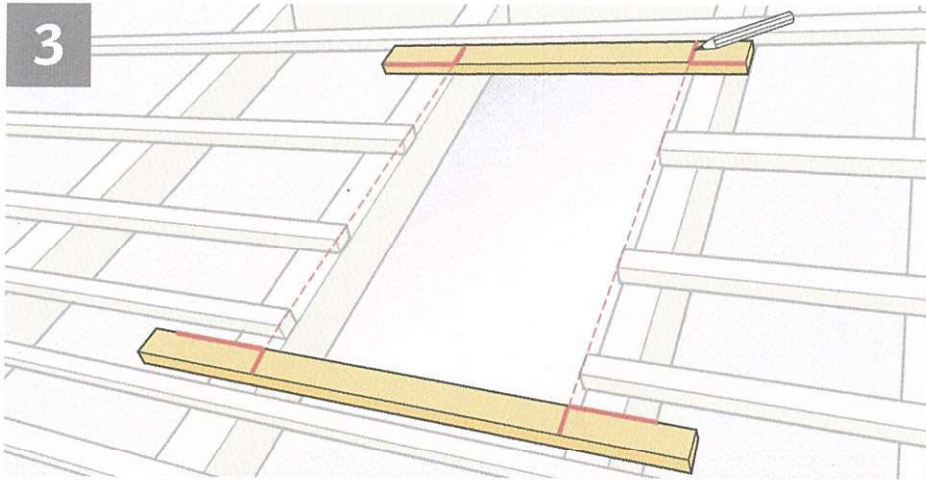
ENGLISH: Consider infill battens along the sides to reduce heat loss/improve thermal performance.

한국어: 열손실을 줄이고 단열성능을 강화하기 위해 서 그림처럼 세로 상을 추가할 수 있습니다.

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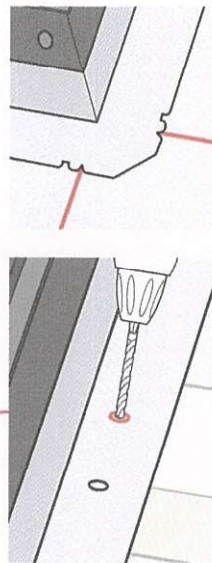
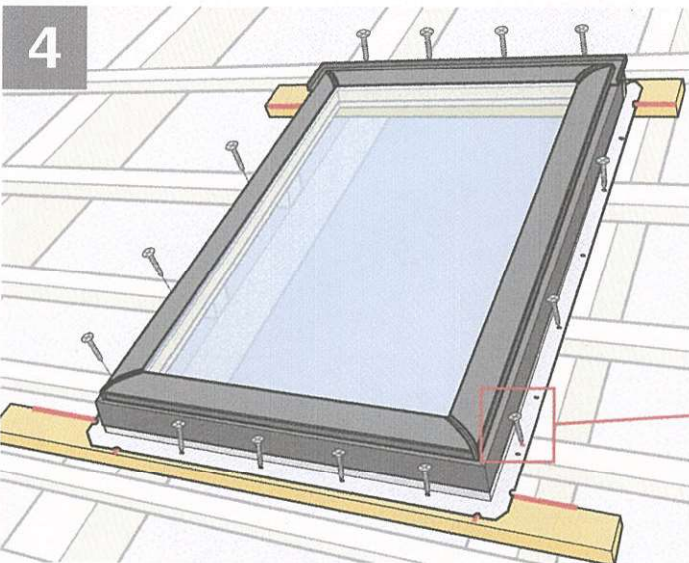
Attachment of skylight

스카이라이트 설치



ENGLISH: Mark corners of the rough opening.

한국어: 그림과 같이 개구부 모서리에 표시해주세요.



ENGLISH: Center the skylight over the rough opening as shown.

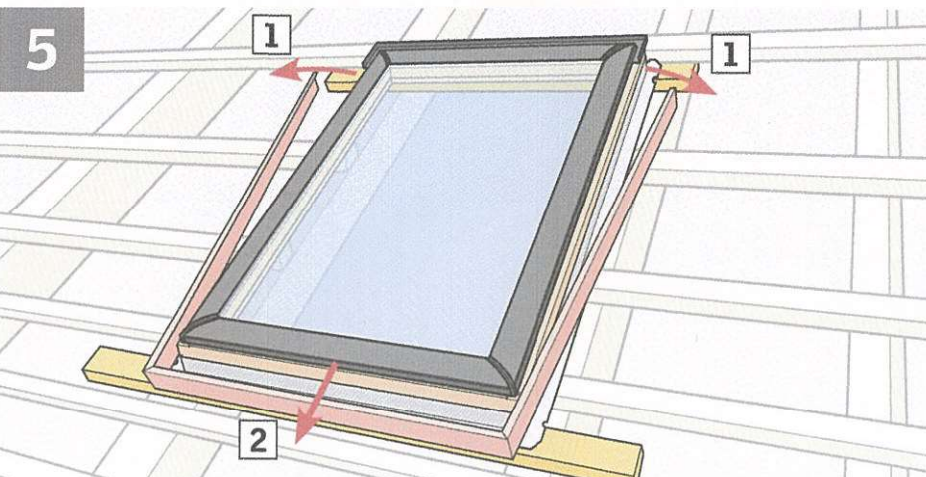
Attach skylight with fasteners provided.

Drill new holes if existing do not align with the roofing battens.

한국어: 그림과 같이 개구부 위에 스카이라이트의 중심을 맞춥니다.

스카이라이트를 제공된 스크류로 설치해 주세요.

스카이라이트와 상이 서로 맞지 않을 경우 구멍을 새로 뚫어 주세요.



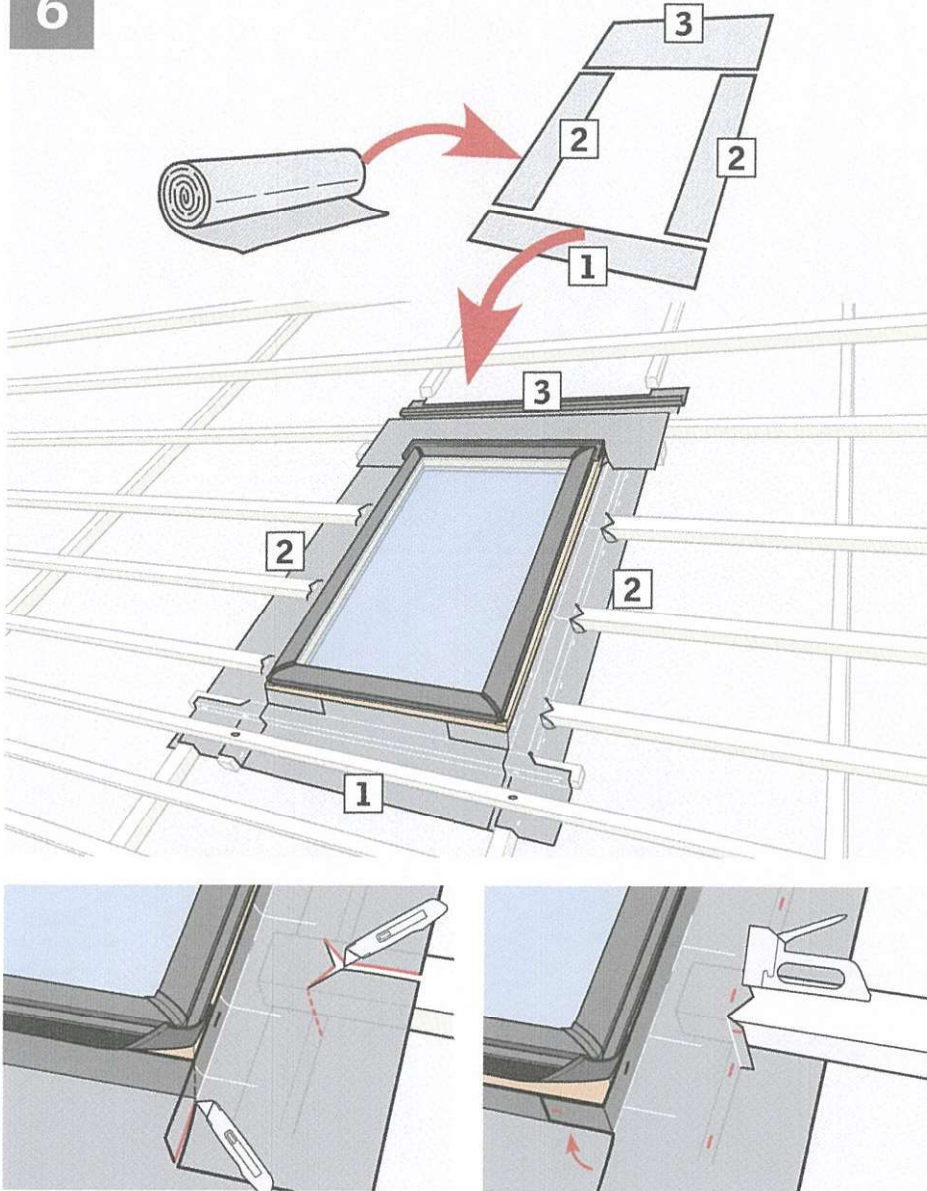
ENGLISH: Remove cladding if underlayment is to be used.

한국어: 방수포를 사용할 경우, 그림처럼 스카이라이트의 하부 사시를 제거해 주세요. 제거 후, 나사못을 잃어버리지 않도록 잘 챙겨 주세요.

Installation of roofing underlayment

방수포 시공하기

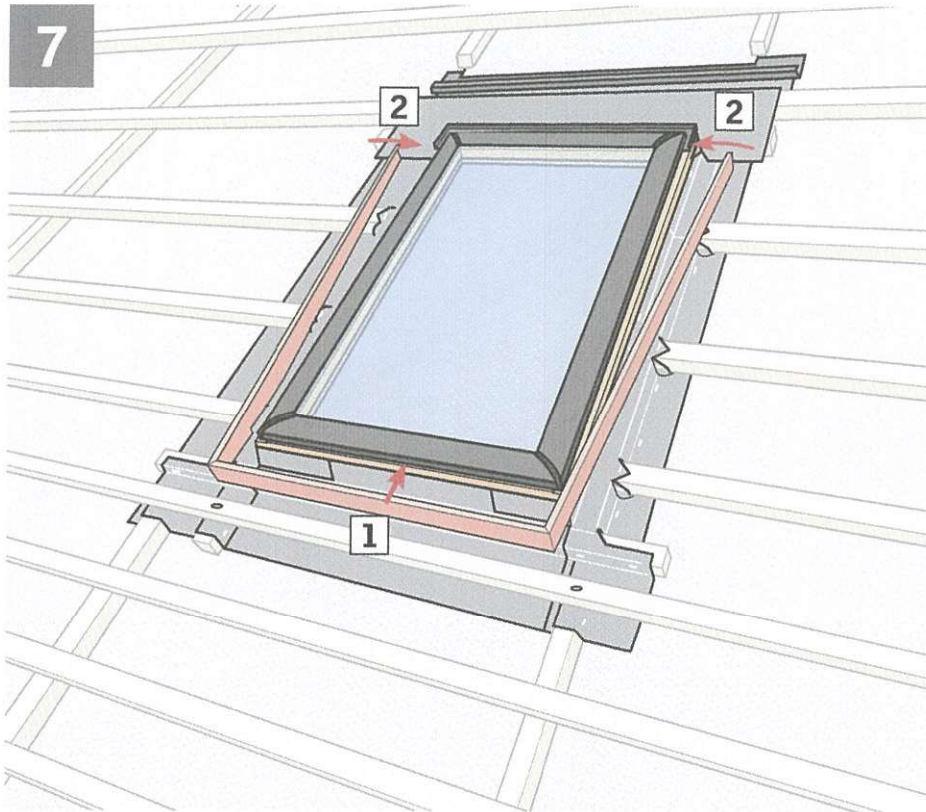
6



ENGLISH: If roofing underlayment is used: Dress roofing underlayment up around all four sides of the frame. Roof with counter battens shown for illustration purpose.

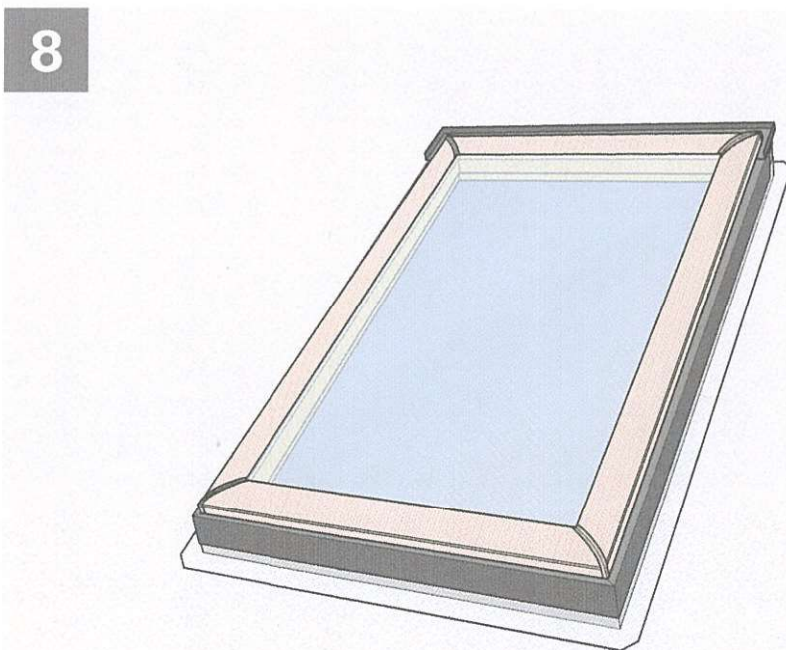
한국어: 방수포를 시공할 때에는 그림처럼 상부, 측면, 하부로 재단한 후, 하부, 측면, 상부(번호 순으로) 순으로 방수포를 꼼꼼하게 입혀주세요.

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ENGLISH: If flashing is not to be installed immediately, replace the cladding parts starting at the bottom. Interlock side frame claddings with bottom frame cladding as shown. Secure the claddings with the original screws.

한국어: 후레싱을 즉시 설치하지 않을 경우, 그림과 같이 제거했던 샷시를 다시 부착해 주세요. 샷시를 부착할 때는 기존에 제공되었던 나사못으로 고정해 주세요.



ENGLISH: Caution: Removal of sash during installation of the skylight is not recommended. If sash is removed, test and check that it is properly attached at the top and bottom of the skylight frame. If working from an interior room, close the skylight completely. To verify that it is properly attached, carefully push outward on the sash. If working from the roof, close the skylight completely. To verify that it is properly attached, carefully try to lift the sash away from the skylight.

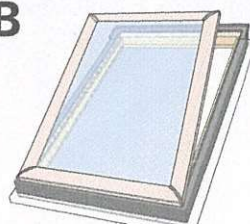
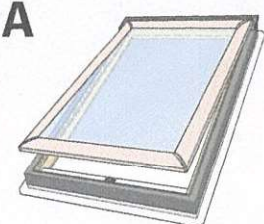
A: If the chain is disconnected at the bottom of the skylight, reconnect the chain to the sash.

B: If the sash and frame hinges are not properly engaged at the top of the skylight, make sure that the sash is properly engaged by trying to push or lift up the top of the sash near the hinge.

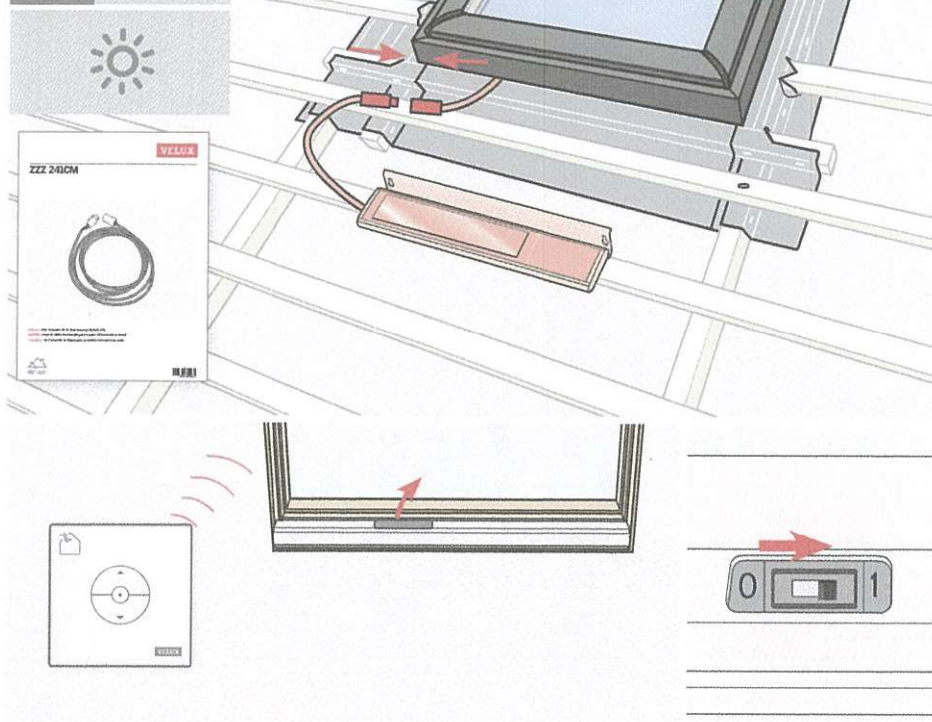
한국어: 주의: 스카이라이트 설치 중에 샷시를 제거하는 것은 권장하지 않습니다. 샷시를 제거한 경우 스카이라이트 프레임의 상단과 하단에 올바르게 부착되어 있는지 테스트합니다. 실내에서 작업하는 경우, 스카이라이트를 완전히 닫습니다. 제대로 부착되어 있는지 확인하려면, 바깥쪽으로 조심스럽게 밀어 보세요. 만약 지붕에서 작업해야 한다면, 스카이라이트를 완전히 닫으세요. 올바르게 부착되어 있는지 확인하려면, 스카이라이트에서 샷시를 조심스럽게 들어 올려보세요.

A: 스카이라이트 하단에서 체인을 분리한 경우 체인을 샷시에 다시 연결하세요.

B: 샷시와 프레임 경첩이 스카이라이트 상단에 제대로 체결되지 않을 경우, 경첩 근처의 샷시 끝을 밀거나 들어올려 샷시가 제대로 체결되었는지 확인해 주세요.



9a VSS



ENGLISH: Connect wire as shown and do not install the solar panel until the bottom flashing has been installed.

For steep roof pitches above 45° and for roofing materials with profile height above 50 mm, use wire extension kit ZZZ 241DM to relocate the solar panel and rain sensor as shown in the enclosed instructions for ZZZ 241DM.

⚠ Leave these instructions and the bag with wire extension kit ZZZ 241DM with the skylight until the flashing has been installed.

If not done already, turn on power and refer to instructions for the wall switch for registration and operation of skylight.

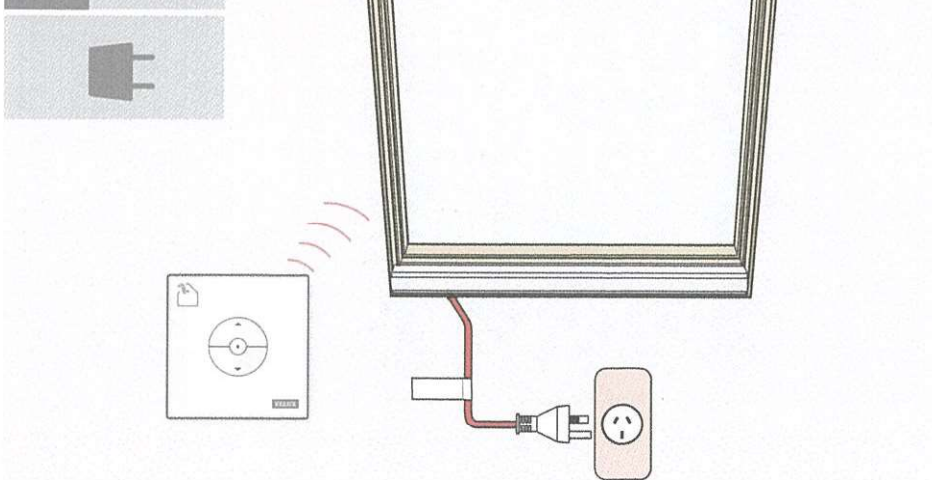
한국어: 그림과 같이 와이어를 연결하고 하단 후레싱이 설치될 때까지 태양광 패널을 설치하지 마세요.

45° 이상의 가파른 지붕경사 및 높이가 50mm를 초과하는 지붕마감재의 경우, 와이어 확장 키트 ZZZ 241DM을 사용하여 동봉된 ZZZ 241DM 지침과 같이 태양열 패널 및 레인센서를 재설치하셔야 합니다.

⚠ 시방서와 와이어 연장 키트가 있는 봉투는 후레싱이 설치될 때까지 절대 버리지 마세요.

아직 작업이 마무리되지 않은 경우, 스카이라이트의 전원을 켜고 스카이라이트 등록과 작동을 위해 월스위치 설명서를 참고하세요.

9b VSE



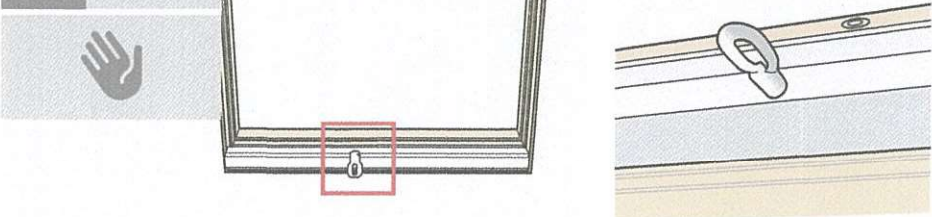
ENGLISH: Connect plug on power supply cable to approved electrical power outlet. The junction or outlet in/to which the skylight power supply cable is connected must be accessible for inspection when installation is complete.

Refer to instructions for the wall switch for registration and operation of skylight.

한국어: 전원 공급 장치 케이블의 플러그를 승인된 전원 콘센트에 연결하세요. 스카이라이트 전원 공급 장치 케이블이 연결된 연결 지점은 설치 후 검사가 가능해야 합니다.

스카이라이트 등록과 작동은 월스위치 설명서를 참고하세요.

9c VS

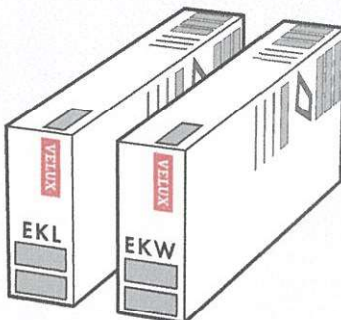
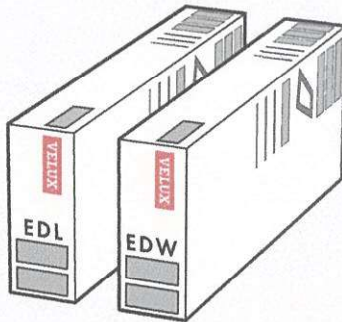
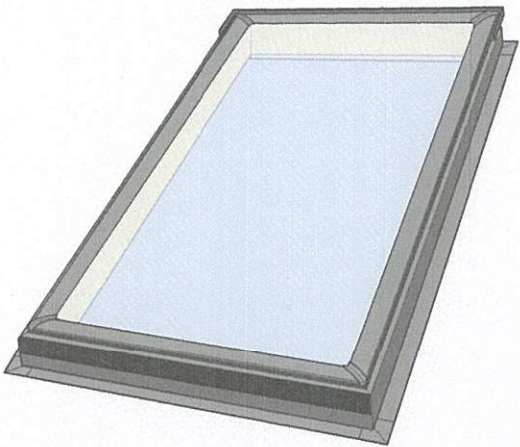


ENGLISH: Attach hook to operator.

한국어: 스카이라이트 고리를 설치하세요.

ENGLISH: For flashing information, see instructions supplied with the relevant flashing.

한국어: 후레싱에 관한 정보는 해당 후레싱과 함께 제공된 설명서를 참고하세요.



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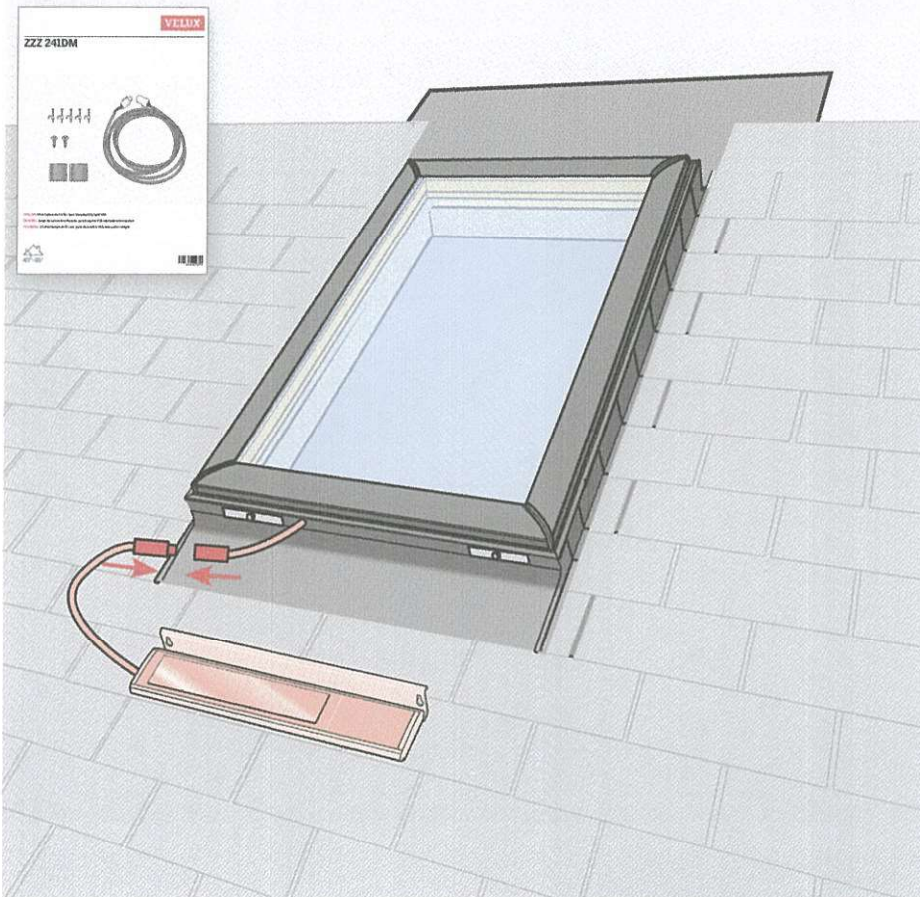
The solar panel of VSS is installed during installation of the flashing.

Install flashing at the bottom and sides only and then proceed with step 10 in these instructions.

VSS의 태양열 패널은 후레싱 설치 중에 설치됩니다.

하부와 측면에만 후레싱을 설치한 다음 이 설명서의 10단계를 따라 작업하세요.

10

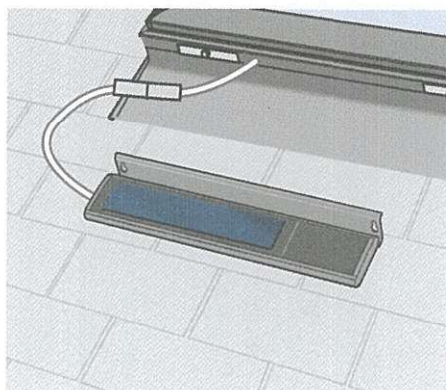


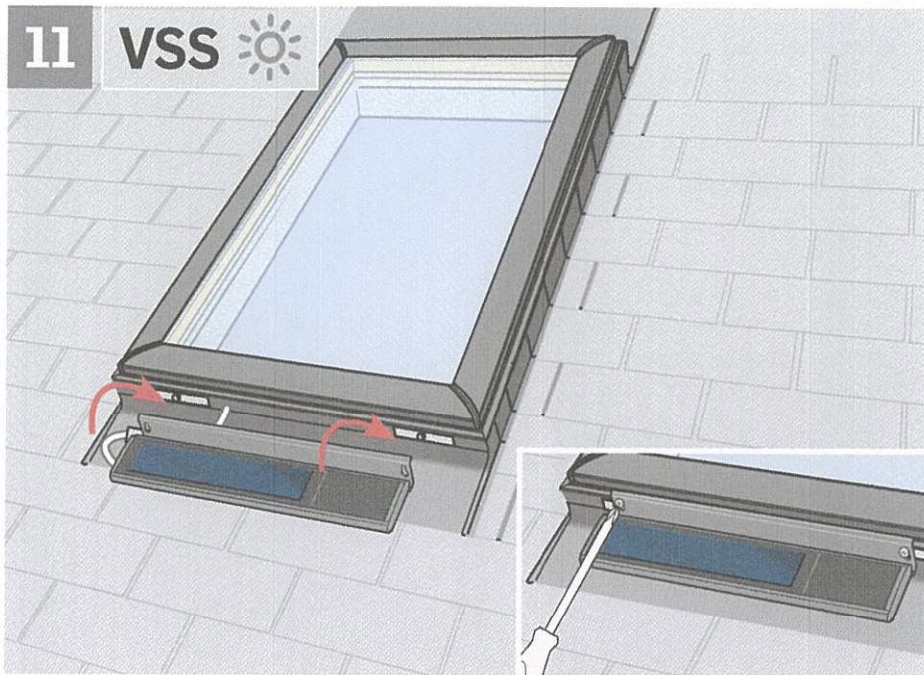
ENGLISH: If not done previously, connect wire as shown.

For steep roof pitches above 45° and for roofing materials with profile height above 50 mm, use wire extension kit ZZZ 241DM to relocate the solar panel and rain sensor as shown in the enclosed instructions for ZZZ 241DM.

한국어: 이전에 와이어를 연결하지 않은 경우 그림과 같이 와이어를 연결하세요.

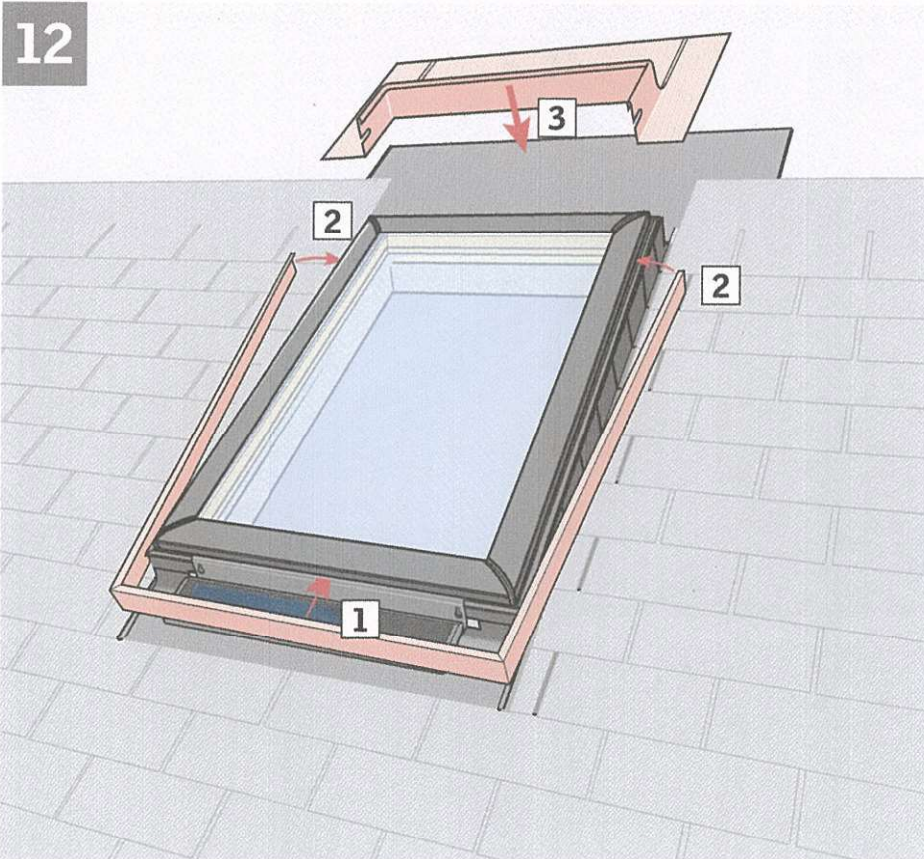
45° 이상의 가파른 지붕경사 및 높이가 50mm를 초과하는 지붕마감재의 경우, 와이어 확장 키트 ZZZ 241DM을 사용하여 동봉된 ZZZ 241DM 설명서와 같이 태양광 패널 및 레인 센서를 재배치하세요.





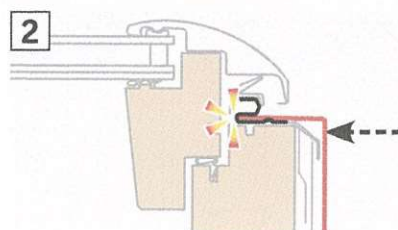
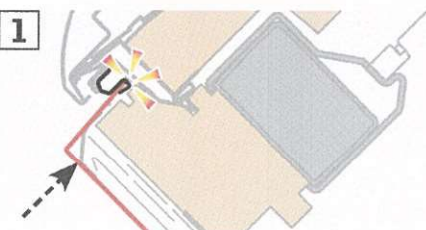
ENGLISH: After installing bottom and side flashing parts, install solar panel as shown and secure with screws.

한국어: 하단 및 측면 후레싱을 설치한 후, 그림과 같이 태양광 패널을 설치하고 나사못으로 고정하세요.



ENGLISH: Reinstall cladding (1), (2) and continue installation of flashing (3) as shown in the instructions provided with the flashing.

한국어: 샤시(1), (2)를 다시 설치하고 후레싱과 함께 제공된 설명서에 따라 후레싱(3)을 계속 설치하세요.



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INSTALLATION INSTRUCTIONS FOR VELUX/SENS DECK MOUNTED SKYLIGHT ©2009, 2019 VELUX GROUP/VELUX THE VELUX LOGO, VELUX INTEGRAL® IS HOMESCENTRAL AND THE IS-HOMESCENTRAL LOGO ARE REGISTERED TRADEMARKS USED UNDER LICENCE BY THE VELUX GROUP



FORM 7 CODE COMPLIANCE CERTIFICATE NUMBER BCon21/0063

Section 95(3), Building Act 2004

Mrs P Garland
31 Halswell Street
Whanganui 4500

**Building Consent
No:** BCon21/0063

Issue Date: 05/01/2023

The building:

Street address of building:	Legal description of land where building is located:
31 Halswell St WHANGANUI	LOT 26 BLK I DP 936 0.0506 Ha LOT 24 BLK I DP 936 0.0506 Ha
Building name:	Location of building within site/block number:
Level/unit number:	Current, lawfully established, use: [include number of occupants per level and per use if more than 1]
	Single Detached Residential
Year first constructed:	
1902	

The owner:

Name of Owner:	
Mrs P Garland	
Mailing address:	Street Address/registered Office:
31 Halswell Street Whanganui 4500	31 Halswell Street Whanganui 4500

Phone numbers:

Landline:		Mobile:	0272268585
Daytime:		After hours:	
Facsimile number:			
Email address:		Website:	

First point of contact for communications with the building consent authority:

Contact Person:	
Mr PE Clark	
Mailing address:	Street Address/registered Office:
65D Portal Street, Durie Hill, Whanganui 4500	65D Portal Street, Durie Hill, Whanganui 4500

Phone number:

Landline:		Mobile:	0274457573
Daytime:	063453826	After hours:	
Facsimile number:			
Email address:		Website:	

Building Work

Building consent number:	Issued by:
BCon21/0063	Whanganui District Council
Type of Work	
Single Detached Residential	
Description of Work	
Additions & Alterations to the Existing Dwelling (21m2).	
Intended Life	Estimated Value
Indefinite but not less than 50 years.	\$180000.00

Code compliance:

The building consent authority named below is satisfied, on reasonable grounds that the building work complies with the building consent.

*Compliance schedule

There are no specified systems in this building.

This is a final Code Compliance Certificate issued in respect of all of the building work under the above Building Consent.

Signed for and on behalf of the Whanganui District Council:



GJ Hoobin
Building Control Manager