WAIMAKARIRI DISTRICT COUNCIL

215 High Street
Private Bag 1005
RANGIORA 7440
New Zealand

Phone: (03) 311 8900
or: (03) 327 6834
Fax: (03) 313 4432
www.waimakariri.govt.nz

Form 7

Code compliance certificate 131056

Section 95, Building Act 2004

The building

Street address of building: 4 Robb Place, Kaiapoi

Legal description of land where building is located: LOT 130 DP 461956

Valuation number: 2172500259

Building name:

Location of building within site/block number:

Level/unit number:

Current, lawfully established, use:

Year first constructed:

The owner

Name of owner: Finlayson Cameron Brian

Contact person:

Mailing address: 105 Don Street, Invercargill 9810

Street address/registered office:

Phone number: Landline: Mobile: 0277426595

Daytime: After hours:

Facsimile number:

Email address: cam.finlayson@portabuild.co.nz

Website:

First point of contact for communications with the council/building consent authority:
Full Name: Cameron Finlayson

Mailing Address: C/- Versatile Homes & Buildings, 3 Springs Road, Sockburn, Christchurch 8042

Phones:: 033489093

Email: georgie.fraser@versatile.co.nz

Building work

Building consent number: 131056

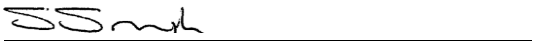
Consent description: Dwelling with attached garage

Issued by: Waimakariri District Council

Code compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent



Signature

Building Administration

On behalf of: Waimakariri District Council

Date: 6/12/13

WAIMAKARIRI DISTRICT COUNCIL

WORKING FIL

TRIM Record Number

131206113826
BC131056.03

AS BUILT TRUSS LAYOUT

Included with Submitted Documents ☐

Required – from Truss Manufacturer at least 10 working days prior to Pre-Roof Inspection ☑

SECTION 37 OF THE BUILDING ACT APPLIES TO THIS CONSENT ☐

BC NO: 131056 WDC REC

OWNER: Cameron Finlayson
PHONE: 0277426595

AGENT: Versatile Homes & Buildings
PHONE: Georgie Fraser 033489093

DESIGNER: Richard Mowbray 033491280
SITE: **Lot 130 Stage 2A RC126220 Butchers Rd Kai**
BUILDER: Rob

TYPE: New (& prebuilt) House, Unit, Bach, Crib

Scanned / Electronic ☑
Entered in TRIM ☑
Costing Sheet in TRIM ☑
Emailed to PIMs ☑
Entered in Sharepoint ☑

Date Processed: 6/13

Processed By: Chris K

ENDORSEMENTS (Any special conditions/endorsements on the Building Consent and/or documents that must be drawn to the attention of the owners/subcontractors)

These are noted on the left inside page (see over)

PROPOSED ORDER AND NUMBER OF INSPECTIONS REQUIRED	PASS	FAIL	INSPECTED BY	DATE	LPB#	BUILDING CLASS
Compacted hardfill pre DPM	✓		MM	29/7/13		
foundation / floor slab	✓		A.K.	9/8/13		
structure preroof prewrap	✓		JT	30/8/13		
fire rating body wall	✓		JT	16/9/13		
Building wrap and sill tape	✓		JT	16/9/13		
mid light Veneer	✓	✓	RB	2/10/13 3/10/13		
prelie and plumbing	✓	✓	RB	11/10/13		
prestopping	✓		WH	15/10/13		
drains	✓		JT	6/11/13		
10 FINAL	✓		RB	23/11/13		
Wet Area Testing	✓	✓	JT PJ	6/11/13 c/w/o		

PROJECT COMPLETE/ CCC APPROVED -

INSPECTOR'S SIGNATURE: _____ NAME: _____ DATE: _____

WAIMAKARIRI DISTRICT COUNCIL

INSPECTION ISSUES

INSPECTION ISSUES NOTED DURING PROCESSING:

• Engineer to inspect excavations & pre pour Fdn/slab

ALTERNATIVE SOLUTION/S:

AMENDMENTS (AFTER CONSENT ISSUE):

DATE: 28/8/13 truss as built layout & Sizings

11/11/13. On Site amendment. Wet Area Testing information provided along with confirmation of Villaboard sheet fixings. Pat Jones

ENGINEER TO INSPECT: cut/fill of building platform. pre pour of Fdn/slab

SURVEYOR REQUIRED (PEGGING / FFL / RECESSION PLANE):

FIRE ENGINEER TO INSPECT:

ITEMS FOR COUNCIL TO INSPECT (SUCH AS EFFLUENT/POOL FENCING):

CONSTRUCTION REVIEWS REQUIRED TO SUPPORT PRODUCER STATEMENT DESIGN AND INSPECTION:

PSA from Eng. for Fdn design, electrical certificate, Plumbing pressure test.

WAIMAKARIRI
DISTRICT COUNCIL

File Stripping Check Sheet

BC 131056

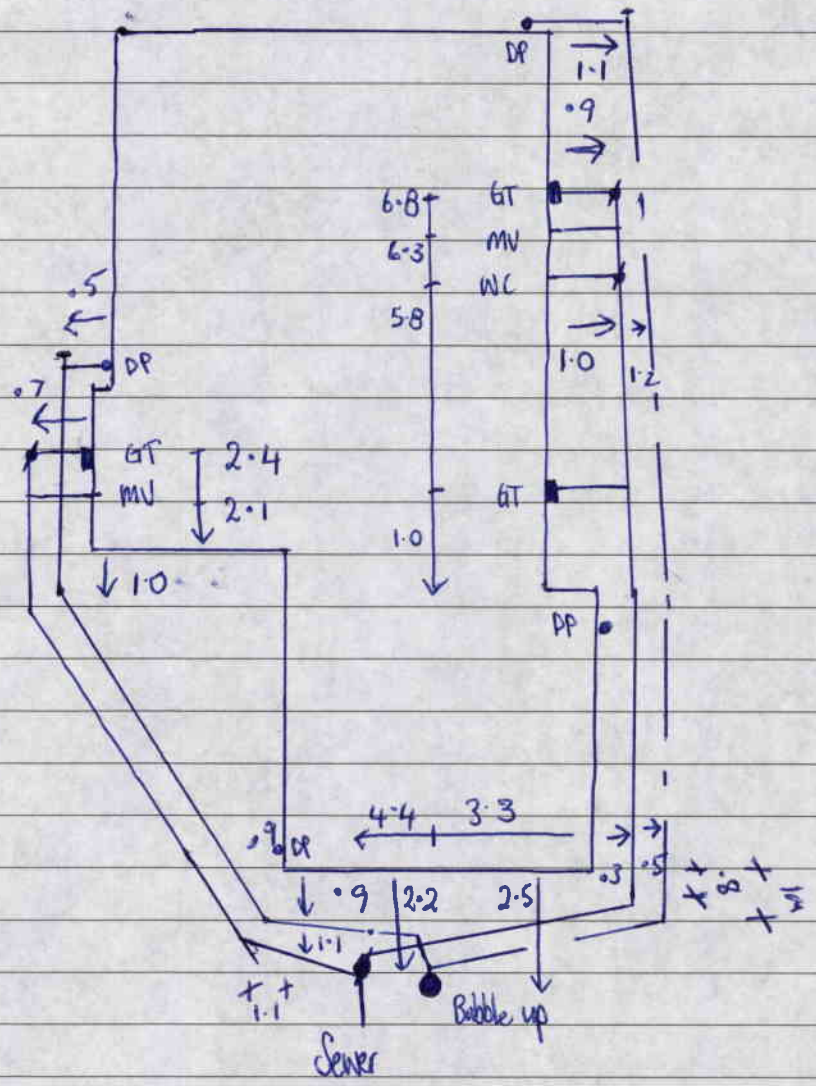
- ☑ All Correspondence
- ☑ Audit Check Sheets
- ☑ CCC – Signed
- ☑ Working File Cover
- ☑ Entire Contents inside the Working File Cover
- ☑ As Built Plans
- ☑ Drainage Plans (both onsite & scaled Drawings)
- ☑ Specifications if any changes (see Working File Cover)
- ☑ All White Inspection Notices (as they may have been written on, see below for process of white Inspection Notices)
- ☑ All site photos
- ☑ All Processing Check sheets & Correspondence
- ☑ All Amendments
- ☑ If in doubt – INCLUDE IT
- ☑ All relevant information has been included
- ☑ Completed file stripping check sheet attached

Signed _____

19- 12. 13.

652087

lot 130 Silverstream
On Grade drainage
Sewer and Storm Grade 1:100
Drainlayer R. TAPP 24836.



COLLINS A4/50 DL NCR

WAIMAKARIRI
DISTRICT COUNCIL

215 High Street
Private Bag 1005
RANGIORA 7440
New Zealand

Phone: (03) 311 8900
or: (03) 327 6834
Fax: (03) 313 4432
www.waimakariri.govt.nz

28 November, 2013

Cameron Finlayson
C/- Versatile Homes & Buildings
3 Springs Road
Sockburn
Christchurch 8042

RE: Building Consent Application No. 131056
Dwelling with attached garage
1 Butchers Road, Kaiapoi
2173041500

Dear Cameron Finlayson,

We completed a final inspection of the above building project and have audited the working file.

During this audit or as part of the site inspection we have found that we require the following information to be provided or remedial work to be completed prior to the issue of the Code Compliance Certificate. The outstanding items are listed below.

1. Please complete and return the attached Form 6. 03/12/13
2. Please complete and return the attached Producer Statement Pipework Testing.
3. Please provide an Electrical Certificate.
4. Please have the engineer provide a Producer Statement Construction Review for the foundation/slab.

The Code Compliance Certificate cannot be issued until all of these items have been addressed to our satisfaction. Your assistance in having this attended to in a timely manner would be greatly appreciated.

You should also note that any additional inspections will have to be paid for prior to the release of the CCC.

In the interim if you have any queries please contact me.

Yours faithfully

SSmith

Sarah Smith
Building Consent Administration

Accredited as an International 'Safe Community'
by the World Health Organisation Collaborating Centre on Community Safety.

WAIMAKARIRI DISTRICT COUNCIL

File sign off for issue of a CCC

Job Number 131056 Final By Robert Auditor Mike

Project Description New Dwelling + Att Garage

Items highlighted (**) are to be sent to the council.

Legend: ✓ Pass — N.A ✗ Required

Audit items	
Form 6, signed and dated**	✗
Final landscaping photos**	✓
Heating check sheet**	—
Drainage Plan** R. Tapp	✓
Exterior Plaster PS3**	—
Gas Certificate**	—
Electrical Certificate**	✗
Drain layers Reg No: 24836	✓
Plumbers Reg No:	✗
Plumber pressure Test PS4** Consents from 1.11.07	✗
Tanking PS3** B. Nelson	✓
Cladding type/s as per plans	✓
Drain layers Eff. PS3**	—
W.D.C effluent approval & Fenced	—
Well water test**	—
Engineers site notes**	—
Engineers PS4**	✗
Membrane warranty**	—
Membrane Roof Pitch	—
Membrane installers PS4**	—
Construction Statements** tanking	✓
Inspection Notices**	✓
Consent fees owed	—
CCC** — Inspection Notices**	—

Jobs on HOLD outstanding items (list)

1. Form 6
2. Plumbers pressure test declaration
3. Electrical cert.
4. Engineers PS4 for foundation / slab

WAIMAKARIRI DISTRICT COUNCIL

File sign off for issue of a CCC

Commercial
Access & Facilities
FPS PS4**
FPIS Certificate**
HVACPS4**
Compliance Schedule application**
Surveyors cert.**

- **Read File – PIM Conditions.**
  Check above with site notes and working file.
- **Check all site notices, rearrange file with notes in date sequence.**
  Site File to be arranged in
  - RH Side – Inspection notes in date order, stapled twice along top
  - LH side – Drainage plan, PS4's, Energy Certificates etc
  - Put all remaining documentation in date sequence, including plans and specs, bind and place in working file.
- **Follow up all failed inspection items thoroughly, sign and date decision and briefly describe outcome.**

Use space on back of sheet to write up any back ground notes ie: where a follow through of a site inspection requirement is not 100% clear from another reinspection but has been conveyed in other inspections. Also note any discussion with field officer/other staff to show how acceptance was achieved.

Inspection notices correctly completed and signed off (Yes) No

Outstanding Items (Yes) No OK for CCC Yes (No)

(signed) _____ Date 27/1/13

WAIMAKARIRI DISTRICT COUNCIL

NOTICE OF INSPECTION
FINAL INSPECTION

Building Act 2004 - Section 90

6653

Owners Name FINLAYSON

Site Address 88B PL

Project Description NEW HOME

To the Owner / Agent / Occupier / Contractor

Local Auth. Consent No. 131056

Prime Job No.

Officer ROBERT BAILEY

Phone No. 0274538139

How Notified: ☑ Notified Direct ☐ Left on Site

Please take note that on the 23 / 4 / 13 at 11 am/~~pm~~ this site was inspected pursuant to the Building Act 2004

	COMPLIES	YES	NO
Internal			
1 Safety glass		☑	☐
2 Window restraints		~~☑~~	~~☐~~
3 Window identification Kylock		☑	☐
4 Suitable natural ventilation & light		☑	☐
5 Smoke detectors		☑	☐
6 Plumbing finish		☑	☐
7 Shower leak test		☑	☐
8 Fixtures secured & sealed		☑	☐
9 Impervious floor coverings		☑	☐
10 Mechanical ventilation to exterior		☑	☐
11 Gas storage to outside		~~☑~~	~~☐~~
12 Gas hob protection		~~☐~~	~~☐~~
13 Heating unit inspected HEAT PUMP		☑	☐
Plumbing			
1 HWC (Type & size) 250 FGL		☑	☐
2 Seismic restraint		☑	☐
3 Safe Tray		~~☑~~	~~☐~~
4 Tempering valve		☑	☐
5 HWC valving		☑	☐
6 Hot water drain points		☐	☐
7 Water Temperature 51 degrees		☑	☐
8 ~~Header tank, restrained / tray~~ / ~~overflow~~ / lagging		☑	☐
9 Floor waste gully water seal		☑	☐
10 Water Isolation Valve		☑	☐
11 Open Vent		~~☑~~	~~☐~~
Stairs & balcony			
1 Treads & risers		☐	~~☐~~
2 Handrail – height & dimension		☐	☐
3 Hand rail bracket		☐	☐
4 Balcony / Handrail / Barrier		☐	☐
5 Overflow relief		☐	☐

	COMPLIES	YES	NO
Energy			
1 Gas / Diesel tank siting		☐	☐
2 Storage protection		☐	☐
3 Capacity		☐	☐
4 Automatic shut off		☐	☐
5 Gas storage ventilation		☐	☐
Roof space			
1 Ceiling insulation		☑	☐
2 Down light suitability		☑	☐
3 Solar panel support/fixing		~~☑~~	~~☐~~
4 Roof underlay / laps		☑	☐
5 Ducting suitably fixed & connected		☑	☐
6 Chimney restraints		~~☑~~	~~☐~~
7 Fire break / Fire blanket		~~☑~~	~~☐~~
Exterior			
1 FGL		☑	☐
2 Paved areas		☑	☐
3 ORG		☑	☐
4 S/W discharge		~~☑~~	~~☑~~
5 S/W sumps & Strip Drains		~~☑~~	~~☐~~
6 Size & location of TV		☑	☐
7 Finished height of GT		☑	☐
8 Mechanical vents to external & operational		☑	☐
9 Weep holes / vents sealed (gas)		~~☑~~	~~☐~~
10 Weep holes / ventilation gaps		☑	☐
11 Soffit / windows sealed		☑	☐
12 Window flashings / facings		☑	☑
13 Weathertightness		☑	☐
14 Roof cladding suitably fixed		☑	☐
15 D/P connected		☑	☐
16 Snow straps / boards		~~☑~~	~~☐~~

	COMPLIES	YES	NO
17 Vermin proof (eg: Garage door)		☑	☐
18 Roof penetrations sealed		☑	☐
19 Solar Panel Flashing		~~☑~~	~~☐~~
20 Effluent Field inspected		~~☑~~	~~☐~~

	SUPPLIED	REQUIRED
General		
1 Form 6	☐	☑
2 As built drainage plan	☑	☐
3 Effluent field PS3	~~☐~~	~~☐~~
4 Gas certificate	~~☐~~	~~☐~~
5 Electrical certificate	☐	☑
6 Structural engineer site notes	~~☐~~	~~☐~~
7 Structural engineer PS4	~~☐~~	~~☐~~
8 Exterior cladding PS3	~~☐~~	~~☐~~
9 Tanking PS3	☑	☑
10 Heating Unit PS3	~~☐~~	~~☐~~
11 Water test (Potable)	~~☐~~	~~☐~~
12 Plumbing Pressure Test	☐	☑
13 Solar PS3	~~☐~~	~~☐~~
14 Commercial Final Checklist	~~☐~~	~~☐~~
15 Butyl Membrane PS3	~~☐~~	~~☐~~
16 Hazardous Goods Cert	~~☐~~	~~☐~~
17 R M A inspection completed	~~☑~~	☐

Inspection	Passed	☑
	Failed	☐
Re-Inspection	Yes	☐
	No	☑

Signature RB

NB: This is not a Code Compliance Certificate

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432 Call free 0800 724 2378 Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

52909

Owners Name: C Finlayson

Local Auth. Consent No. 131056

Site Address: 1 Butchers Rd
Lot 130

Officer: John Thornton

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 6 / 11 / 13 at 1 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: WET Area Tanking

Project Description: Dwelling + Att Garage

Inspection Notes: Passed Items:

- 75mm kobb created to shower perimeter. ✓
- orange coloured membrane apr 1.8m high ✓
- Membrane taken to drain apr 50mm onto floor ✓
- Reinforced bandaging in place to corners and edges. ✓

Failed Item: On Site amendment.
Information provided (saved to Trim 11/11/13) Paul Jones.

✓ Shower system changed from acrylic shower to tiled shower by owner. Previous Inspector not made aware of this for pre Stop inspection but confirms Liners not in place therefore 100mm nailing pattern not confirmed for tiling. Re nail Lining @ 100mm ctrs and pre Stop reinspection required when done. When done Wet Area Tanking Inspection will then be required when rectified

✓ Specifications for product used required

✓ PS3 for Final when reinspected

All work as per consent documents	☐ Yes	☑ No
Amendments required	☐ Yes	☑ No
Reinspection Required	No ☑ Yes	☐ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

52902

Owners Name: C. Finlayson

Local Auth. Consent No. 131056

Site Address: 1 Butchers Rd Kaiapoi Lot 130

Officer: John Thornton

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

To the Owner / Agent / Occupier / Contractor

Please take note that on the 6 / 11 / 13 at 7.30 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Drains

Project Description: Dwelling + Att Garage

Inspection Notes: Passed Items:

- 100mm ϕ uPVC Soakwater @ 1:140 grade to lateral ✓
- 90 mm ϕ uPVC Stormwater @ 1:100 grade to B.U.S. ✓
- to Herb outlet. ✓
- All drains bedded in chip. ✓
- Water test on and holding. ✓
- Wastes seal @ gully risers ✓

* NO file @ time of Inspection.

Site Instructions:

✓ As laid plan to be provided with Drainlayers details!

Richard Tapp Reg # 24836 ✓
On Grade Drainage. NF.

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

51775

Owners Name: C Farlayson

Local Auth. Consent No. 13/056

Site Address: Lot 130 Silverstream (Robb Place)

Officer: Wes Holland

To the Owner / Agent / Occupier / ~~Contractor~~

How Notified
~~Notified~~ Direct ☑ Left on Site ☐ Faxed

Please take note that on the 15 / 10 / 13 at 10:35 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Pre Slab

Project Description: Dwelling + Attached Garage

Inspection Notes: Passed Items.

- 10m Standard Gib to walls ✓
- 8m Standard Gib to ceilings ✓
- 10m Gib Eyreline to garage fire wall. ✓
- Ceiling fixed off as diaphragm to living/dining/kitchen. ✓
- 10/13m Gib Aqualine to walls & ceiling of bathroom. ✓
- Bracline GIB to BI brace elements ✓
- All GS brace elements in place. ✓
- Brace elements fixed off as per manufacturers fixing requirements ✓

Site Instruction
- Complete Hardiflex linings to wet floor shower. to take acrylic liner. ✓

All work as per consent documents	☐ Yes	☑ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

50471

Owners Name: FINLAYSON

Local Auth. Consent No. 131056

Site Address: ROOB PL

Officer: ROBERT BAILEY

To the Owner / Agent / Occupier (Contractor)

How Notified

☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 11 / 10 / 13 at 8 am/~~pm~~ this site was inspected pursuant to Building Act 2004

Inspection Type: PRELINE

Project Description: NEW HOUSE
RAISED

Inspection Notes: 90 x 45 FRAMING MOISTURE 12 - 16% IN TWENTY PLACES ✓
METAL CEILING BATTENS ✓
2.6 PINK WALL BATTS · 3.6 PINK CEILING BATTS ✓
SAFETY GLASS TO BATHROOM WINDOW ✓
15-20. HOT AND COLD FEED. ✓

~~PASSED~~ NOW COMPLETED AT 4 pm 11/10/13 ✓
COMPLETE AIR SEALS AROUND GARAGE DOOR PANEL, FILL HOLES AROUND WINDOW
NAIL METAL CORNERS IN SHOWER AT 300 ctrs.
LAGG COLD WATER PIPE IN BED (2) WALL
HANDI BRACES TO SIT FLAT ON BOTTOM PLATES, AND SCREWED FLAT TO STUDS ✓
CEILING BATTS PULLED UP BY TPS WIRING
SIT FLAT DOWN TO BATTENS.
LAG PIPES IN GARAGE.

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

50856

Owners Name: FINLAYSON

Local Auth. Consent No. 131056

Site Address: ROBB PL

Officer: ROBERT BAILEY

To the Owner / Agent / Occupier / Contractor

How Notified
❑ Notified Direct ☑ Left on Site ❑ Faxed

Please take note that on the 3 / 10 / 13 at 4 ~~am~~/pm this site was inspected pursuant to Building Act 2004

Inspection Type: MHB REINSPECTION

Project Description: NEW HOUSE

PASSED

Inspection Notes: D.P. NOW BATTENS UNDER WINDOW, KICK-OUT IN PLACE ✓

30ₘ CAVITY TO HAVE WEEP HOLES AT 400c TOP AND BOTTOM TO ALLOW FOR REDUCED ✓ CAVITY.

SITE INSTRUCTION

PROVIDE SUPPORT TO BRICK OVERHANG AT FRONT DOOR

HANDI BRACES TO SIT FLAT ON BOTTOM PLATES, TIGHTEN BOLTS. ✓

OK TO FINISH BRICKS.

All work as per consent documents	☑ Yes	❑ No
Amendments required	❑ Yes	☑ No
Reinspection Required	❑ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

44691

Owners Name: FINLAYSON

Local Auth. Consent No. 131056

Site Address: ROSS PL

Officer: ROBERT BAILEY

To the Owner / Agent / Occupier / Contractor

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 2 / 10 / 13 at 8 am/~~pm~~ this site was inspected pursuant to Building Act 2004

Inspection Type: MHB

Project Description: NEW HOUSE

PASSED

Inspection Notes: RIGID CEILING BATTENS IN PLACE ✓

CAVITY, MOST 45-50m, CLEAN / CLEAR AT TIME OF INSPECTION. ✓

WEEP HOLES AT 800m MAX ✓

DPC ABOVE WINDOWS AND DOORS ✓

WALL BARS IN PLACE, S/S SCREW FIXINGS AT 400c ✓

BRICK TIES EVERY THIRD COURSE, SCREWED TO STUDS ✓

METER BOX SEALED TO WRAP ✓

FAILED

BRICKS OVERHANG AT FRONT DOOR FOUNDATION ✓

SCREW BOLTS TO TIGHTEN TO HANGER BRAC. ✓

CAVITY 30- ALONG GARAGE WALL AT REAR. ✓

DPC CURVED INTO BOTTOM OF WINDOWS, REMOVE AND FIT AS CONSENT PLANS ✓

15- KICKOUT TO BE AT BASE OF DPC ✓

OK TO BRICK ALL EXPECT SILLS AND REAR GARAGE WALLS.

All work as per consent documents	☐ Yes	☑ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☑ Yes	☐ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

49505

Owners Name: C Finlayson

Local Auth. Consent No. 131056

Site Address: Lot 130
1 Batchers Rd Kaiapoi

Officer: John Thornton

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 16 / 9 / 13 at 9 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: FIRE RATED Boundary Wall

Project Description: Dwelling + Att Garage

Inspection Notes: Passed Items

- 140 x 45 studs @ 600 ctrs with 2 handibracs each stud ✓
- Solid Blocking hard up to Purlin ✓
- Thermakraft covertek 407 wrap in place ✓
- 6mm Hardies in place and fixed as per specifications. ✓
- All as per details sheet 9. ✓

Site Instructions:

Rel 2/10/13

- Tighten screws to framing in 8 central handibracs
- Complete Rondo ceiling Battens ✓

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

49506

Owners Name: C. Finlayson

Local Auth. Consent No. 131056

Site Address: Lot 130
1 Butchers Rd Kaiapoi

Officer: John Thornton

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 16 / 9 / 13 at 9.15 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Building Wrap + Sill Tape

Project Description: Dwelling + Att. Garage

Inspection Notes: Passed Items

- Fastwrap underlay in place well fixed. ✓
- Blue banding in place centre of Dwangs. ✓
- Meter Box in place fixed to 2p Ply and taped to wrap. ✓
- Flexible flashing tape to sills + Heads as per Manufacturers specifications ✓
- PVC Soakers + Butterflies in Place. ✓
- Mulseal to foundation + Brick Rebate. ✓
- All Penetrations taped to wrap. ✓

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

49365

Owners Name: C Finlayson

Local Auth. Consent No. 131056

Site Address: 1 Butchers Rd
Lot 130

Officer: John Thornton

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 30 / 8 / 13 at 9.45 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Structure Pre Roof

Project Description: Dwelling + Att Garage

Inspection Notes: Passed Items:

- 90 X45 SG8 Caseframe Studs @ 600mm ctrs ✓
- DPC to Bottom Plate ✓
- SG8 70 X45 Purlins @ 900mm ctrs + Blue Screwed ✓
- 150X25 Valley Boards H3.2 Supported @ ends. ✓
- 140 X45 SG8 framing to Fyrewall solid Blocking @ top and Hendibrac Pair to Each Stud ✓
- All Bottom plate fixings as per Plans ✓
- EP Ply Bracing in place + fixed as per Specifications ✓
- All truss lintel + Stud to top Plate fixings in place as per Sheet 13 + truss Manufacturers specs. ✓
- Top Plate connections in Place. ✓

Nice Job Thank You!

Site Instructions:
- Gib Roads Bottom chord Restraints to fit Direct fix @ 600 ctrs ✓

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

46019

Owners Name: Finlayson

Local Auth. Consent No. 131056

Site Address: (Lot 130) 1 Butchers Rd

Officer: Andrea Kendall

To the Owner / Agent / Occupier / Contractor

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 09 / 08 / 13 at 10 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Foundation / floor slab.

Project Description: Dwelling.

Inspection Notes: Passed Items :

- Lot 130 confirmed. ✓
- Dwelling sited as per site plan. ✓
- D.P.M to full slab area. ✓
- Polystyrene waffle slab layout as per sheet S100. ✓
- 300mm wide edge beam & internal thickening with 4/HD12 bars & R6 links @ 150mm crs as per sheet S101, details F1 & F2. ✓
- 1/HD12 bar on chairs in 100mm wide ribs. ✓
- HD12 floor starters @ 600mm crs ✓
- Ductile mesh to full slab area on chairs. ✓
- Copper H.W.C relief drain lagged in position ✓
- Waste pipes laid with gradient & sleeved in place ✓

Site Instruction :

- Engineer to inspect & pass slab prior to concrete placement. ✓

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI DISTRICT COUNCIL

NOTICE OF INSPECTION

Section 90 Building Act 2004

43932

Owners Name: Finlayson

Local Auth. Consent No. 131056

Site Address: Lot 130 Silverstream

Officer: mark mcaughlin

To the Owner / Agent / Occupier / Contractor

How Notified
❑ Notified Direct ☑ Left on Site ❑ Faxed

Please take note that on the 29 / 7 / 13 at 11:20 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Compacted Hardfill

Project Description: New dwelling

Inspection Notes: Passed Items

- Site stripped ✓
- Compacted hardfill in place. Heel test ok 10 places ✓
- Crusher dust layer approx 10 - 20 mm ✓
- No Formwork started ✓

Site instructions

- Engineer to inspect & issue PS4
- ensure FFL meets requirements of subdivision
- Siting to be confirmed at slab inspection

All work as per consent documents	☑ Yes	❑ No
Amendments required	❑ Yes	☑ No
Reinspection Required	❑ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI DISTRICT COUNCIL

PLEASE ATTACH INSPECTION NOTES HERE

Information saved to Trim 11/11/13.
Ralf Jones
Tanking Information.

Memorandum from licensed building practitioner: Record of building work

Section 88, 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: Lot 120 Silverstream	
Suburb:	
Town/City: Kaiapoi	Postcode:

THE PROJECT
Building consent number: BC 131056

THE OWNER(S)	
Name(s): Cameron Finlayson	
Mailing address: 4 Robb Pl	
Suburb: Silverstream	PO Box/Private Bag:
Town/City: Kaiapoi Chch	Postcode:
Phone number: 027 742 6595	Email address:

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK

PRIMARY STRUCTURE

Work that is restricted building work	Description of restricted building work	Carried out or supervised
Tick ✓	If necessary, describe the restricted building work.	Tick ✓ whether you carried out the restricted building work or supervised someone else carrying out the restricted building work.
Foundations and subfloor framing ☐		○ Carried out ○ Supervised
Walls ☐		○ Carried out ○ Supervised
Roof ☐		○ Carried out ○ Supervised
Columns and beams ☐		○ Carried out ○ Supervised
Bracing ☐		○ Carried out ○ Supervised
Other ☐		○ Carried out ○ Supervised

EXTERNAL MOISTURE MANAGEMENT SYSTEMS		
Work that is restricted building work	**Description of restricted building work**	**Carried out or supervised**
Tick ✓	If necessary, describe the restricted building work.	Tick ✓ whether you carried out the restricted building work or supervised someone else carrying out the restricted building work.
Damp proofing ☐		○ Carried out ○ Supervised
Roof cladding or roof cladding system ☐		○ Carried out ○ Supervised
Ventilation system (for example, subfloor or cavity) ☐		○ Carried out ○ Supervised
Wall cladding or wall cladding system ☑	Shaver lining 9mm Villa Board Fitted as per James Hardie Installation Instruction. Details Attached	✓ Carried out ○ Supervised
Waterproofing ☐		○ Carried out ○ Supervised
Other ☐		○ Carried out ○ Supervised

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

Name: Michael Hanson/John Hanson	LBP number: 105690 105692
Class(es) licensed in: Carpentry	
Plumbers, Gasfitters and Drainlayers registration number (if applicable):	
Mailing address (if different from below): 128 Leeston Rd. RD4	
Street address/Registered office: The Springston CLCh	
Suburb:	Town/City:
PO Box/Private Bag	Postcode:
Phone number: (03) 3295140	Mobile: 0274838906
After hours:	Fax:
Email address:	Website:

DECLARATION

I Mike & John Hanson carried out or supervised the restricted building work recorded on this form.

Signature: M Hanson J P Hanson

Date: 7/11/2013 7/11/2013

5.3 FIXING TO FRAMED WALLS

Untiled walls

Where Villaboard Lining is to be left untiled, the sheets can be fixed with fasteners or a combination of fasteners and adhesive, see Figures 7 and 8 respectively.

Figure 7: Fastening to wall frames

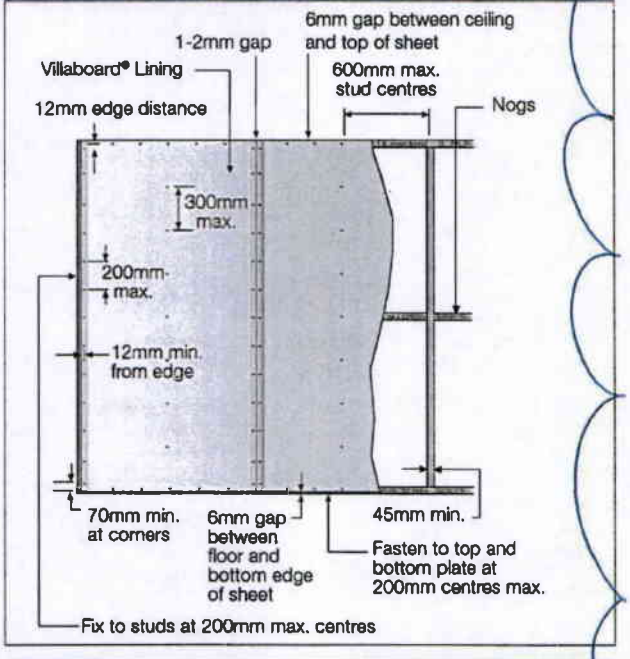
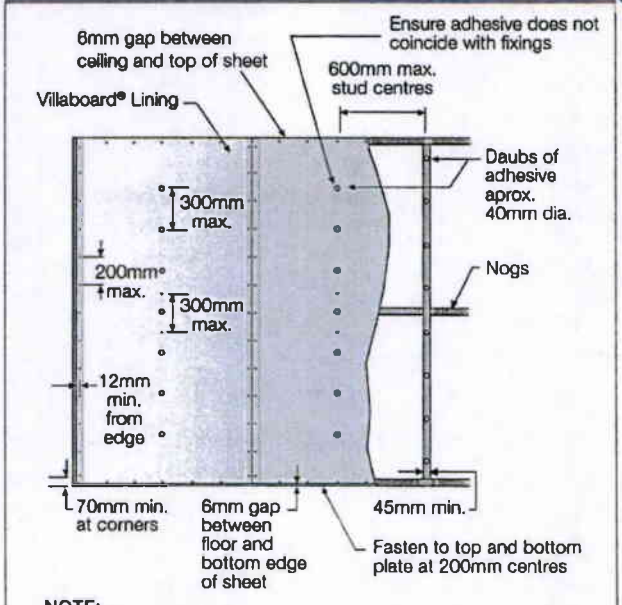


Figure 8: Fastener / adhesive fixing to wall frames



NOTE:
Fasteners required at vertical and horizontal sheet edges and adhesive infield of sheet only.

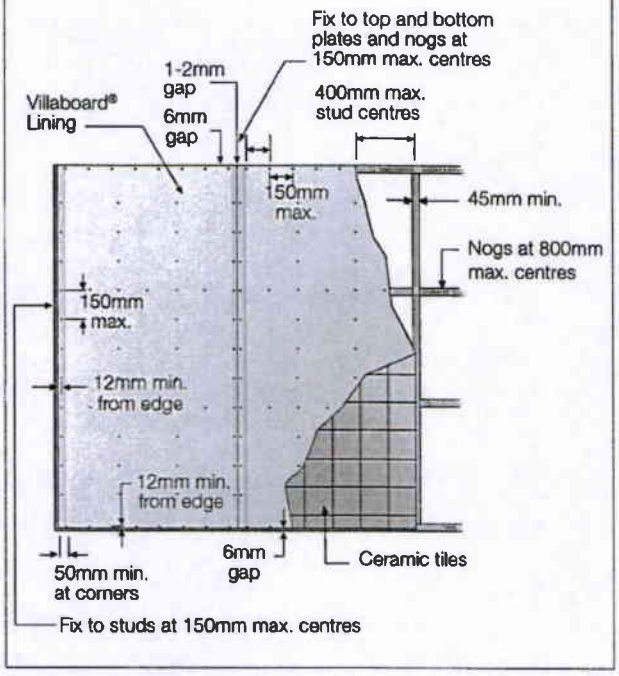
Notes

1. All surfaces to receive adhesive must be clean, free of dust, oil, etc.
2. Ensure daubs of adhesive never coincide with permanent fastener points, as adhesive shrinkage may cause fastener head protrusion.

Tiled walls

Where Villaboard Lining is to be finished with tiles, the sheets must be fixed with fasteners only as shown in Figure 9.

Figure 9: Fastening to wall frames for tiling



Notes

1. It is good practice to install Villaboard Lining horizontally for tiled applications.
2. When tiling in wet areas, apply water proofing membranes before tiling on walls. Ensure water proofing membranes manufacturers recommendations are followed.
3. The recessed edges are required to be stopped with James Hardie Base Coat as per Section 6. The top coat is not required behind the tiles. The square sheet joint can be sealed with a flexible sealant before the installation of tiles. Refer Figure 16.
4. When installed horizontally full perimeter sheet support and fixing is required. The vertical sheet joints can be staggered.
5. Fixings not to be staggered at the joint. Refer Figure 9.

6 Joints

6.1 GENERAL

Villaboard Lining joints are set with proprietary jointing compounds reinforced with perforated paper tape. Both recessed edge, square edge and butt joints are finished by using the jointing products outlined in this manual.

The performance of joints is the responsibility of the installer, as this is governed by the installation practices and the standard of workmanships applied. However, James Hardie considers that the recommendations provided in Table 6 describe best practice to reduce the risk of joint cracking or other problems.

There are various factors that can affect the performance of jointing compounds on edge recessed fibre cement substrates. These factors include the framing, movement, installation quality, vibrations, moisture, humidity, temperature, etc. To achieve satisfactory joint performance these factors need to be carefully considered and understood by the installer and designer when positioning joints.

James Hardie Base Coat has been specifically developed for use with Villaboard Lining and offers superior joint strength when compared with the gypsum jointing compound alternatives.

All site cut and site recessed sheet edges must be sealed with Dulux Acraprime 501/1 or Dulux Primacryl or similar.

In addition, provision for movement needs to be made by the installation of control joints. See Figure 18.

Table 6

Jointing recommendations

		Application	Base Compound	Topping Compound
Dry area walls	Recessed Edge	Untiled	James Hardie Base Coat with perforated paper tape	James Hardie Top Coat, Plaster Systems compound or Gypsum topping compound
		Tiled	James Hardie Base Coat with perforated paper tape	N/A
	Butt Edge	Untiled	Silicone Joint	N/A
		Tiled	Silicone Joint	N/A
Wet area walls	Recessed Edge	Untiled	James Hardie Base Coat with perforated paper tape	James Hardie Top Coat
		Tiled or Shower Lining	James Hardie Base Coat with perforated paper tape	N/A
	Butt Edge	Tiled or Shower Lining	James Hardie Base Coat with perforated paper tape	N/A
			Silicone Joint	N/A

Figure 13: Vertical flush joint setout

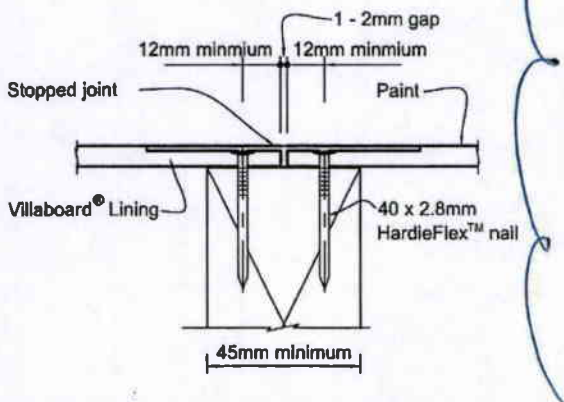
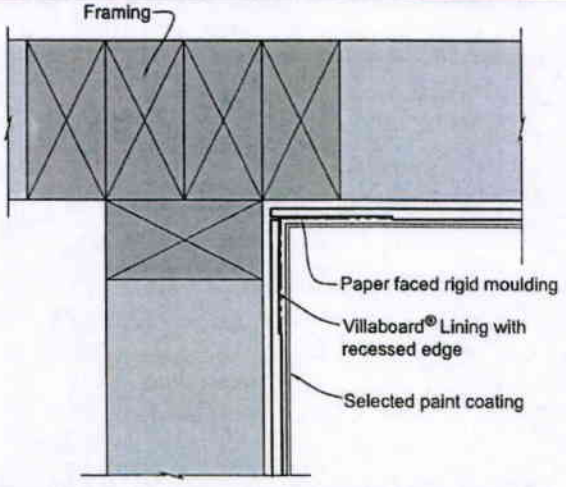


Figure 14: Wall to wall junction



Note: When Villaboard® Lining is to be tiled the corners behind the Villaboard Lining must be tied together with a Lumberlok® Stud Saver steel corner angle. Refer to Figure 21 for this angle's location.

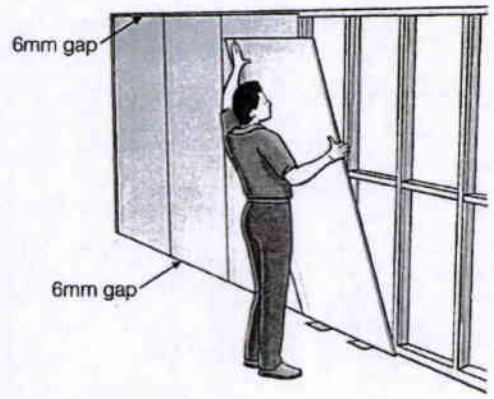
5 Installation

5.1 GENERAL

Place 6mm packers along the floor as temporary support for sheets. This will allow for any frame movement/shrinkage. Put sheets in place as shown.

Ensuring the sheet is level, fix starting from the centre of sheet and working outwards to avoid any drumminess.

Figure 3: First sheet



Provide 1-2mm gap between Villaboard Lining sheets at vertical, horizontal, internal or external corner joints.

Fix the remaining sheets in a similar sequence.

Notes

1. For fastener selection and spacings see pages 10 -13.
2. Do not fix sheets to the bottom chord of roof trusses. Instead, fix to ceiling battens or furring channels.

Figure 4: Fixing remaining sheets

5.2 FASTENERS

Fasteners must have the appropriate level of durability required for the intended project.

Fasteners must be fully compatible with all other material that they are in contact with to ensure the durability and integrity of the assembly.

On timber frame use Villadrive collated screws for quick installation of Villaboard Linings. Alternatively the Villaboard Lining can also be fixed with HardieDrive stainless steel screws or 40 x 2.8mm HardieFlex nails.

For fixing Villaboard Lining to 0.55 – 1.0mm BMT steel framing, use 30mm Buildex FibreZip Class 3 collated screws. These screws must not be used in sea spray zones.

Nails must be finished flush (Figure 5). Screws can be driven 0.5mm below the sheet surface to achieve the required finish level (Figure 5). In steel framing the fasteners should be driven as close as possible to the stud corners to avoid deflection of the stud flange, see Figure 6.

Refer to Section 6 – Step 7, for finishing of fasteners.

Figure 5: Fastener depth

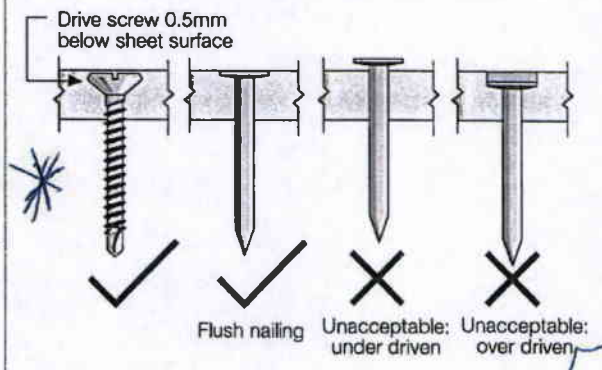
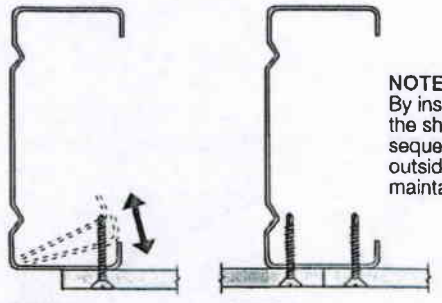


Figure 6: Screw fastening



7 Wet area application

7.1 BATHROOM AREAS

Villaboard Lining is most suitable for use in wet area applications. Villaboard Lining must be covered with a water proofing membrane in a shower application before the installation of tiles.

Note: Paints are not suitable for wet area applications (splash zone) and must not be relied upon to achieve water tightness.

7.2 INTERNAL SWIMMING POOL APPLICATION

To fix Villaboard Lining in internal swimming pool areas;

- The sheets must be back and edge sealed before installation.
- All sheet joints to be stopped.
- Only stainless steel fasteners must be used.
- Full perimeter fixing required.

In addition, it is recommended that H3.1 treated timber framing and ceiling battens are used to enhance the durability considering the high condensation levels.

Figure 19: Sealing around splash zones (showers)

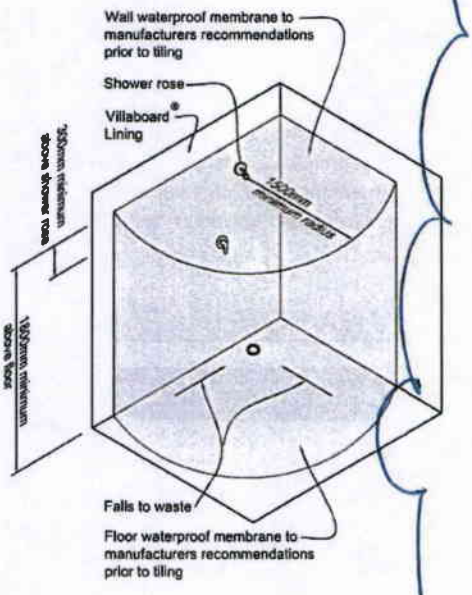
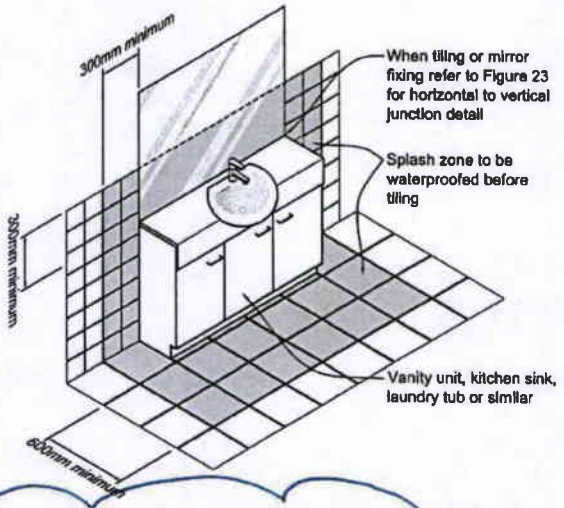
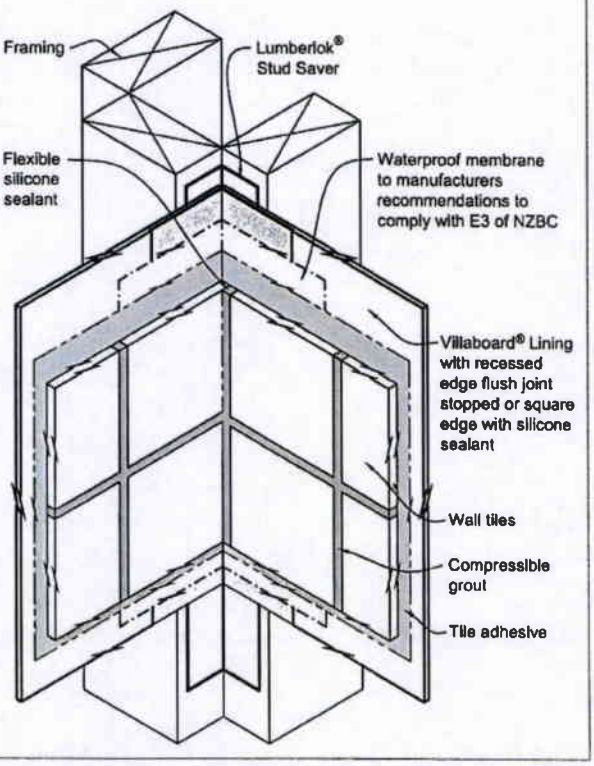


Figure 20: Sealing around splash zones (vanities)



Note: The extent of floor or wall waterproofing depends on the extent of water to be splashed over these areas. Recommended area to be waterproofed outside of bath, shower or vanity is a minimum of 300mm on walls and 600mm on floors.

Figure 21: Wall to wall junction



FORM OF PRODUCER STATEMENT PS3 – CONSTRUCTION
At project completion, this form shall be completed by the building contractor and supplied to the Engineer.

ISSUED BY: Executive Tiling
(Building Contractor)

TO: VerSaTile
(Owner/Principal)

IN RESPECT OF: Water proofing
(Description of Contract Works)

AT: 4 Robb Place SilverStream
(Address)

T/A: Waimakariri Council **BUILDING CONSENT No:** BC 131056
(Territorial Authority / Building Consent Authority)

The above Building Contractor has contracted to the above Owner/Principal to carry out and complete certain building works in accordance with the contract, titled

Shower Aqua blok & bandage ("the contract")
(Title of building contract)

I Bill Nelson a duly authorised representative of the
(Builder's Authorised Agent)

above building contractor, believe on reasonable grounds that the above building contractor has carried out and completed

☐ All ☑ Part only as specified in the attached particulars

of the building works in accordance with the contract.

(Signature of Authorised Agent on behalf of the Building Contractor)

6/11/2013
(Date)

73 Glenmore Ave
Casebrook
(Address)

This producer statement is confirmation by the builder(s) that they have carried out the building work in accordance with the drawings, specifications (and site amendments) that are part of the contract / building consent documents.

Work covered by this statement should have been supervised and checked by suitably qualified trades-persons.

The Engineer requires this producer statement and a copy of the T/A's building consent conditions, to confirm that items of the contract that he has not personally examined, have in fact been built according to the documents, so that the Engineer may issue appropriate documents to the T/A for it to release the Code Compliance Certificate.

20393-1

Aqua Blök

PRODUCT HIGHLIGHTS

- Low VOC content
- Permanently flexible - accommodates cracking in substrate
- Excellent adhesion to a wide variety of substrates
- Dries to a keyed finish to promote adhesion with tile adhesives
- Single pack
- Quick drying
- Safe and easy to use
- No priming required
- Designed for use with a 12mm bond-breaker

manufactured by:

CTA CONSTRUCTION TECHNOLOGIES AUSTRALIA

12 YEAR MANUFACTURERS WARRANTY 12

GREEN STAR COMPLIANT

AUSTRALIAN MADE.

BEST FOR:

- Shower recesses
- Bathroom floor areas
- Laundries
- Kitchens
- Balconies
- Patios
- Steel (suitably primed)
- Concrete, cement render, plaster
- Wet area wall lining board
- Hardie/CSR sheet flooring
- Brick
- Light weight aggregate block
- Plasterboard, MDF
- Plywood sheet flooring

Aqua Blok is a waterborne flexible waterproof membrane designed for use under tiled finishes that is capable of accommodating expected structural movement.

SURFACE PREPARATION

All surfaces to be waterproofed must be firm, clean, dry, sound and smooth. All grease, oil, wax, curing compounds, dust, droppings, loose material, paint and any other contaminants must be removed. Fibrous cement sheeting, water resistant plasterboard, marine ply and level 3 treated ply must be fixed in accordance with the manufacturer's installation directions. Concrete must be allowed to cure for 28 days and cement render and sand / cement screeds must be allowed to cure for 7 days prior to the application of Aqua Blok. Porous substrates must first be primed using an appropriate water based primer. Damp or moist substrates and dense non – porous substrates must be primed using "Aqua Blok Epoxy Seal".

Apply an appropriate neutral cure silicone as a bond breaker to the wall/wall joints, the wall/floor joints, and wherever there is a change in the direction of the substrate. All sheet joints and fixings must also be filled with neutral cure silicone before applying a coat of Aqua Blok over all sheet joints, extending 100mm either side of the joints.

Static crack treatment

For cracks less than 1mm, clean thoroughly before filling with an appropriate neutral cure silicone. Aqua Blok cannot span gaps. For dynamic cracks/expansion joints and control joints contact the CTA Technical Department for further advice.

APPLICATION - Internal Wet Areas

Aqua Blok must be applied using a brush or roller.

A minimum thickness of 1mm dried film thickness of Aqua Blok is required for optimum waterproofing properties. The surface onto which Aqua Blok is applied must be continuous. Aqua Blok cannot span gaps. A minimum of two coats of Aqua Blok is required.

Shower Recesses

Apply Aqua Blok to the internal vertical corners of the shower using a brush extending at least 100mm either side of the joint. Ensure the corner is well coated. This must extend past the height of the shower rose. It is important to coat around the tap protrusions in the wall. The wall/floor joint must be coated with Aqua Blok. The membrane must extend onto the floor at least 100mm and onto the wall 100mm. Aqua Blok must extend a minimum of 25mm above the height of the hob. The walls should then be coated. Once the wall/wall junctions, wall/floor junctions, tap protrusions and walls are coated, then the shower floor must be coated. When coating the floor, the Aqua Blok must be dressed down into the floor waste a minimum of 50mm. The floor must be coated with the Aqua Blok ensuring a minimum dry film thickness of 1mm is achieved. Apply a final coat to ensure there are no imperfections in the membrane.

Queensland
70 Platinum Street
Crestmead QLD 4132
T 07 3489 3000
F 07 3489 3099

South Australia
T 08 8387 2356
F 08 8387 9268

New South Wales
118A Long Street
Smithfield NSW 2164
T 02 9756 0066
F 02 9756 0060

www.ctaustralia.com.au

Walls of Wet Areas (excluding joints)
Aqua Blok must be applied at 0.5 litre per M^2 per coat. The minimum dry film thickness must be a minimum of 0.5mm.

Floors of Wet Areas
Apply Aqua Blok to the wall/floor joints and sheet flooring joints and fixings using a brush, extending at least 100mm either side of the joints. Once these areas are dry, the entire floor area can be coated. Sufficient Aqua Blok must be applied onto the surface to achieve a 1mm dried film thickness. Aqua Blok must be applied at 1 litre per M^2 per coat. Two coats are required.

Roofs
Aqua Blok is recommended as a waterproofing membrane for non-trafficable areas. Application is recommended as for "Floors of Wet Areas". There must be sufficient falls for effective drainage to eliminate ponding.

DRYING
Allow 4 – 6 hours between coats. Allow 48 hours to dry prior to tiling. Allow longer in adverse weather conditions.

CLEAN UP
Clean tools and equipment with warm water and detergent while the membrane is still wet.

PACKAGING
15 litre plastic pails

COVERAGE
Floors - 2 litres per M^2 at 1mm dry film thickness
Walls – 1 litre per M^2 at 0.5mm dry film thickness

TILING
Use an appropriate CTA Pty Ltd recommended tile adhesive

SHELF LIFE
Unopened pails can be stored for up to 12 months in a cool, dry and weatherproof environment. Bags must be stored off the floor.

SAFETY DIRECTIONS
CTA supports best practice in material handling: gloves, mask, safety goggles and protective clothing should be worn. If the product comes into contact with the skin, wash off with warm soapy water. Avoid inhaling the dust by wearing a suitable dust mask and provide adequate ventilation. If swallowed drink plenty of water and seek medical advice. In case of contact with the eyes, rinse with an eye wash or wash away with plenty of water.

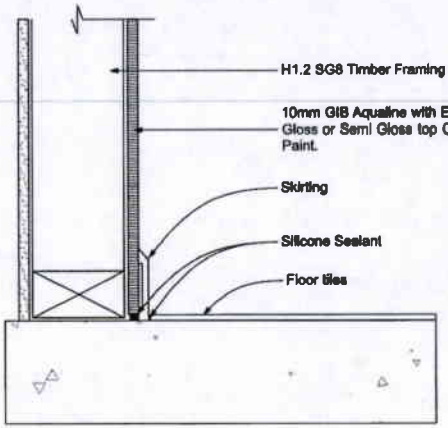
FIRST AID
If poisoning occurs, contact a Doctor or Poisons Information Centre (Phone Australia: 13 11 26, New Zealand: 0800 764 766). EMERGENCY INFORMATION: 1800 033 111 (ALL HOURS). SEE THE MATERIAL SAFETY DATA SHEET FOR ADDITIONAL INFORMATION.

LIMITATIONS
- Aqua Blok is not designed to stop a hydrostatic head of water pressure
- Aqua Blok must not be used over damp, wet or contaminated substrates
- Aqua Blok must not be applied if it is raining or if rain is imminent
- Aqua Blok must not be applied directly over protective coatings
- Aqua Blok must not be applied over the recommended coverage of 1 litre per m^2
- To eliminate possible surface contamination or damage, it is recommended that tiling be carried out
- as soon as the membrane has cured
- Timber and particleboard flooring must be overlaid with fibrous cement sheeting
- Aqua Blok must not be used as a wearing surface for foot or vehicle traffic
- Aqua Blok must only be used as recommended
- Do not apply where the surface temperature is below 10°C or greater than 35°C

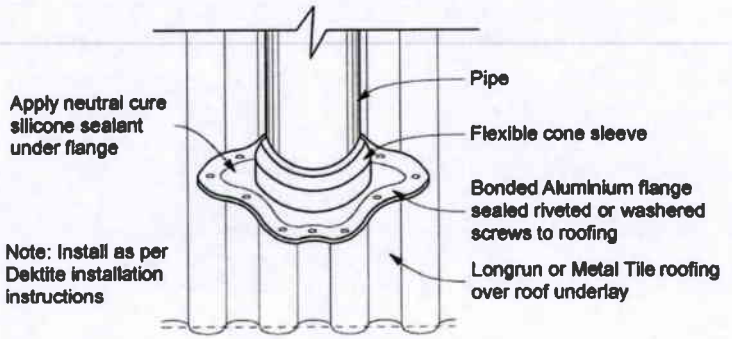
manufactured by:

CTA CONSTRUCTION TECHNOLOGIES AUSTRALIA

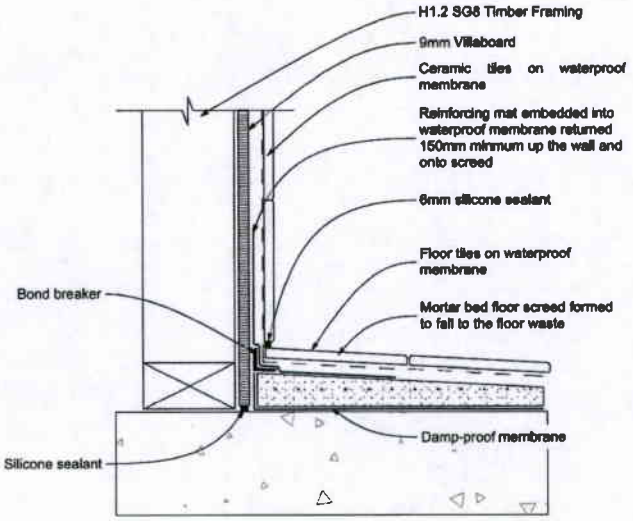
GUARANTEE
CTA Pty. Ltd. guarantee this product for 12 years provided application is in accordance with manufacturer's written directions for use and the Australian Standard for Tiling Practice (AS3958.1-2007). The representations and recommendations regarding the products are based on tests which we believe to be reliable. However, no guarantee of their accuracy can be made because of the great range of field conditions and variations encountered in raw materials, manufacturing equipment and methods.Thus, the products are sold with a limited warranty only, and on the condition that purchasers will make their own tests to determine the suitability of the product for their particular purposes.Under no circumstances will CTA Pty Ltd. be liable to anyone except for replacement of the products or refund of the purchase price.



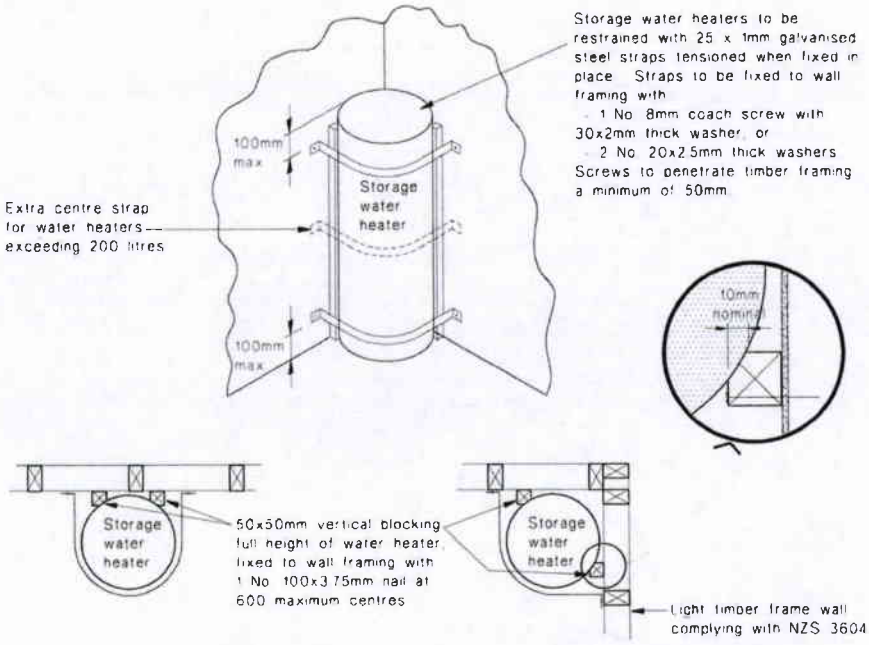
TILED FLOOR COVERING



ROOF PENETRATION DETAIL



WET FLOOR SHOWER LINING



HOT WATER CYLINDER SEISMIC RESTRAINT DETAIL

Note: Construction to comply with NZS 3604 (2011) and the New Zealand Building Code 2004

VERSATILE® HOMES & BUILDINGS

PROPOSED HOME FOR:
CAMERON FINLAYSON,
LOT 130 SILVERSTREAM

DRAWING TITLE
INTERNAL DETAILS

SCALE: 1:5
DATE: 7/11/2013
DRAWN: RM
FILE: 130237
SHEET: 8
OF:

BC131056

Sandra Prisk

From: Sarah Smith
Sent: Tuesday, 3 December 2013 2:34 p.m.
To: Sandra Prisk
Subject: FW: 131056L_CCC_FI_20131128
Attachments: CoCdocs_BC131056.pdf

From: Georgie Fraser [mailto:Georgie.Fraser@versatile.co.nz]
Sent: Tuesday, 3 December 2013 2:16 p.m.
To: Sarah Smith
Subject: RE: 131056L_CCC_FI_20131128

Code of Compliance documents now attached. Please advise if I have missed anything.

Thanks for your help
Georgie

Georgie Fraser | Consents Administrator | Versatile Homes and Buildings

DDI 03 348 8704 | **F** 03 348 9093 | **E** Georgie.Fraser@versatile.co.nz | **W** www.versatile.co.nz

3 Springs Road, Sockburn 8443, P O Box 11-336, Christchurch, New Zealand

CAUTION: This message may contain confidential information intended only for the use of the addressee named above. If you are not the intended recipient of this message, any use or disclosure of this message is prohibited. If you received this message in error please notify Mail Administrators immediately. This information is scanned for viruses during creation. No responsibility will be assumed for the integrity of this material as received. The recipient should take all necessary precautions to check for and eradicate possible virus infections. You must obtain all necessary intellectual property clearances before doing anything other than displaying this message on your monitor. There is no intellectual property licence implied by your receipt of this message. Any views expressed in this message are those of the individual sender and may not necessarily reflect the views of Spanbild Holdings Limited or any of its affiliated divisions, subsidiaries or organisations

---

From: Sarah Smith [mailto:sarah.smith@wmk.govt.nz]
Sent: Monday, 2 December 2013 2:31 p.m.
To: Georgie Fraser
Subject: 131056L_CCC_FI_20131128

Please find attached a copy of your CCC further info letter

Regards
Sarah

Sarah Smith
Building Administration Officer
Waimakariri District Council

WAIMAKARIRI DISTRICT COUNCIL

Ph: (03) 311 8960
CELL: 0274538142
www.waimakariri.govt.nz

The information contained in this email message is CONFIDENTIAL INFORMATION and may also be LEGALLY PRIVILEGED. It is intended only for the individual or entity named above. If you are not the intended recipient, you are hereby notified that any use, review, dissemination, distribution or copying of this document is strictly prohibited. If you received this document in error, please immediately notify us by telephone (+64-3-3118900) and destroy the original message.

This email has been scrubbed for your protection by SMX. For more information visit smxemail.com

---

Click here to report this email as spam.

This message has been scanned for malware by Websense. www.websense.com

WAIMAKARIRI DISTRICT COUNCIL

Private Bag 1005, Rangiora 7440
Ph 03 313 8900, 03 327 6834 Fax 03 313 4432
www.waimakariri.govt.nz

CODE COMPLIANCE CERTIFICATE APPLICATION

Under The Building Act 2004 Section 92

BC No. 131056

THE BUILDING

1. Site address *(street/road/township)*: 4 Robb Place
   Silverstream
   Kaiapoi
4. Rapid Number *(Applies to rural properties only)*:
3. Legal Description of the land where the building is located:
   Lot: 130 DP: 461956
   Valuation Roll Number:

Note: Only complete items here that are applicable to your project.

4. Building Name: *(eg: where buildings have Official Names)*
5. Location of Building within Site:
   (only applicable to multi-development sites)
6. Number of Levels: 1 6. Level/Unit No:
7. Floor Area - Existing: 132.2 New: Total: 132.2
8. Current Lawfully Established Use:
   (eg: Use on any previous consent for the existing building)
9. Year Building First Constructed:
   (only applicable to existing buildings, approximate date is acceptable, eg 1920's or 1960-1970)

OWNER

10. Owner's Name: *(Company or Organisation name)*
    Cameron Finlayson
11. Contact Person: *(If Owner is not an Individual)*
12. Mailing Address: 4 Robb Place, Kaiapoi
13. Street Address / Registered Office: 4 Robb Place, Kaiapoi
14. Contact Numbers:
    Mobile: 0277426595 Daytime:
    After hours:
15. Fax:
16. Email: cam.finlayson@portabild.co.nz
17. Has ownership changed since the application for building consent was made. Yes No ✓
    If "yes" please provide one of the following:
    Copy of Certificate of Title (current within 1 month)
    If Certificate of Title is not issued:
    Signed copy of Sale and Purchase Agreement

AGENT

Only required if the application is being made on behalf of the owner. Agent must be authorised by the owner to make this application.

18. Name of Agent: Versatile Homes and Buildings Ltd
19. Contact Person: John Larcombe
20. Mailing / Billing Address: P O Box 11336
    Christchurch 8443
21. Street Address / Registered Office: 3 Springs Road, Sockburn, Christchurch
22. Contact Numbers:
    Mobile: 027 705 7601 Daytime: 348 8704
    After hours:
23. Fax:
24. Email: john.larcombe@versatile.co.nz
25. ✓ Authorisation from owner, see page 6
    (required when application not signed by owner)
26. *Note: The Agent will be the first point of contact for communications with the Council / Building Consent Authority regarding this Application / Building Work and will receive all correspondence including all invoices.*

27. All building work to be carried out under this Building Consent was completed on: 22 November 2013

I request that you issue a Code Compliance Certificate for this work under section 95 of the Building Act 2004.
The Certificate of Acceptance should be sent to Owner ✓ Agent ✓

RESTRICTED BUILDING WORK

Did the building include any restricted building work? Yes ☐ No ✓

If Yes, provide the following details of all Licensed Building Practitioners who were involved in carrying out or supervising the restricted building work.

Licence Class	Name	Licensed Building Practitioner Number (or registration number if treated as being licensed under section 291 of the Building Act 2004)
Foundations		
Carpentry		
Exterior Plasterer		
Bricklayer		
Blocklayer		
Roofer		

KEY PERSONNEL

28. The Licensed Building Practitioners who carried out the building work are as follows:

BUILDER

Name:	Michael HANSON and John HANSON	Reg. No:	105690 and 105692
Address:	128 Leeston Road, RD4, Springston		
Phone No:	0274838906	Fax No:	
Email:			

DESIGNER(S)

Name:		Reg. No:	
Address:			
Phone No:		Fax No:	
Email:			

CERTIFYING DRAINLAYER

Name:		Reg. No:	
Address:			
Phone No:		Fax No:	
Email:			

CERTIFYING PLUMBER

Name:	D B Henderson	Reg. No:	00020
Address:	214 Estuary Road, Brighton		
Phone No:		Fax No:	
Email:			

CERTIFYING GASFITTER

Name:		Reg. No:	
Address:			
Phone No:		Fax No:	
Email:			

REGISTERED ELECTRICIAN

Name:	Jonny LImmer	Reg. No:	252180
Address:	Light It Up Electrical		
Phone No:		Fax No:	
Email:	limmerelectrical@hotmail.co.nz		

STRUCTURAL ENGINEER

Name:		Reg. No:	
Address:			
Phone No:		Fax No:	
Email:			

Please photocopy and attach additional pages as required to provide a complete list of ALL sub-trades involved in the project

SPECIFIED SYSTEMS

29. The following specified systems are contained on the compliance schedule for the building and, in the opinion of the personnel who installed them, are capable of performing to the performance standards set out in the Building Consent: Tick appropriate specified systems below:

✓ **There are no specified systems in the building**

SS1 Automatic systems for fire suppression

SS2 Emergency warning systems

SS3/1 Automatic door

SS3/2 Access controlled doors

SS3/3 Interfaced fire or smoke doors or windows

SS4 Emergency lighting systems

SS5 Escape route pressurisation systems

SS6 Riser mains

SS7 Automatic back-flow prevention

SS8/1 Passenger carrying lifts

SS8/2 Service lifts

SS8/3 Escalator and moving walks

SS9 Mechanical ventilation or air conditioning systems

SS10 Building maintenance units

SS11 Laboratory fume cupboards

SS12/1 Audio loops

SS12/2 FM Radio and infrared beam transmission systems

SS13/1 Mechanical smoke control

SS13/2 Natural smoke control

SS13/3 Smoke curtains

SS14/1 Emergency power systems

SS14/2 Signs for SS1-13

SS15/1 Spoken information to facilitate evacuation

SS15/2 Final exits

SS15/3 Fire separations

SS15/4 Signs for facilitating evacuation

SS15/5 Smoke separations

SS16 Cable cars

ATTACHMENTS

30. The following documents are attached to this application *(where applicable)*:

Evidence of ownership *(certificate of title or sale and purchase agreement only required if ownership has changed since consent was granted)*

✓ Certificates that relate to the energy work *(e.g. gas and electricity)*

Evidence that the specified systems are capable of performing to the performance standards set out in the building consent

Proof of potability of drinking water from private well, and/or rain water catchment, supply *(refer to New Zealand Drinking Water Standards 2005)*

Memoranda (records of building work) from licenced building practitioner(s) stating what restricted building work they carried out or supervised

✓ Other documents from personnel that carried out the work

Evidence that specified systems are capable of performing to the performance standards set out in the Building Consent *(Installers certification)*.

APPLICATION INFORMATION

31. A Code Compliance Certificate will be issued within 20 working days from application, provided all the information required has been supplied. The Code Compliance Certificate will be based on the approved building consent documents, so any variations to the original approved plans are required to be documented and approved prior to the work being carried out. All inspections listed in the Building Consent documentation must have been carried out to the Building Consent Authorities satisfaction including a final inspection. In the event that no application for Code Compliance is made within **2 years** after the granting of the Building Consent, the Building Consent Authority is obliged to issue a "Notice to Fix" for any outstanding work. You may wish to apply for a time extension*. *fees apply

Notice to Fix

If a Notice to Fix is issued, it will state the building work that must be carried out and will set a timeframe in which this work must be completed. Once the work listed has been completed a further inspection should be booked by phoning:

Waimakariri District Council on (03) 311 8900 or (03) 327 6834

Fees

Please note: All work for the issue of a Code Compliance Certificate will be invoiced and must be paid in full before the Code Compliance Certificate will be issued.

Other notes or comments which you as the applicant may wish to add, eg Resource Consents

OWNER / AGENT SIGNATURE - Hard Copy

Signed by or on behalf of the Owner:

Name:

Date:

I am the:
Owner
Agent

Note: if acting on behalf, please read the following declaration before signing - "I hereby declare that I am authorised to act as Agent of the Owner".

NB: Ensure agent authorisation section is completed - see below.

OWNER / AGENT SIGNATURE - Electronic

By typing your name in the box below you are giving your authority for the application to proceed and accept the associated charges.

Signed by (please type your name): John Larcombe

Date: 2/12/13

I am the:
Owner
Agent ✓

Note: If acting on behalf, please read the following declaration before signing - "I hereby declare that I am authorised to act as Agent of the Owner".

NB: Ensure agent authorisation section is completed - see below.

AGENT AUTHORISATION

I authorise John Larcombe

to act as agent on my behalf for the Building Consent process.

Name: Cameron Finlayson Date: 2/12/13

Signed: (by owner) Cam Finlayson

FOR ELECTRONIC – Please type name.

By typing your name in the box you are giving your authority for the application to proceed and accept the associated charges.

I wish to receive my Code Compliance Certificate and approved documentation in the following format:

Electronically via File Transfer Portal[1] ✓ On CD Hard copy

The CD or hard copy documents are to be collected from Rangiora Service Centre unless arrangements have been made to have these delivered to you.

(1) You must be set up and registered for this option.

All the relevant information on this form is required to be provided under the Building Act and Resource Management Act for the Building Unit to process your application. Under these Acts this information has to be made available to members of the public. The information contained in this application may be made available to other units of the Council. You have the right to access the personal information held about you by the Council that can be readily retrieved. You can also request that the Council correct any personal information it holds about you.

WAIMAKARIRI DISTRICT COUNCIL

PRODUCER STATEMENT PIPEWORK TESTING

Private Bag 1005, Rangiora 7440
Ph 03 311 8900, 03 327 6834 Fax 03 313 4432
www.waimakariri.govt.nz

BC No. [redacted] 131056

Issued by *(Plumber)*:

D.B. HENDERSON

At *(address)*:

LOT 130 Silverstream Robb pls.

For *(Owner)*:

Finlayson.

In respect of the testing of water pipe work prior to concealment.

I hereby state that I have personally tested the water pipe work installed in the building authorised under this Building Consent by the method indicated hereunder.

✓ By pressurising the pipe work to 1500 kPa for a period of not less than 15 minutes for the hot and cold water supply and checking to see there are no leaks. (NZBC G12/AS1 7.5.1 (a), (b).)

By pressurising the uPVC pipe work to 1.5 times the maximum working pressure for a period of not less than 15 minutes and checking that there are no leaks. (NZBC G12/AS1 7.5.2, NZS 7643).

Max working pressure was:

By pressurising the pipe work to 1500 kPa for a period of not less than 5 minutes and checking to see there are no leaks. (NZBC G12 VM1, AS3500:Part 1.2 1998)

And believe on reasonable grounds that the pipe work has passed that test.

✓ All work complies with the NZBC

I also understand that Waimakariri District Council in accepting this producer statement will be relying on it to issue the Code Compliance Certificate at the completion of the building work.

SIGNATURE OF LICENSED CERTIFYING PLUMBER:

Signature: [signature]

Date: 26/11/13

Registration Number: 00020

Company Name: D.B. Henderson plumbers LTD.

Compliance and Electrical Safety Certificate

This form has been issued by the Electrical Workers Registration Board

Unique ID: _____

ELECTRICAL WORKERS REGISTRATION BOARD
Safety • Competency

This form has been designed to be used by licensed electrical workers to certify low voltage installations or part installations that comply with Part 2 of AS/NZS 3000 and are safe to be connected to a 230/400 volt multiple earth neutral (MEN) system of electrical supply.

(1) Location of installation

Address: Lot 130 Robb Place Kalapoi

(2) Customer Information

Name: Cameron Finlayson

Postal Address: _____

Phone and Email: _____

(3) Electrical Worker Information

Name: Jonny Limmer

Registration/Practising Licence Number: 252180

Organisation: Light It Up Electrical Ltd

Telephone Number: 021 022 52044

Email: limmerelectrical@hotmail.co.nz

Name of person(s) being supervised: Mary Kingan

(4) Work Details

The work is (circle): ○ **additions** | ○ **alterations** | ✓ **new work**

The prescribed electrical work is: (Please tick (✓) as appropriate)
✓ High Risk ○ General ○ Low Risk ○ The homeowner has undertaken part of the electrical installation work.

Indicate the number of each item installed or altered:		**Other Work?**	**Tick (✓) if work includes:**
Number of lighting outlets:	29	New Installation as per plans & specs.	✓ Mains
Number of socket outlets:	23		✓ MEN switchboard closest to point of supply
Number of ranges:	1		✓ Main Earthing System
Number of water heaters:	1		○ Electric Lines

(5) Certification of Work

I certify that the completed prescribed electrical work to which this certificate applies, has been done lawfully and safely and the information in the certificate is correct in that the installation, or part of the installation:

- ○ has been installed in accordance with a certified design
- ✓ has an earthing system that is correctly rated
- ✓ contains fittings which are safe to connect to a power supply
- ✓ relies on supplier's Declaration of Conformity (attach or reference[1])
- ✓ relies on manufacturer's instructions (attach or reference[1])
- ✓ has been satisfactorily tested in accordance with Electricity (Safety) Regulations 2010
- ✓ is safe to connect

Test Results:

	Electrical Worker	Inspector
Polarity (independent earth):		✓
Insulation resistance:	200MΩ	>200 MΩ.
Earth continuity:	0.03Ω	0.03
Bonding:	✓	✓
Other (specify):		

Electronic reference: www.idial.co.nz.

Electrical Worker's Signature: _____ Date: 12/11/13.

1. If it is impractical to attach a copy of a particular manufacturer's instructions, or of any certified design or supplier declarations of conformity, provide a reference to where the documents can be found, in a readily accessible format, through electronic means.

(6) Electrical Safety Certificate

I certify that the installation, or part of the installation, to which the Electrical Safety Certificate applies is connected to a power supply and is safe to use

Name: Jonny Limmer

Registration/Practising Licence Number: E252180

Signature: _____ Date 12/11/13
(if certifier is different from electrical worker)

Compliance and Electrical Safety Certificate

This form has been issued by the Electrical Workers Registration Board

ELECTRICAL WORKERS REGISTRATION BOARD
Safety • Competency

Unique ID: _____

This form has been designed to be used by licensed electrical workers to certify low voltage installations or part installations that comply with Part 2 of AS/NZS 3000 and are safe to be connected to a 230/400 volt multiple earth neutral (MEN) system of electrical supply.

(1) Location of installation

Address: 4 ROBB PLACE KAIAPOI

(2) Customer Information

Name: MR AC. FINLAYSON.

Postal Address: _____

Phone and Email: _____

(3) Electrical Worker Information

Name: W.DE BEER Registration/Practising Licence Number: I 261309

Organisation: ARC INNOVATIONS Telephone Number: 021 272 1697

Email: _____

Name of person(s) being supervised: _____

(4) Work Details

The work is (circle): **additions** | **alterations** | **new work**

The prescribed electrical work is: (Please tick (✓) as appropriate) ○ High Risk ○ General ○ Low Risk ○ The homeowner has undertaken part of the electrical installation work.

Indicate the number of each item installed or altered:		Other Work?	Tick (✓) if work includes:
Number of lighting outlets:	/	INSTALL SMART METER	✓ Mains
Number of socket outlets:	/		○ MEN switchboard closest to point of supply
Number of ranges:			○ Main Earthing System
Number of water heaters:			○ Electric Lines

(5) Certification of Work

I certify that the completed prescribed electrical work to which this certificate applies, has been done lawfully and safely and the information in the certificate is correct in that the installation, or part of the installation:

○ has been installed in accordance with a certified design
○ has an earthing system that is correctly rated
○ contains fittings which are safe to connect to a power supply
○ relies on supplier's Declaration of Conformity (attach or reference[1])
○ relies on manufacturer's instructions (attach or reference[1])
○ has been satisfactorily tested in accordance with Electricity (Safety) Regulations 2010
○ is safe to connect

Test Results:

	Electrical Worker	Inspector
Polarity (independent earth):		✓
Insulation resistance:		
Earth continuity:		
Bonding:		
Other (specify):		

Electronic reference: _____

Electrical Worker's Signature: _____ Date: 21-11-2023

1. If it is impractical to attach a copy of a particular manufacturer's instructions, or of any certified design or supplier declarations of conformity, provide a reference to where the documents can be found, in a readily accessible format, through electronic means.

(6) Electrical Safety Certificate

I certify that the installation, or part of the installation, to which the Electrical Safety Certificate applies is connected to a power supply and is safe to use

Name: W.DE BEER. Registration/Practising Licence Number: I261309

Signature: _____ Date 21-11-2023
(if certifier is different from electrical worker)

CUSTOMER COPY – THIS IS AN IMPORTANT DOCUMENT AND SHOULD BE RETAINED

Compliance and Electrical Safety Certificate

This form has been issued by the Electrical Workers Registration Board

ELECTRICAL WORKERS REGISTRATION BOARD
Safety • Competency

Unique ID: _____

This form has been designed to be used by licensed electrical workers to certify low voltage installations or part installations that comply with Part 2 of AS/NZS 3000 and are safe to be connected to a 230/400 volt multiple earth neutral (MEN) system of electrical supply.

(1) Location of installation

Address: LOT 130 RABB PLACE SILVERSTREAM

(2) Customer Information

Name: VERSATILE BUILDINGS

Postal Address: _____

Phone and Email: 03 348 8704

(3) Electrical Worker Information

Name: C McKay

Registration/Practising Licence Number: E 259 133

Organisation: CLIMATE CHANGE

Telephone Number: 022 183 4740

Email: _____

Name of person(s) being supervised: _____

(4) Work Details

The work is (circle): **additions** | **alterations** | **new work**

The prescribed electrical work is: ○ High Risk ✓ General ○ Low Risk ○ The homeowner has undertaken part of the electrical installation work.
(Please tick (✓) as appropriate)

Indicate the number of each item installed or altered:

Number of lighting outlets: _____

Number of socket outlets: _____

Number of ranges: _____

Number of water heaters: _____

Other Work?

INSTALL POWER SUPPLY FOR NEW A/C UNIT

Tick (✓) if work includes:

○ Mains
○ MEN switchboard closest to point of supply
○ Main Earthing System
○ Electric Lines

(5) Certification of Work

I certify that the completed prescribed electrical work to which this certificate applies, has been done lawfully and safely and the information in the certificate is correct in that the installation, or part of the installation:

✓ has been installed in accordance with a certified design
✓ has an earthing system that is correctly rated
✓ contains fittings which are safe to connect to a power supply
○ relies on supplier's Declaration of Conformity (attach or reference[1])
✓ relies on manufacturer's instructions (attach or reference[1]) CLIPSAL ISOLATOR
○ has been satisfactorily tested in accordance with Electricity (Safety) Regulations 2010
○ is safe to connect

Test Results:

	Electrical Worker	Inspector
Polarity (independent earth):	✓	
Insulation resistance:	>1MΩ	
Earth continuity:	<1Ω	
Bonding:	–	
Other (specify):	–	

Electronic reference: _____

Electrical Worker's Signature: _____ Date: 12/11/13

1. If it is impractical to attach a copy of a particular manufacturer's instructions, or of any certified design or supplier declarations of conformity, provide a reference to where the documents can be found, in a readily accessible format, through electronic means.

(6) Electrical Safety Certificate

I certify that the installation, or part of the installation, to which the Electircal Safety Certificate applies is connected to a power supply and is safe to use

Name: C McKay

Registration/Practising Licence Number: _____

Signature: _____

(if certifier is different from electrical worker)

Date 12/11/13

IPENZ ENGINEERS NEW ZEALAND | NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED | ACENZ

Building Code Clause(s) B1 & B2

PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW

(Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: HFC: Civil & Structural (South) Limited
(Construction Review Firm)

TO: Versatile Homes
(Owner/Developer)

TO BE SUPPLIED TO: Christchurch City Council
(Building Consent Authority)

IN RESPECT OF: Waffle Slab Foundation
(Description of Building Work)

AT: Silverstream, Kaiapoi
(Address)

LOT 130 DP ..... SO .....

HFC: Civil & Structural (South) Limited has been engaged by Versatile Homes
(Construction Review Firm)

to provide ○ CM1 ○ CM2 ◉ CM3 ○ CM4 ○ CM5 *(Engineering Categories)* or ○ OL1 ○ OL2 ○ OL3 ○ OL4 *(Architectural Categories)*

observation ○ or other ..... services
(Extent of Engagement)

in respect of clause(s) B1/VM1, AS1, VM4, B2/VM1 (Structural Durability only) of the Building Code for the building work described in documents relating to Building Consent No. BCN 131056 (HFC Job #13075) and those relating to Building Consent Amendment(s) Nos. ..... issued during the course of the works. We have sighted these Building Consents and the conditions of attached to them.

Authorised instructions / variation(s) No. Site Inspection #1 - #2 (copies attached) or by the attached Schedule ☐ have been issued during the course of the works.

On the basis of ○ this ◉ these review(s) and information supplied by the contractor during the course of the works, I **believe on reasonable grounds** that ○ All ◉ Part only of the building works have been completed in accordance with the relevant requirements of the Building Consents and Building Consent Amendments identified above, with respect to Clause(s) B1 & B2 of the Building Regulations.

I, Tomoaki Watanabe am: ☑ CPEng No. 1010912
(Name of Construction Review Professional)

☐ Reg Arch No. .....

I am a Member of: ☑ IPENZ ☐ NZIA and hold the following qualifications: BE, ME, MIPENZ, CPEng & IntPE

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

The Construction Review Firm is a member of ACENZ: ○ YES ◉ NO

SIGNED BY Tomoaki Watanabe ON BEHALF OF HFC: Civil & Structural (South) Limited

Date: 14/08/2013 Signature: Tom Watanabe

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

This form to accompany **Forms 6 or 8 of the Building (Form) Regulations** 2004 for the issue of a Code Compliance Certificate.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1992. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suite of producer statements has been revised as at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design	Intended for the use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;
PS2 Design Review	Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;
PS3 Construction	Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2003[1]; or Schedules E1/E2 of NZIA's SCC 2007 [2]
PS 4 Construction Review	Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate. This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, IPENZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence-based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ)or the New Zealand Institute of Architects (NZIA) provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

* Professional Indemnity Insurance

As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to $500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-5)[3] (OL1-OL4)[2]. The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

1 *Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2003*

2 *NZIA Standard Conditions of Contract SCC 2007 (1st edition)*

3 *Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)*

www.acenz.org.nz
www.ipenz.org.nz
www.nzia.co.nz

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA

NOTE: Image Quality is due to condition of Original

PROJECT:

PROJECT #:

DESCRIPTION:

DATE:

REF/DWGS:

REPORT #:

ENGINEER:

CONSENT #: BCN 131056

HFC | SITE REPORT

STATUS

☐ APPROVED TO PROCEED (SUBJECT TO INCORPORATION OF COMMENTS BELOW)

☐ REINSPECTION REQUIRED

CONTRACTOR	NAME	SIGNATURE

OH PSA

HFC | GROUP
PO BOX 109106 NEWMARKET AUCKLAND 1149
T: 09 367 1070
AUCK@HFC.CO.NZ
CHCH@HFC.CO.NZ

NOTE: Image Quality is due to condition of Original

PROJECT: PROJECT #:

DESCRIPTION: DATE:

REF/DWGS: REPORT #:

ENGINEER:

CONSENT #:

HFC | SITE REPORT

STATUS

☐ APPROVED TO PROCEED (SUBJECT TO INCORPORATION OF COMMENTS BELOW) ☐ REINSPECTION REQUIRED

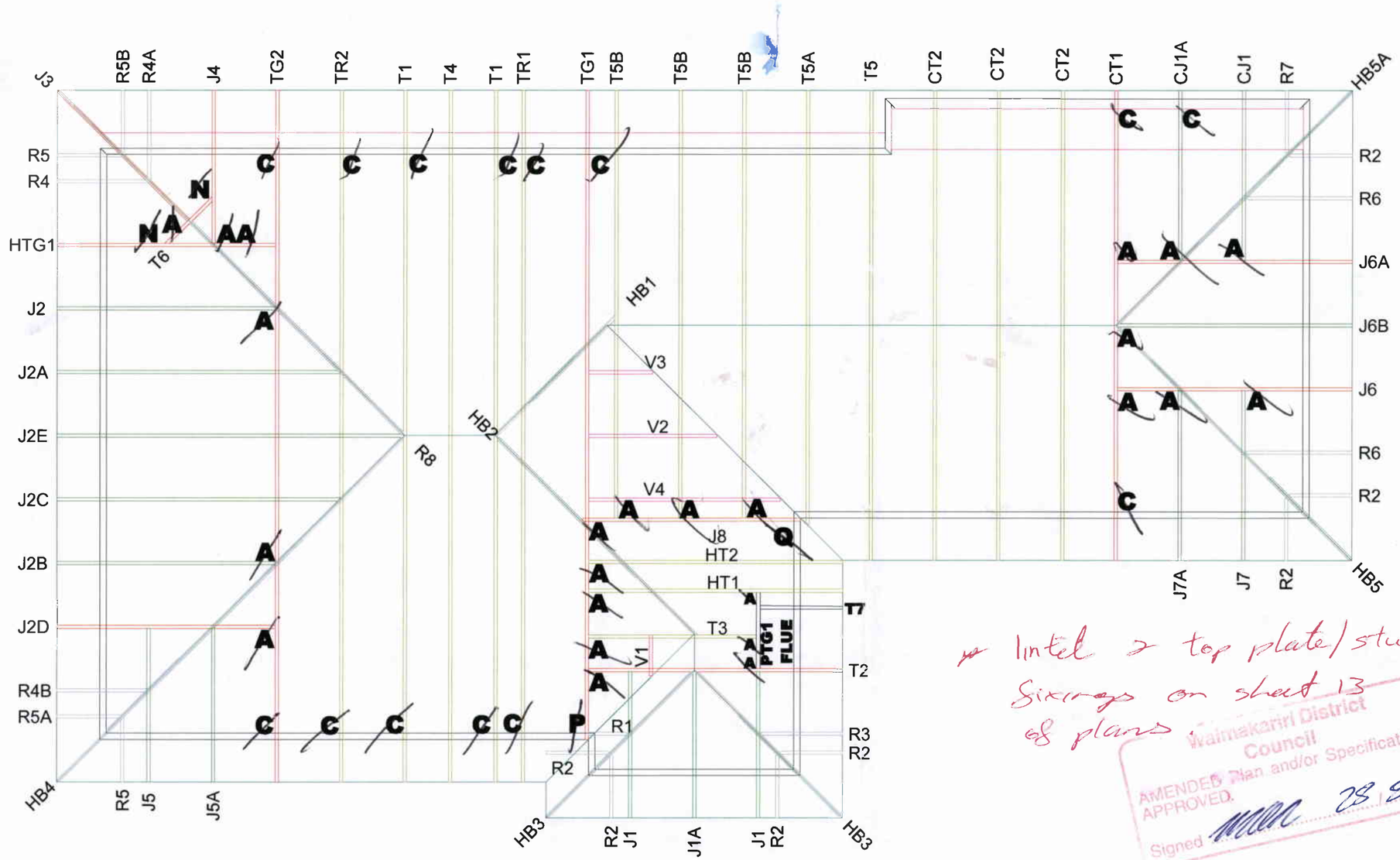
CONTRACTOR	NAME	SIGNATURE

HFC | GROUP
CIVIL & STRUCTURAL ENGINEERS
PO BOX 109106 NEWMARKET AUCKLAND 1149
PO BOX 28006, BECKENHAM, CHRISTCHURCH 8242
T: 09 367 1070
T: 03 339 7000
AUCK@HFC.CO.NZ
CHCH@HFC.CO.NZ

131056A

FINAL LAYOUT

RECEIVED
27 AUG 2013
BY:



* lintel + top plate/stud fixings on sheet 13 of plans

Waimakariri District Council
AMENDED Plan and/or Specifications APPROVED.
Signed 23.9.13

NOTE: If metal ceiling battens on clips are used, bottom chord bracing is required at 1800mm centres.

CARTERS
YourBuildingPartner

Christchurch Manufacturing
19-21 Broughs Road, Christchurch
03 359 2731

JOB No **CD95927**

Client: Spanbild
Job Name: P58582 - Finlayson
Address: Lot 130 Silverstream
Kaiapoi
Chch

Pitch: 25.0deg
Roof Material: Galv Iron .5mm
Soffit Overhang: 600mm
Wind Area: High
Snow Load(factored): 0.526kPa

Trusses and rafters at 900mm max centres unless stated otherwise.

This layout is to be read in conjunction with the Architectural plans.

DRAWN BY John Simpson

DATE 20 Aug,2013 | PAGE 1 of 2

FIXINGS

A= 47x90 JH
B= 47x120 JH
D= 47x190 JH
E= 95x165 JH

Joist Hanger

CT 200

C= CT200 (pair)
M= Multigrips (pair)
N= Nailon Plate
Q= 9kN Pack
P= 16kN Pack

Multi Grips

Nailon plate

All other truss fixings must have two wire dogs unless indicated as above

CPC

NOTE

Please contact your local CARTERS Manufacturing Branch for any queries regarding this layout or if any on site remedial work is required.

No modifications to Roof Trusses or Wall Frames are to be undertaken without first obtaining written authority from CARTERS Manufacturing.

Truss Layout

QUALITY ASSURANCE FTMA NEW ZEALAND TIMBER & TRUSS MANUFACTURERS ASSOCIATION (N.Z.) INC.

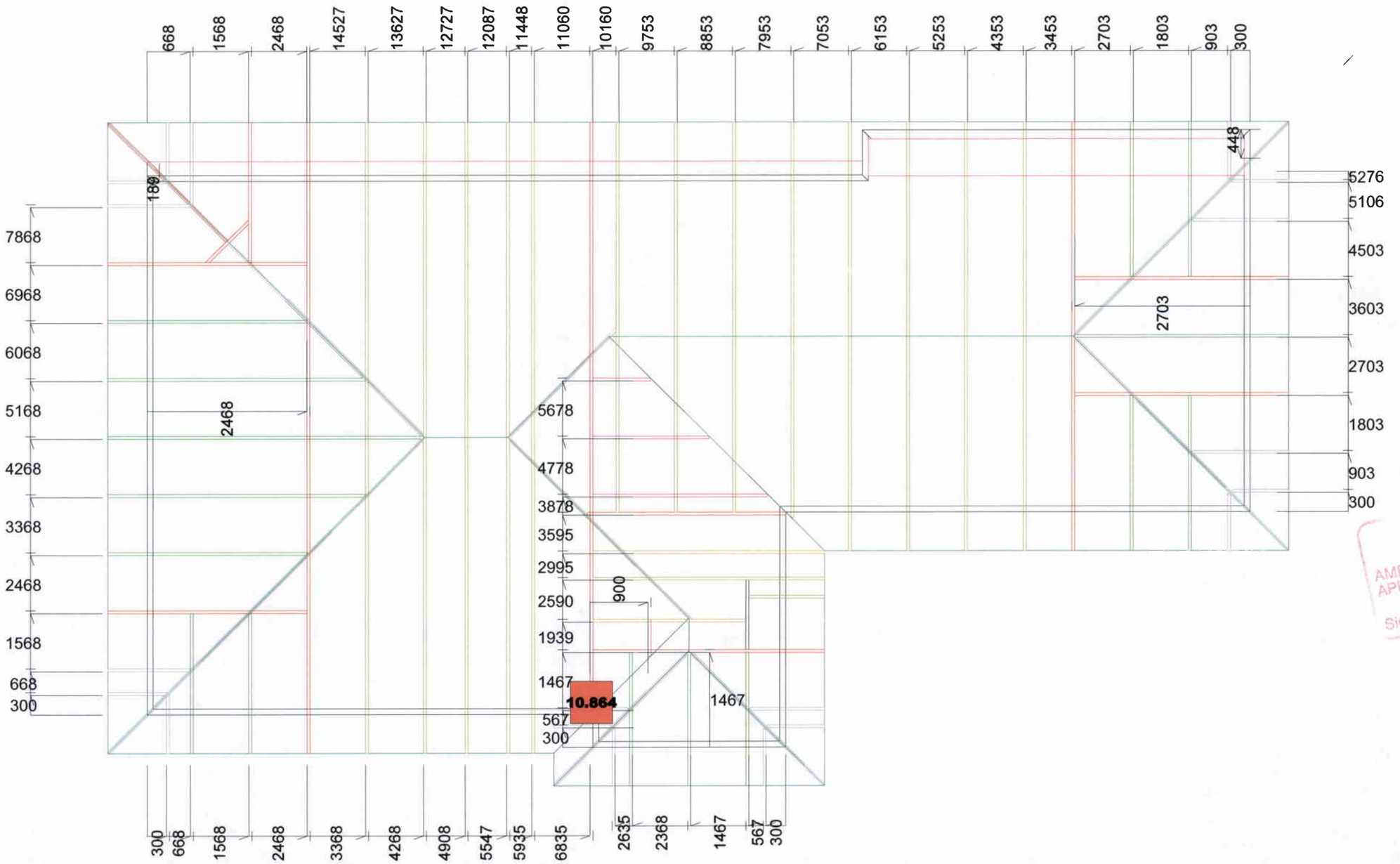
PDF created with pdfFactory Pro trial version www.pdffactory.com

131056A

_kN NOTIFICATION OF POINT LOADED LINTELS AND POINT LOADS ON INTERNAL OR EXTERNAL WALLS WHERE THE DOWNLOAD IS HIGHER THAN 10kN.
Note: If no point loads indicated, loading does not exceed 10kN.

FINAL LAYOUT

RECEIVED
27 AUG 2013
BY:



CARTERS
YourBuildingPartner

Christchurch Manufacturing
19-21 Broughs Road, Christchurch
03 359 2731

JOB No **CD95927**

Client: Spanbild
Job Name: P58582 - Finlayson
Address: Lot 130 Silverstream
Kaiapoi
Chch

Pitch: 25.0deg
Roof Material: Galv Iron .5mm
Soffit Overhang: 600mm
Wind Area: High
Snow Load(factored): 0.526kPa

Trusses and rafters at 900mm max centres unless stated otherwise.

This layout is to be read in conjunction with the Architectural plans.

DRAWN BY John Simpson

DATE 20 Aug,2013 | PAGE 2 of 2

Waimakariri District Council
AMENDED Plan and/or Specifications APPROVED.
Signed 29/8/13

NOTE

Please contact your local CARTERS Manufacturing Branch for any queries regarding this layout or if any on site remedial work is required.

No modifications to Roof Trusses or Wall Frames are to be undertaken without first obtaining written authority from CARTERS Manufacturing.

Truss Dimensions

QUALITY ASSURANCE FTMA NEW ZEALAND FRAME & TRUSS MANUFACTURERS ASSOCIATION

PDF created with pdfFactory Pro trial version www.pdffactory.com

131056A

CARTERS

RECEIVED
27 AUG 2013
BY:

Manufacturing Statement

This statement,supplied to the Carters customer listed below, has been provided to assist a Building Consent Authority in determining compliance with the NZ Building Code and is issued subject to Carters standard terms and conditions of sale.

21-August-2013
SPANBILD
LOT 130 SILVERSTREAM, KAIAPOI
CD95927

Roof Trusses
Roof trusses supplied by Carters to the above project have been manufactured as per any Producer Statement Design issued by Carters for consent purposes on the above project using verified timber grades that meet the requirements of NZS3603 and NZS3622. Carters is a licensed MiTek fabricator.

Pre Nailed Wall Frames
Pre-nailed Wall frames supplied by Carters to the above project have been manufactured as per the plans, specifications and information provided by the customer using verified timber grades, where required, that meet the requirements of NZS3603 and NZS3622. Laminated veneer lumber (LVL) lintels that have been supplied as part of a pre-nailed wall frame meet the requirements of AS/NZS4357 and NZS3603.

Timber Treatment
All treated timber products used in any items manufactured by Carters in the above project, are not less than the minimum levels specified in the plans, specifications and information supplied by the customer.

NZ Standards
NZ Standards listed in this statement are cited as acceptable solutions in the approved documents NZBC B1/AS1 Structure or B2/AS1 Durability as a means of complying with the NZ Building Code.

Simon Bruce
CHRISTCHURCH MANUFACTURING

Carters, a division of Carter Holt Harvey.

Waimakariri District Council
AMENDED Plan and/or Specifications
APPROVED.
Signed 23/8/13

131056A

MiTek New Zealand Limited

Correspondence from : **AUCKLAND**
40 Neales Road, East Tamaki 2013
PO Box 58-014, Botany 2163
Phone:09 274 7109
Fax: 09 274 7100

CHRISTCHURCH
14 Pilkington Way, Wigram 8042
PO Box 8387, Riccarton 8440
Phone:03 348 8691
Fax: 03 348 0314

www.miteknz.co.nz

RECEIVED
27 AUG 2013
BY:

MiTek 20/20 Engineering 4.6.6.160

Printed: 11:04:33 21 Aug 2013

PRODUCER STATEMENT for MiTek 20/20® TRUSS DESIGN - Version 4.6

ISSUED BY: **MiTek New Zealand Limited**

TO: **Christchurch Manufacturing**

IN RESPECT OF: **MiTek® Truss Designs**

This producer statement covers the MiTek 20/20® truss design and the structural performance of the GANG-NAIL® connector plate for the job reference **CD95927** and may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

The MiTek 20/20® truss design program has been developed by MiTek New Zealand Limited for the design of MiTek ® timber roof, 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 Verification 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:

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

I believe 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: Wednesday, 21 August 2013**

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MiTek New Zealand Limited

Waimakariri District Council
AMENDED Plan and/or Specifications
APPROVED
Signed 8/8/13

PDF created with pdfFactory Pro trial version www.pdffactory.com

Job: CD95927 Client: Spanbild Site: P58582 - Finlayson
Phone: Lot 130 Silverstream
Kaiapoi
Description: Spanbild Chch
Building Consent No.: Phone:

RECEIVED
27 AUG 2013
BY:

MITEK FABRICATOR DESIGN STATEMENT

This statement is issued by MiTek accredited fabricator **Christchurch Manufacturing**, being licensed to use the MiTek 20/20® software, to the client listed above and may be used by the Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

MiTek 20/20® TRUSS DESIGN DATA

The MiTek 20/20® computer design for this job is based on the following design parameters entered into the program. The Fabricator shall ensure that these job details are current and relevant to the project for the design of the MiTek ® trusses.

Job Details

Roof Truss

Timber Group:	MSG8 DDP H1.2	Importance Level :	2	Design Working Life :	50 years
Roof		Pitch:	25.000 deg	Nominal Overhang:	600 mm
Material:	Galv Iron .5mm	**Ceiling**		**Wind**	
Dead Load:	0.210 kPa	Material:	Rondo screwed to BC	Area:	High (44.0 m/s)
Restraints:	900 mm centres	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Live Load:	Qur = 0.250 kPa	Restraints:	600 mm centres	**Snow**	
	Qc = 1.100 kN	Live Load:	Qc = 1.400 kN	Location:	Christchurch (N4) at 100 m
				Open Ground Load:	0.900 kPa
				Basic Roof Load:	0.441 kPa

The timber for these MiTek® trusses shall be treated to the requirements of NZS 3602:2003 and shall be graded to the requirements of NZS 3603:1993. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in a **"closed environment"**, as defined by NZS3604:2011 Section 4.

MiTek® Truss List

Legend: * = detail only, ? = input only, ~~Txx~~ = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required GB = gable brace required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
CJ1	1	2282	25.000	900	J2E	1	2468	25.000	900	*R6	2	1494	25.000	900
CJ1A	1	2282	25.000	900	J3	1	1772	18.249	900	*R7	1	890	25.000	900
CT1	1	5930	25.000	900	J4	1	1567	25.000	900	*R8	1	4241	18.249	900
CT2	3	5930	25.000	900	J5	1	1568	25.000	900	T1	2	8581	25.000	900
*HB1	1	2356	18.249	900	J5A	1	1568	25.000	900	T2	1	2980	25.000	900
*HB2	1	3973	18.249	900	J6	1	2703	25.000	900	T3	1	2368	25.000	900
*HB3	2	2901	18.249	900	J6A	1	2703	25.000	900	T4	1	8581	25.000	640
*HB4	1	6862	18.249	900	J6B	1	2703	25.000	900	T5	1	5451	25.000	900
*HB5	1	4648	18.249	900	J7	1	1803	25.000	900	T5A	1	5451	25.000	900
*HB5A	1	4648	18.249	900	J7A	1	1803	25.000	900	T5B	3	5451	25.000	900
HT1	1	2980	25.000	900	J8	1	2980	25.000	900	T6	1	935	18.248	900
HT2	1	2980	25.000	503	PTG1	1	1078	0.000	900	T7	1	567	25.000	900
HTG1	1	2468	25.000	900	*R1	1	558	25.000	900	TG1	1	8581	25.000	900
HTG2	1	2980	25.000	900	*R2	7	891	25.000	900	TG2	1	8581	25.000	900
J1	2	1467	25.000	900	*R3	1	1158	25.000	900	TR1	1	8581	25.000	900
J1A	1	1467	25.000	900	*R4	1	1281	25.000	900	TR2	1	8581	25.000	900
J2	1	2468	25.000	900	*R4A	1	1281	25.000	900	V1	1	574	25.000	900
J2A	1	2468	25.000	900	*R4B	1	1281	25.000	900	V2	1	1797	25.000	900
J2B	1	2468	25.000	900	*R5	2	913	25.000	900	V3	1	897	25.000	900
J2C	1	2468	25.000	900	*R5A	1	913	25.000	900	V4	1	2697	25.000	900
J2D	1	2468	25.000	900	*R5B	1	913	25.000	900					

Total quantity : 77

Waimakariri District Council
AMENDED Plan and/or Specifications APPROVED.
Signed MCH 28/8/13

The computer design input has been carried out by:

Name of Computer Operator: Nick Buckley

Qualifications and Title: Truss Detailer

Signed:

CARTERS
A Division of Carter Holt Harvey

Dated: Wednesday, 21 August 2013

PDF created with pdfFactory Pro trial version www.pdffactory.com

131056A

Job: CD95927 Client: Spanbild Site: P58582 - Finlayson
Phone: Lot 130 Silverstream
Description: Spanbild Kaiapoi
Building Consent No.: Chch
Phone:

TRUSS BEARINGS EXCEEDING 10KN REPORT
- Ultimate Limit State Loads

RECEIVED
27 AUG 2013
BY:

MiTek® Truss List
Legend: ? = Input only, ~~Tx~~ = failed design, Ø = non certified, Unmarked trusses = designed successfully

Critical Trusses	Qty	Span (mm)	Joint	Bearing Reactions (kN) Down	Uplift
TG1	1	8581	M	10.713	8.718

Waimakariri District Council
AMENDED Plan and/or Specifications
APPROVED:
Signed 28.8.13

Note:
1) Select appropriate Slab Thickening Detail from the MiTek 'Internal Load Bearing On Concrete Floor Slabs' brochure.

PDF created with pdfFactory Pro trial version www.pdffactory.com

131056 A

Shirley Cresswell

From: John Larcombe <john.larcombe@versatile.co.nz>
Sent: Tuesday, 27 August 2013 9:02 a.m.
To: Building Services
Subject: FW: Lot 130 Silverstream BC131056
Attachments: CD95927.pdf; CD95927 - FTMA Cert.pdf

RECEIVED
27 AUG 2013
BY:

As built Truss lay out

John Larcombe | Contracts Manager | Versatile Homes and Buildings

DDI 03 343 5822 | **M** 027 705 7601 | **F** 03 348 9093 | **E** john.larcombe@versatile.co.nz | **W** www.versatile.co.nz

3 Springs Road, Sockburn, P O Box 11-336, Christchurch, New Zealand

CAUTION: This message may contain confidential information intended only for the use of the addressee named above. If you are not the intended recipient of this message, any use or disclosure of this message is prohibited. If you received this message in error please notify Mail Administrators immediately. This information is scanned for viruses during creation. No responsibility will be assumed for the integrity of this material as received. The recipient should take all necessary precautions to check for and eradicate possible virus infections. You must obtain all necessary intellectual property clearances before doing anything other than displaying this message on your monitor. There is no intellectual property licence implied by your receipt of this message. Any views expressed in this message are those of the individual sender and may not necessarily reflect the views of Spanbild Holdings Limited or any of its affiliated divisions, subsidiaries or organisations

From: Buckley, Nick (Carters Christchurch Manufacturing) [mailto:Nick.Buckley@carters.co.nz]
Sent: Tuesday, 27 August 2013 8:51 a.m.
To: John Larcombe
Subject: Lot 130 Silverstream

As Built as requested

Regards

CARTERS Nick Buckley Detailer

YourBuildingPartner ■ DDI ■ FAX ■

19-21 Broughs Rd, Harewood, Christchurch | PO Box 4643, Christchurch 8140 | www.carters.co.nz

WORKING SAFELY TOGETHER - IT'S GOOD BUSINESS

DISCLAIMER: This electronic message together with any attachments is confidential. If you are not the intended recipient, do not copy, disclose or use the contents in any way. Please also advise us by return e-mail that you have received the message and then please destroy. Carter Holt Harvey is not responsible for any changes made to this message and / or any attachments after sending by Carter Holt Harvey. We use virus scanning software but exclude all liability for viruses or anything similar in this email or any attachment.

Click here to report this email as spam.

This message has been scanned for malware by Websense. www.websense.com

ISSUED CONSENT BC131056

BC131056

Davis Ogilvie
Professionals
Engineers • Surveyors • Planners

File No: 30844

5 March 2013

Sliverstream Estates Ltd
160A Hussey Road
Northwood
CHRISTCHURCH 8051

Attention: Fred Ra me

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

Dear Sir

SHALLOW GEOTECHNICAL INVESTIGATION LOT 130 SILVERSTREAM, KAIAPOI

1. INTRODUCTION

Davis Ogilvie & Partners Ltd has been commissioned by Silverstream Estates Ltd to determine the ground bearing capacity at the aforementioned address.

Davis Ogilvie did not perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation of the site. Variations in conditions may occur between investigatory locations, and there may be conditions onsite which have not been revealed by the investigation, which have not been taken into account in the report. Assessments made in this report are based on the conditions found onsite. No warranty is included; either expressed or implied that the actual conditions will conform to the assessments contained in this report.

This report has been prepared solely for the purposes of Silverstream Estates Ltd. The information contained herein is confidential, and shall not be passed on to any third party, other than the Local Building Consent Authority, without prior written permission of Davis Ogilvie & Partners Ltd. No responsibility is accepted for any use outside the scope of this report. This report does not cover slope stability, suitability of the site (e.g. flooding), or potential future liquefaction of the site.

2. DESK STUDY

The site is situated in Kaiapoi. Following the Christchurch earthquake series limited disruption to services and infrastructure was observed in the area. Onsite there was no evidence of surface liquefaction, faults, scarps or fissures, and surface liquefaction was not evident in the neighbourhood following the February 2011 event according to LINZ satellite imagery (24 February 2011).

The published site geology is identified as being dominantly alluvial sand and silt overbank deposits (Springston formation of the Yaldhurst Member)[1]. Test pit logs from the site investigation show fill overlying alluvial sand, and silt which confirm the published geology.

Geotechnical classification and reporting for the Silverstream Estates Development (stage two) carried out by Golder Associates (2012)[2] recommends a land technical category of TC2, which identifies that minor to moderate land damage from liquefaction is possible in future large earthquakes.

---

[1] Brown L.J. et al. (1992), Geological Map 1, Geology of the Christchurch Urban Area, Scale 1:25 000. Institute of Geological and Nuclear Sciences, Lower Hutt New Zealand.

[2] Golder Associates (2012), Geotechnical Assessment Report –Silverstream Estates, Kaiapoi Stage two, Golder Associates, Christchurch, New Zealand.

Davis Ogilvie & Partners Ltd, 186 Hazeldean Road, Addington, Christchurch 8024 I P O Box 589, Christchurch 8140
(t) (03) 366 1653 0800 999 333 (f) (03) 379 2348 (e) admin@do.co.nz (w) www.do.co.nz
CHRISTCHURCH I NELSON I GREYMOUTH I TIMARU

Engineered filling of parts of Stage 2 has been carried out as part of the development of the subdivision. The fill has been certified in accordance with NZS 4431:1989. A site plan indicating fill depths and locations is attached to this letter.

3. SOIL TESTING AND RESULTS

Site visits including in-situ soil testing were conducted on 13 February 2013. The site investigation comprised of four dynamic cone penetrometer (dcp) tests conducted to a maximum depth of 3.0 m below existing ground level (bgl).

Test pits carried out on 14 February 2013 were excavated on the boundary adjoining lots 117,118,130,131 and 118, 119, 129, 130. The test pits were excavated to a maximum depth of 2.9 m, where saturated soils caused collapse. Locations of the tests, soil logs and penetrometer tests results are attached to this letter.

Piezometer measurements taken by Golder Associates (2012)[3] to determine the ground water level (gwl) at borehole 1003 located to the south west side of stage 2, indicates a potential maximum gwl of 1.16 m bgl, this was measured on the 20/12/2011. The gwl was encountered at a depth of 2.6 m during the test pit excavation.

In-situ soil testing by means of an excavated test pit revealed engineered fill underlain by alluvial deposits of sand and silt. An indicative soil profile is presented in Table 1.

Table 1: Indicative Soil Pro ile

De t m	De cri tion	DCP blo /100	E timated Ultimate Bearin [2] Ca acit Pa
0 - 0.4	Topsoil	N/A	N/A
0.4 – 1.3	Sandy gravelly SILT (engineered fill)	5 - 19	300+
1.3 – 1.8	Clayey SILT	2 - 5	200+
1.8 – 2.6	SAND	7 - 10	300+
2.6 – 2.9	SAND some silt	8 - 9	300+

1. Test pit logged to a total depth of 2.9 m where saturated soils caused collapse.
2. Estimated Ultimate Bearing Capacity (kPa) determined by correlations from Stockwell (1977).

4. DISCUSSION

Ground bearing pressure is discussed in terms of 'Good Ground', as defined by NZS 3604:2011 *Timber Framed Buildings* (this is an ultimate bearing strength of at least 300 kPa). 'Good Ground' excludes land where liquefaction and/or lateral spreading could occur and excludes soils that have a significant organic content or uncontrolled fill. As the site has been deemed to the TC2 the 'Good Ground' criteria does not apply.

Engineered fill was encountered on site from a depth of 0.4 m to 1.3 m. The fill has been certified in accordance with NZS 4431:1989. Soil testing completed on site confirmed that the ground exceeded 300 kPa ultimate bearing capacity.

Based on in-situ testing and the proposed TC2 classification by Golder Associates (2012)[3] it is determined that the ground for the aforementioned lot has adequate ultimate bearing capacity in excess of 200kPa, 0.4 m bgl (below the organic topsoil layer) for buildings designed in accordance

[3] Golder Associates (2012), Geotechnical Assessment Report –Silverstream Estates, Kaiapoi Stage two, Golder Associates, Christchurch, New Zealand.

with the MBIE (2012)[4] guidelines, therefore foundation of any dwelling constructed onsite will not require specific engineering design provided these guidelines are followed.

The foundation types suitable for the TC2 land are dependent on the house construction type and the bearing capacity of the underlying soils. Figure 1 details the different house construction types suitable for TC2 sites.

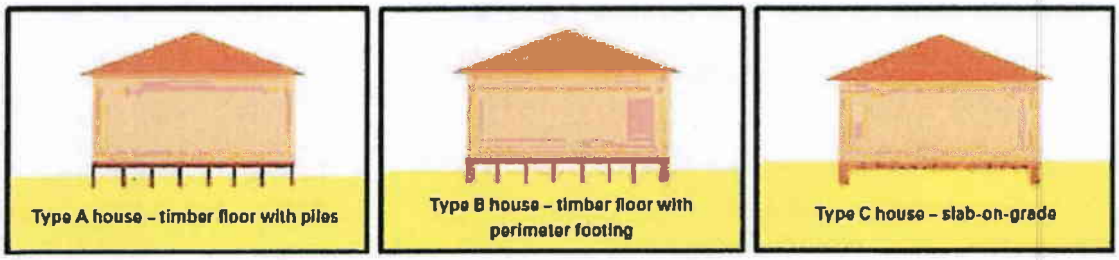


Figure 1: House construction types MBIE (2012)

TC2 sites with an ultimate bearing capacity over 300 kPa can have Type A and B foundations utilising shallow timber piles or timber piles and a perimeter wall system, designed and constructed in accordance with NZS 3604:2011. Onsite 300 kPa was not consistently achieved until a depth of 1.8 m (bgl). Therefor Type A and B foundations will require specific engineering design.

For concrete slab foundations (Type C) a stiffened raft slab will be required in the TC2 areas with a minimum bearing of 200 kPa (ultimate). There are a number of foundation options are available as detailed in Section 5.3.1 of the Guidance document MBIE (2012). Onsite 200 kPa was achieved at a depth of 0.4 m (bgl)

If alternative solutions are proposed outside the scope of these documents then specific engineering design of the foundations will be required.

5. CONCLUSION

Based on an ultimate bearing capacity of 200 kPa achieved 0.4 m bgl (below the organic topsoil layer) specific engineering designed foundations are not required for the site. Residential dwelling foundations shall be constructed in accordance with MBIE (2012) TC2 guidelines.

Should soft or suspect ground conditions be encountered onsite, the builder must contact Davis Ogilvie or an appropriately qualified and experienced engineer to confirm foundation requirements.

If you have any queries or wish to discuss the report further please feel free to contact either of the undersigned.

Yours faithfully
DAVIS OGILVIE and PARTNERS LTD

Prepared By:
BEN VAN BUSSEL

Geotechnical Technician
Dip civil, GIPENZ
Email: benv@do.co.nz

Reviewed By:
ELLIOT DUKE
DIRECTOR
Senior Civil and Geotechnical Engineer
BE (Hons), MIPENZ, CPEng
Email: elliot@dop.co.nz

Enclosed: 2 x Site Bearing Strength and Bore Logs, 1 x Site Test Location Plan, 1 x fill plan

[4] Ministry of Business, Innovation and Employment (2012), Repairing and rebuilding houses affected by the Canterbury earthquakes, Ministry of Business, Innovation and Employment, Wellington, New Zealand.

Davis Ogilvie & Partners Ltd
186 Hazeldean Road, Addington, Christchurch
P O Box 589, Christchurch, 8140, New Zealand
(03) 366 1653 0800 999 333 (03) 379 2348
admin@do.co.nz www.do.co.nz
Offices in Christchurch, Nelson, Greymouth and Timaru

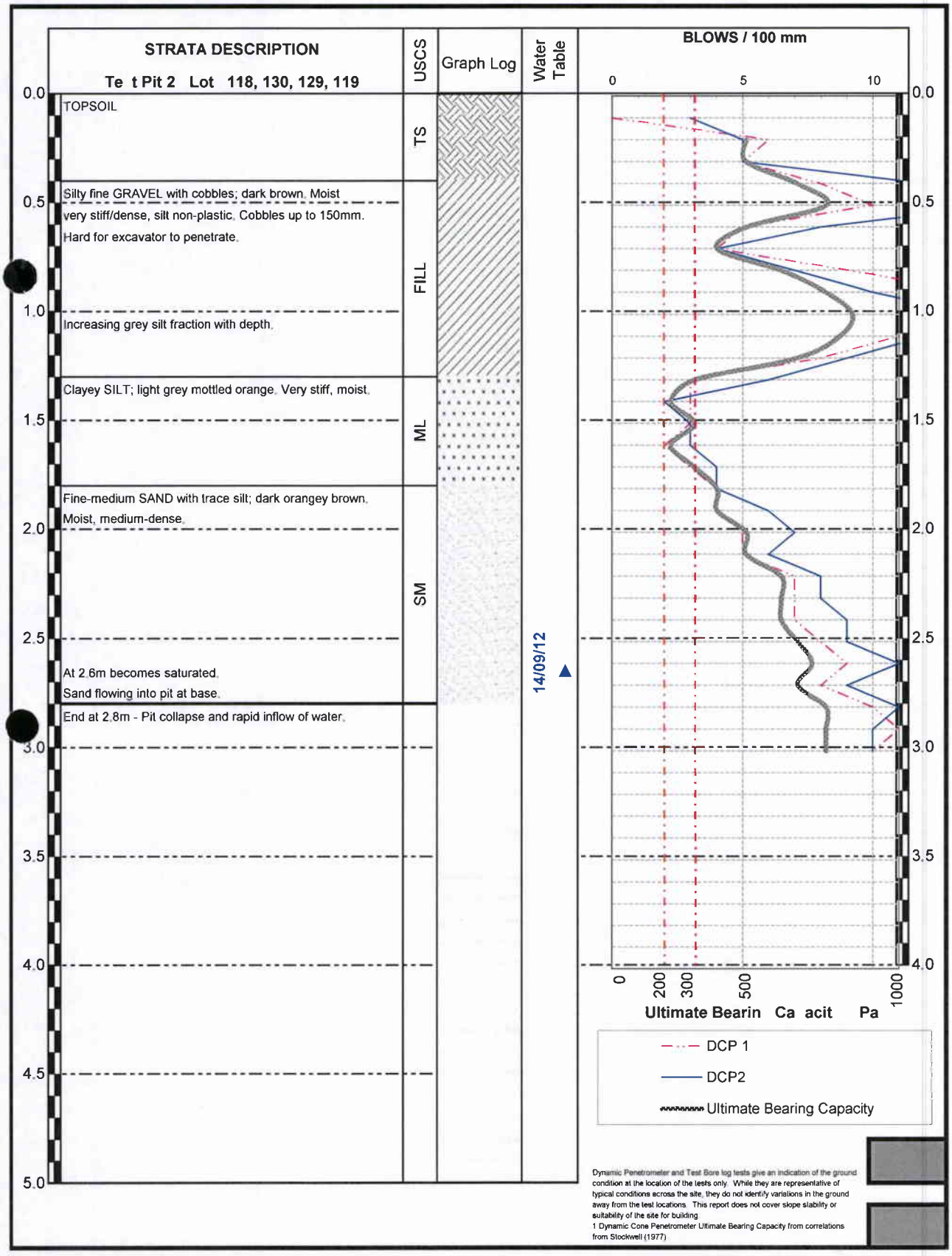
ISSUED CONSENT BC131056

BC131056

30844
P1-2.TP2

BORE LOG/SCALA PENETROMETER RESULTS

Pro ect:	Silverstream Stage II Lot 130	Date:	5/02/2013
Client:	Silverstream Estates Ltd	Time:	11am
Te t Location	Refer to attached Geotechnical Site Plan	Field Staff:	CH
Note :	Shallow Investigation	Equipment:	DCP



Dynamic Penetrometer and Test Bore log tests give an indication of the ground condition at the location of the tests only. While they are representative of typical conditions across the site, they do not identify variations in the ground away from the test locations. This report does not cover slope stability or suitability of the site for building.
1 Dynamic Cone Penetrometer Ultimate Bearing Capacity from correlations from Stockwell (1977)

Davis Ogilvie & Partners Ltd.
186 Hazeldean Road, Addington, Christchurch
P O Box 589, Christchurch, 8140, New Zealand

(03) 366 1653 0800 999 333 (03) 379 2346
admin@do.co.nz www.do.co.nz

Offices in Christchurch, Nelson, Greymouth and Timaru

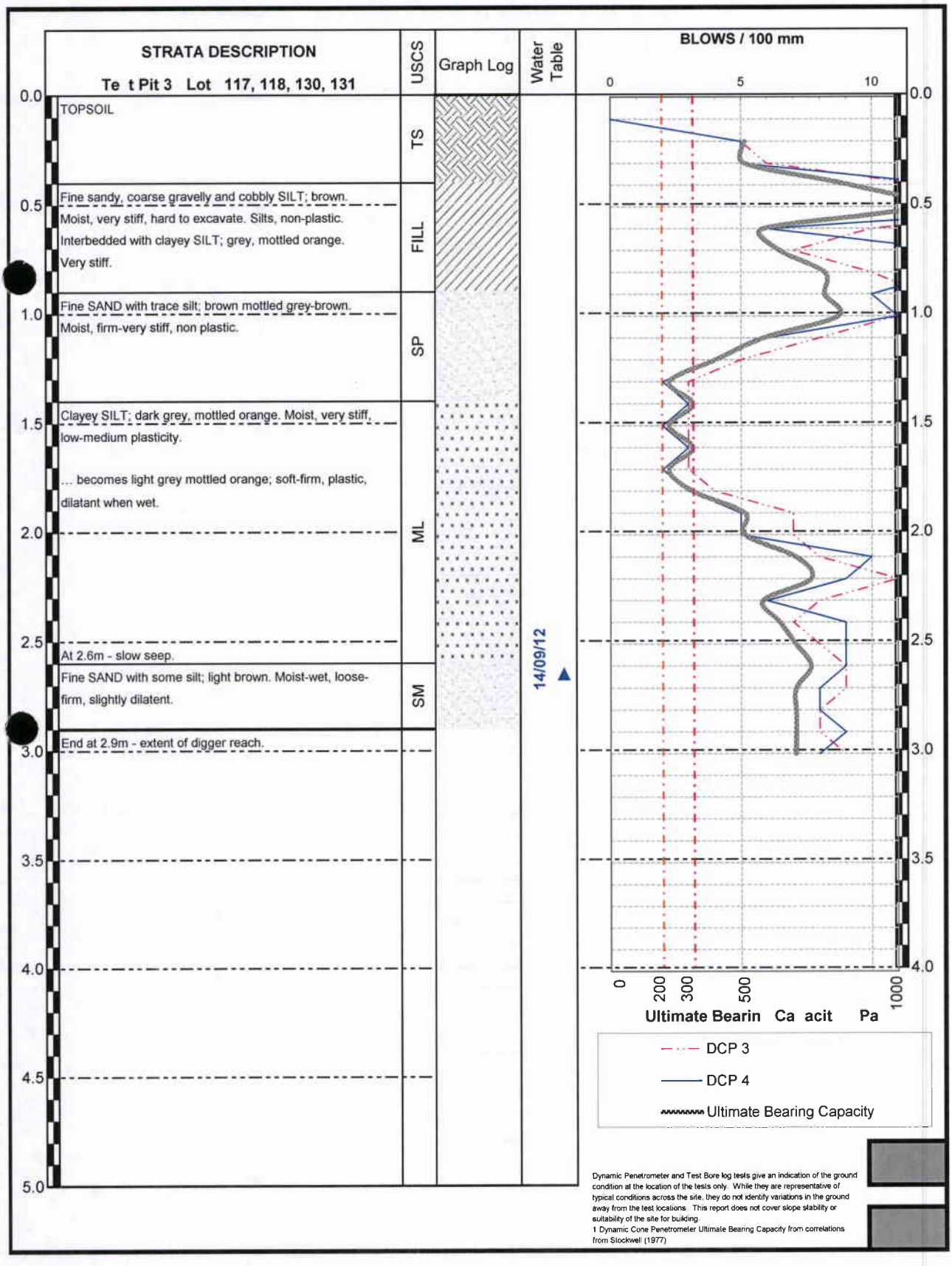
ISSUED CONSENT BC131056

BC131056

Job No. 30844
P3-4.TP3

BORE LOG/SCALA PENETROMETER RESULTS

Pro ect:	Silverstream Stage II Lot 130	Date:	5/02/2013
Client:	Silverstream Estates Ltd	Time:	11am
Te t Location	Refer to attached Geotechnical Site Plan	Field Staff:	CH
Note :	Shallow Investigation	Equipment:	DCP



Dynamic Penetrometer and Test Bore log tests give an indication of the ground condition at the location of the tests only. While they are representative of typical conditions across the site, they do not identify variations in the ground away from the test locations. This report does not cover slope stability or suitability of the site for building.

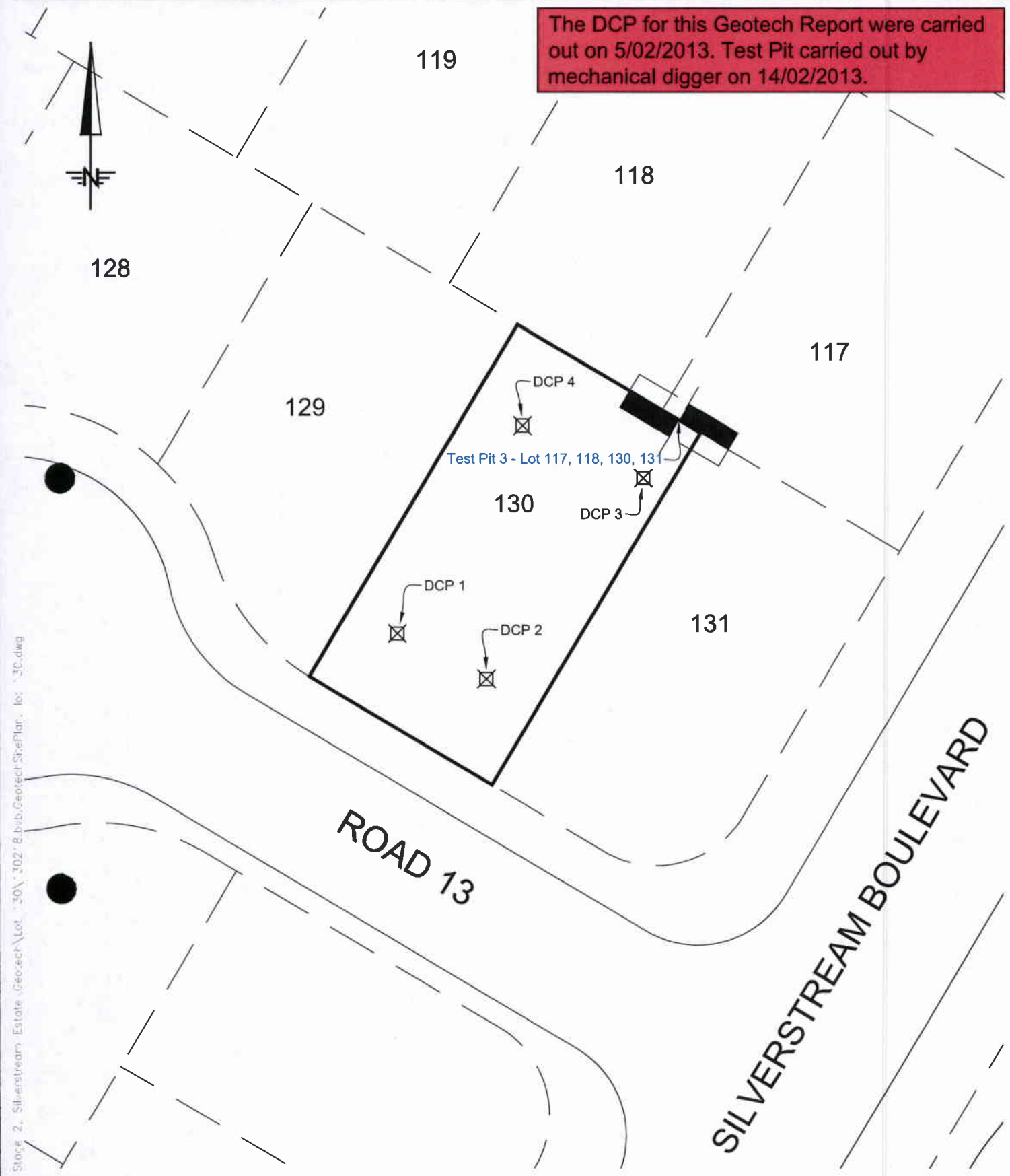
1 Dynamic Cone Penetrometer Ultimate Bearing Capacity from correlations from Stockwell (1977)

Disclaimer: This document shall only be reproduced in full with approval from Davis Ogilvie

RC 131056 CONSENT BC131056

BC131056

The DCP for this Geotech Report were carried out on 5/02/2013. Test Pit carried out by mechanical digger on 14/02/2013.



- Boundary and test locations are approximate.

0m 5m 10m 15m 20m 25m 30m

Scale 1:300

issue	date	reason	approved
A	02/13	Geotechnical Report Diagram	ED

CAD ref: 130218.bvb.GeotechSitePlan.Lot 130

Davis Ogilvie
Ph. 03 366-1653
Engineers - Surveyors - Planners
186 Hazeldean Road , Addington
Christchurch, New Zealand
P.O. Box 589 Christchurch 8140
OFFICES ALSO IN:
Nelson - Timaru - Greymouth

Geotechnical Site Plan

Silverstream Estates, Kaiapoi
Lot 130

design	drawn	QA check	dwg	issue
BVB	BVB	TL	637	A
scale	date	file		
1:300 @ A4	02/13	30844		

Stage 2, Silverstream Estate Geotech\Lot 130\302 8.bvb.GeotechSitePlan. lot 130.dwg
cts\3Ce\3C841

ISSUED CONSENT BC131056 BC131056

Building Code Clause(s) B1, B2

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on the reverse side)*

ISSUED BY: HFC: FOUNDATIONS LTD *(Design Firm)*

TO: VERSATILE HOMES *(Owner/Developer)*

TO BE SUPPLIED TO: WAIMAKARIRI DISTRICT COUNCIL *(Building Consent Authority)*

IN RESPECT OF: WAFFLE SLAB DESIGN *(Description of Building Work)*

AT: SILVERSTREAM, KAIAPOI *(Address)*

LOT 130 DP SO

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

We have been engaged by the owner/developer referred to above to provide WAFFLE SLAB DESIGN services in respect of the requirements of *(Extent of Engagement)*

Clause(s) B1/VM1 & AS1, VM4, B2/VM1(Structural Durability Only) of the Building Code for

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

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

☑ Compliance Documents issued by Department of Building & Housing *(verification method / acceptable solution)*

& soil report by DAVIS OGILVIE & PARTNERS LTD, REF: 30844, DATED: MARCH 2013 or

☐ Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled WAFFLE SLAB and numbered 13075 S100 -> S101;

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

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions confirmation of design founding conditions

(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

I, ROBERT FOSTER *(Name of Design Professional)* am: ☑ CPEng 173329 #

☐ Reg Arch #

I am a Member of : ☑ IPENZ ☐ NZIA and hold the following qualifications: B.E.

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

The Design Firm is a member of ACENZ ○ YES ○ NO

SIGNED BY ROBERT FOSTER ON BEHALF OF HFC: FOUNDATIONS LTD *(Design Firm)*

Date 28 MAR 2013 *(signature)*

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

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

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1992. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suite of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design	Intended for use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;
PS2 Design Review	Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;
PS3 Construction	Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2003[1] or Schedules E1/E2 of NZIA's SCC 2007 [2]
PS4 Construction Review	Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate. This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, IPENZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence-based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ)or the New Zealand Institute of Architects (NZIA), provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

*** Professional Indemnity Insurance**

As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to $500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-CM5)[3] (OL1-OL4)[2]. The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

1 *Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2003*

2 *NZIA Standard Conditions of Contract SCC 2007 (1st edition)*

3 *Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)*

www.acenz.org.nz
www.ipenz.org.nz
www.nzia.co.nz

IPENZ ENGINEERS NEW ZEALAND NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED ACENZ

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA

ISSUED CONSENT BC131056

BC131056

28 March 2013

The Building Consent Department
Waimakariri District Council
Private Bag 1005
Rangiora 7440

Dear Sir/Madam,

RE: Specific Structural Engineering Inspection Schedule for proposed foundations at Lot 130, Silverstream, Kaiapoi

HFC recommend the following minimum structural inspections be carried out by a Chartered Professional Engineer (or nominated representative) to enable the issue of a PS4 – Producer Statement - Construction Review.

Structural Inspection Schedule

Element	Inspection of:	# of inspections
Sub Grade	Inspection of cut / fill building platform to be completed by HFC: Civil & Structural (south) Ltd or geotechnical engineer	1
Foundation	Pre-pour Inspection of reinforcing and pod layout to be completed by HFC: Civil & Structural (south) Ltd	1
	Total number of inspections required:	**2**

Notes:

1. It is the responsibility of the owner's agent or contractor to notify the Engineer when inspections are to be required. Please provide at least 48hrs notice.
2. Inspections may be combined or added to at the discretion of the CPEng engineer.
3. Issue of a PS4 Producer Statement – Construction Review is dependent on the satisfactory completion of the specified works, and only issued for the work which has been inspected, and found to be in compliance with the structural documentation. We may ask contractor for PS3 Producer Statement – Construction prior to the issue of a PS4.
4. For engineering enquiries relating to this project please contact the office direct on 03 339 7000 quoting reference #: **13075**.

Yours faithfully
per: HFC Civil and Structural (South) Ltd

渡邊智明

Tom Watanabe
BE, ME, MIPENZ, CPEng, IntPE(NZ), RPEQ(Aust.), 1st Class Kenchikushi(JPN)

AUCK@HFC.CO.NZ
CHCH@HFC.CO.NZ
T: 09 367 1070
T: 03 339 7000
P.O. BOX 109 106, NEWMARKET, AUCKLAND
P.O. BOX 28 006, BECKENHAM, CHRISTCHURCH
HFC | GROUP
CIVIL & STRUCTURAL ENGINEERS

ISSUED CONSENT BC131056

13075

WAFFLE SLAB DESIGN

FOR:

VERSATILE HOMES

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

AT

SILVERSTREAM

130

KAIAPOI

WAIMAKARIRI DISTRICT

March 28, 2013

ISSUED CONSENT BC131056

HFC FOUNDATIONS LTD Civil and Structural Consulting Engineers	SPECIFICATION SHEET WAFFLE SLAB DESIGN	Proj. No. 13075 Date Mar-13 Page: A1

CLIENT NAME: VERSATILE HOMES

ADDRESS: SILVERSTREAM
KAIAPOI

LOT: 130

DP: (-)

COUNCIL: WAIMAKARIRI DISTRICT

DWG TITLE: HFC FOUNDATIONS LTD
WAFFLE SLAB

DRAWING NO.S: S100 -> S101

DESIGN PRINCIPAL CARACTERISTICS:

ROOF TYPE:	LIGHT	**0.25 kPa**	Max roof span:	**8.3 m**
STOREYS:	SINGLE			
EXTERIOR WALLS:	BRICK	**1.8 kPa**	Max stud height:	**2.4 m**

GEOTECHNICAL REQUIREMENTS:

Dep. Bearing capacity: **100 kPa**

Exp. Soil clasification: **MODERATELY (Ys<25) EXPANSIVE**

20<Ys<25 therefore differential mound movement Ym = 0.7Ys = **17.5** mm

HFC FOUNDATIONS LTD Civil and Structural Consulting Engineers	WAFFLE SLAB DESIGN FOR: VERSATILE HOMES SILVERSTREAM	Proj. No. 13075 Date Mar-13 Page: A2

SLAB DESIGN

1. GENERAL LIVING AREAS

DEAD (G)	Slab =	24 x 0.085 =	2.04	kN/m²	
	SDL =		0.50	kN/m²	
	Total =		**2.54**	kN/m²	
LIVE (Q)	Domestic:		**1.50**	kN/m²	
		=> 1.2G + 1.6Q =	**5.45**	kN/m²	
Two way spanning slab: $L_x = L_y$ =			1.10	m	
	Mult =	5.45 x 1.1² / 16 =	**0.41**	kNm/m	
Eurosteel SE615-500STD Mesh:					
	A_s =		158	mm²/m	
	F_y =		500	Mpa	
	d =		40	mm	
	a =	(158 x 500) / (0.85 x 1000 x 25) =	3.72	mm	
	ΦM =	0.85 x 158 x 500 x (40 - 3.72 / 2) =	2.56	kNm	**OK**
Min. shrinkage reinforcement:		0.7 / 500 x 85 x 1000 =	119	mm²	
Eurosteel SE615-500STD			158	mm²	**OK**

no sawcuts

2. GARAGE AREAS

DEAD (G)	Total =		**2.54**	kN/m²	
LIVE (Q)	Garage:		**2.5**	kN/m²	
	P (applied to external panels) =		**6.5**	kN	
	P (applied to internal panels) =		**13**	kN	
		=> 1.2G + 1.6Q =	**7.05**	kN/m²	
Two way spanning slab: $L_x = L_y$ =			1.10	m	

Mult = 7.05 x 1.1² / 16 =	**0.53**	or	<	2.56 kNm	**OK**
Mult = 1.2 x 2.54 x 1.1² / 16 + 1.6 x 6.5 x 1.1 / 8 =	**1.66**	external	<	2.56 kNm	**OK**
Mult = 1.2 x 2.54 x 1.1² / 16 + 1.6 x 13 x 1.1 / 16 =	**1.66**	internal	<	2.56 kNm	**OK**

HFC FOUNDATIONS LTD Civil and Structural Consulting Engineers	WAFFLE SLAB DESIGN FOR: VERSATILE HOMES SILVERSTREAM	Proj. No. Date Page:	13075 Mar-13 A3

BEARING UNDER SLAB

Allowable bearing pressure:	66.66667	kPa	
Ultimate bearing pressure:	100	kPa	

Assume loads can be transferred to subgrade in 2 Ways:

1. Direct Bearing:

Slab load transmitted through polystyrene blocks 5.04 kN/m²

Ok by inspection

2. Rib Bearing:

Typical rib 100 mm wide

Check ultimate bearing under a typical 1200 x 1200 panel

Ultimate					
Bearing load from	Slab:	5.45 x 1.2² / 0.22 =	35.66	kN/m²	
(living areas)	S/W ribs	7.2 *0.1/0.1 =	7.20	kN/m²	
			42.86	**kN/m²**	**OK**
Ultimate					
Bearing load from	Slab:	7.05 x 1.2² / 0.22 =	46.13	kN/m²	
(garage areas)	S/W ribs	7.2 x 7.2 *0.1/0.1 =	7.20	kN/m²	
			53.33	**kN/m²**	**OK**

SETTLEMENT SOIL PRESSURES

USE LONG TERM LIVE LOAD REDUCTION FACTOR =		0.4	
Living areas :	Load = (2.54 + 0.4 x 1.5) x 1.2² / 0.22 =	20.55	kPa
Garage areas:	Load = (2.54 + 0.4 x 2.5) x 1.2² / 0.22 =	23.17	kPa
S/W ribs:		7.20	kPa
	=> Max bearing load for settlement =	**30.37**	kPa

ISSUED CONSENT BC131056

HFC FOUNDATIONS LTD Civil and Structural Consulting Engineers	WAFFLE SLAB DESIGN FOR: VERSATILE HOMES SILVERSTREAM	Proj. No. Date Page:	13075 Mar-13 A4

EXTERNAL FOOTINGS

HOUSE DATA		DEAD (G)	LIVE (Q)	
LIGHT ROOF:	8.3 m maximum roof span x 0.25 kPa	1.19	1.19	[kN/m]
WALL:	2.4 m high brick wall x 1.8 kPa	4.32		[kN/m]
	300 wide footing	2.77		[kN/m]
	Ground floor G = 2.54 x 0.6	1.52		[kN/m]
	Ground floor Q = 1.5 x 0.6		0.90	[kN/m]
	TOTAL	**9.80**	**2.09**	**[kN/m]**

Wult = 1.2G + 1.6Q =	**15.10**	kN/m			
Exterior footing width:	**300**	mm			
Ultimate Bearing load on external footing =	**50**	kPa	<	**100 kPa**	**OK**

SLIDING

SEISMIC ZONE FACTOR Z=0.3, IN ACCORDANCE WITH SESOC GUIDENCES FOR THE CHRISTCHURCH REGION. SHEAR KEYS NOT SUITABLE FOR AREAS SUBJECT TO LIQUEFACTION IN ACCORDANCE WITH DBH GUIDELINES. RELY ON FRICTION LEVEL TO RESIST SLIDING.

SETTLEMENT: SOIL PRESSURES

USE LONG TERM LIVE LOAD REDUCTION FACTOR = 0 FOR ROOFS

Exterior footing width =	300	mm
Max bearing load for settlement =	33.88	kPa

ISSUED CONSENT BC131056

HFC FOUNDATIONS LTD Civil and Structural Consulting Engineers	WAFFLE SLAB DESIGN FOR: VERSATILE HOMES SILVERSTREAM	Proj. No. Date Page:	13075 Mar-13 A5

METHODOLGY AND CONSTRUCTION SEQUENCE

1/ Clear topsoil and form a level building platform (hardfill as required).

2/ Ensure/confirm 66.6666666666667kPa allowable bearing capacity unless a specific design has been carried out for lower bearing capacities.

3/ In acccordance with NZS3604:2011 expansive clay shall be assumed to be present in the soil supporting the foundation unless:

(a) Reasonable enquiry does not reveal any incidence of major cracks in dry weather on the builidng site itself or in the surrounding locality

(b) The locality has not been identified as an area where expansive clay is likely to be found

(c) Excavation for foundation does not reveal plastic clay

or

Geotechnical investigations have been carried out and do not reveal expansive clays
Where expansive clays have been identified additional reinforcing and other details may be required and a specific design by HFC Foundations Ltd is required.

5/ Cover building plantform with 20mm sand blinding.

6/ Cover blinding with DPC.

7/ Place 1100 x 1100 x 300 thick polystyrene panels in a pattern as shown on the foundation plan (i.e 1200 x 1200 grid).

8/ Cut out additional internal load bearing foundation thickenings where shown and reinforce slab and thickenings (refer to additional details for expansive clays).

9/ Refer to special details required for expansive soils (if any) and provide additional reinforcing to suit

10/ Refer to architectural drawings for all dimensions, recesses and under slab service locations.

11/ Waste pipes to be installed in accordance with the New Zealand Building Code.

12/ Place reinforcing, pour topping slab, internal and exterior thickenings in one operation.

13/ Eurosteel Seismic 500E Grade Mesh SE615-500STD should be used. Saw cut slab in accordance with the drawings.

14/ 25 Mpa concrete to be used unless noted otherwise. Cure slab in accordance with the good building practices.

15/ All HD12 Grade 500 laps shall be 600mm min.

Exterior Footing top steel			500E	Exterior Footing bottom steel		
No. Bars	Dia	(mm2)	Mesh Area/m	No. Bars	Dia	(mm2)
1	16	201	158	2	12	226

Seismic case:

Enter G+0.4Q exterior wall line load:			**5.9**	kN/m
Ext footing self weight				
24 x 0.3 x 0.385			2.77	kN/m
Trib slab load				
G=	24 x 0.085 x 0.6		1.22	kN/m
0.4Q	0.4 x 1.5 x 0.6		0.36	kN/m
Total UDL (w1) =			**10.26**	kN/m
Load on tip (p1) =			**5.94**	kN
2m cantilever (exterior footing)				
M* = w x 2m^2/2 + P1 x 2m			**32.39**	kNm
V* = w*(2-0.335) + P1			**23.01**	kN
Top steel area = tops steel + 0.6m x mesh			295.89	mm2
f'c =	**25** Mpa	a =	**23.21**	mm
		ϕM=	**40.67**	kNm > 32.39 OK
Shear capacity				
Acv = 300 x 335 - 50x100 part brick rebate			95500	mm2
vc			0.46	Mpa
		ϕV=	**32.61**	kN > 23.01 OK
				> 22.20 OK

4m span (exterior footing)	**Hogging**	**Sagging**
	w x 4^2/8	wx 4^/13
M*	**20.51** kNm	12.62 kNm
	0.625wl-w*0.335	
V*	**22.20** kN	

Bottom steel area			226.22	mm2
f'c =	**25** Mpa	a =	**17.74**	mm
		ϕM=	**31.36**	kNm > 12.62 OK
Shear capacity (sagging)				
Acv = 300 x 335 - 100x100 brick rebate			90500	mm2
vc			0.47	Mpa
		ϕV=	**32.24**	kN

Interior ribs

Interior slab self weight

Topping = 24 x 0.085 x 1.2m	2.448	kN/m
Rib = 24 x 0.3 x 0.1	0.72	kN/m
Q = 0.4 x 1.5 kPa x 1.2	0.72	kN/m
Cross rib = 24 x 0.3 x 0.1 x 1.1/2m	0.396	kN/m
Total UDL on rib (w2) =	4.284	kN/m

2m Cantilever edge rib

Load on tip (p2)	10.41	kN
M* on rib = w2 x 1.7^2/2 + P2 x 1.9m	25.96	kNm
V* on rib = w2*(1.7-0.335)+P2	16.25	kN

Moment capacity of rib

Top steel = area of mesh x 1.2 width		189.6	mm2	
	a =	44.61	mm	
	ϕM=	**26.00**	kNm	> 25.96 OK

Shear capacity of rib

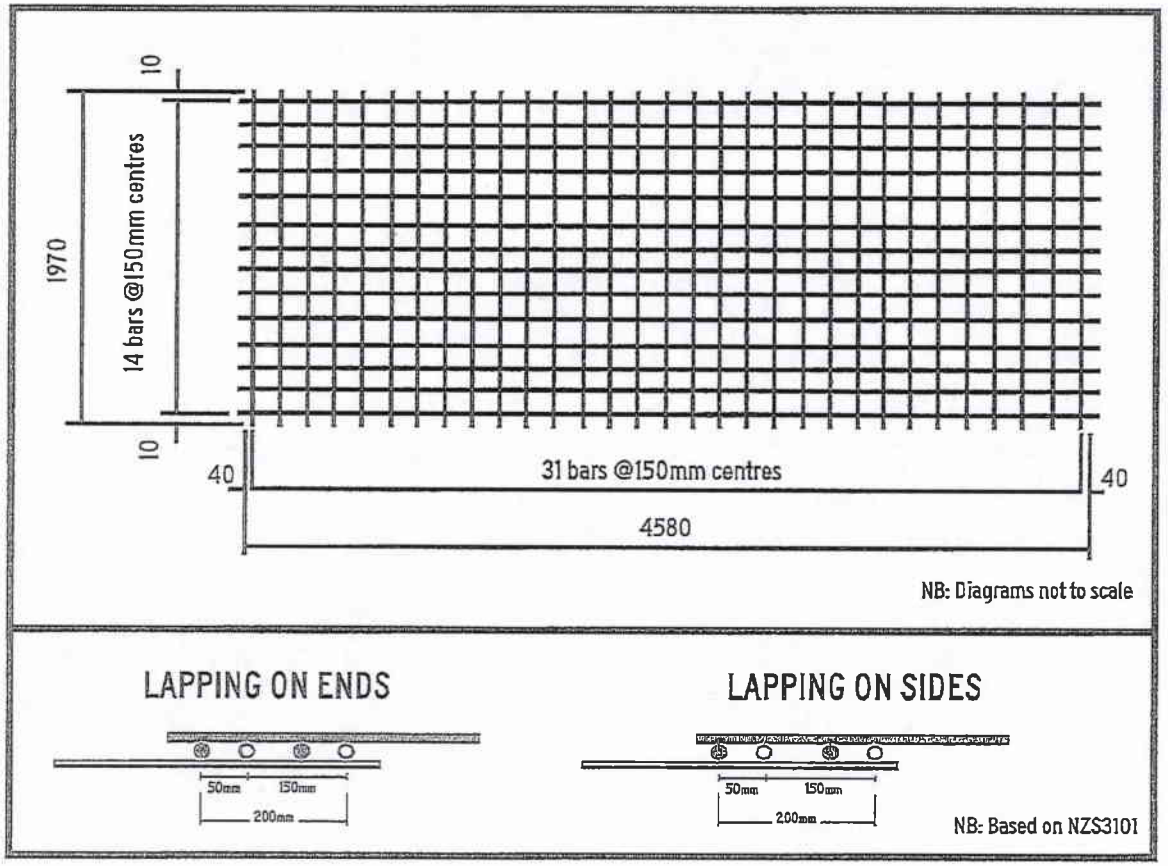
Rely on 85 slab only

Acv = 1200 x 50		60000	mm2	
vb =		0.53	Mpa	
ka =		0.99		
	ϕVc =	**23.93**	kN	> 16.25 OK

SUMMARY:

G+0.4 Q LINE LOAD		**5.9**	kN/m	
300 pod , 85 topping, f'c =		**25**	Mpa	
Mesh area/m		**158**	mm2/m	Grade 500E
Top perimeter bars	**1**	**16**	**(As =)**	201 mm2, 500 E
Bottom per bars	**2**	**12**	**(As=)**	226 mm2, 500 E

MESH SPECIFICATIONS



Each batch of product is independently tested for compliance with AS4671:2001 by an independent, third party engineering consultancy Holmes Solutions (www.holmessolutions.com)

Each sheet of EuroSteel SE615 500 Xtra-Ductile mesh has a Pink identification tag attached which details the Euro Corporation product code and the unique batch number relevant to the sheet

This tag should be left on the sheet when it is placed in position to allow easy identification at any time prior to covering with concrete

Batch test certificates are available from Euro Corporation if required

Xtra-Ductile -500E

Specify and use with confidence.

Stock Code: SE 615-500STD

Product Description: SE 615-500 XTRA-DUCTILE MESH (4.58M X 1.97M)

Yeild Stress: ≥500 MPA

Uniform Elongation: ≥10%

Weight per SQM: 2.490 kg/m²

Nett Cover: 7.525m²

	LONG WIRE	CROSS WIRE
WIRE DIA (mm)	R5.5	R5.5
CENTRES (mm)	150	150
LENGTH (mm)	4580	1970
NO. OF WIRES	14	31
O/HANG (mm)	40	10
GROSS WEIGHT PER SHEET	23.38 kg	
WIRE kg/M	0.187	0.187
WEIGHT (Kg)	11.97	11.40
CROSS SECTION	158.31 mm²/m	
GROSS SHEET AREA	9.02 m²	
CUBIC PER SHEET	0.1 m³	
NO. OF SHEETS PER PACK	25	
PACK WEIGHT	584.41 kg	
PACK CUBIC	2.48 m³	

EUROSTEEL
WE'RE RAISING THE BAR

www.eurocorp.co.nz

SEPT 2011

ISSUED CONSENT BC131056

BC131056

Fletcher Reinforcing
Structured for strength

SUPER DUCTILE 500E™ R500SE51.5

SUPER DUCTILE 500E™ R500SE51.5 Seismic Grade Reinforcing Mesh

MESH SPECIFICATION

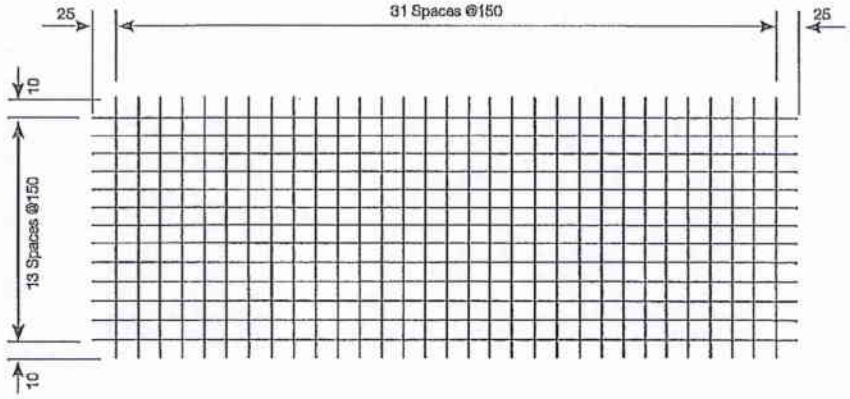
Date: October 2011

Product Description: 4.7m x 1.97m x - 150 x 150 Grid: R5.5 Line Wire, R5.5 Cross Wire

	Wire Dia.(mm)		Spacing (mm)	Length (mm)	No. of Wires	Overhangs (mm)		mm²/m	Wire kg/m	Weight (kg)
Longitudinal Wire	5.5	R	150	4700	14	25	25	158.4	0.1865	12.27
Cross Wire	5.5	R	150	1970	32	10	10	158.4	0.1865	11.76

GROSS SHEET WEIGHT (Kg)	24.03
WEIGHT PER SQM (Kg/m²):	2.487

MESH SKETCH (not to scale)

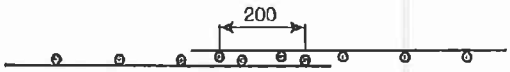


GROSS SHEET AREA (m²):	9.259
NETT COVER (m²):	7.787
Ratio STACK & TURNED (Y / N):	Y
No. OF SHEETS / BUNDLE:	25
ESTIMATED CUBIC (m³):	1.3240
BUNDLE WEIGHT (Tonnes):	0.6007

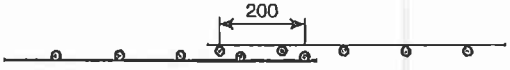
MECHANICAL PROPERTIES

Uniform Elongation%	Yield Strength Min	Yield Strength Max	Tensile Ratio Min	Tensile Ratio Max	Weld Shear Strength
≥10%	500MPa	600Mpa	1.15	1.4	>5.9

LAPPING ON ENDS



LAPPING ON SIDES



SUPER DUCTILE 500E™ Product testing by SGS NZ Ltd for Grade 500E compliance as per AS/NZS 4671:2001. All SuperDuctile 500E product is individually tagged with distinctive gold lettering. The tag contains the product code and the unique batch number relevant to the sheet. It is important that this tag is kept in position to allow easy identification until covered with concrete. *All measurements/weights approximate

Fletcher Reinforcing
Structured for strength

Auckland P: (09) 270 4247
E: auckland.quotes@freo.co.nz

Hamilton P: (07) 843 0890
E: hamilton.quotes@freo.co.nz

Tauranga P: (07) 542 9400
E: tauranga.quotes@freo.co.nz

Palmerston North P: (06) 359 1776
E: palmerstonnorth.quotes@freo.co.nz

Wellington P: (04) 570 8480
E: wellington.quotes@freo.co.nz

Nelson P: (03) 544 0751
E: nelson.quotes@freo.co.nz

Christchurch P: (03) 377 1160
E: christchurch.quotes@freo.co.nz

Dunedin P: (03) 479 2730
E: dunedin.quotes@freo.co.nz

Invercargill P: (03) 214 9090
E: invercargill.quotes@freo.co.nz

www.fletcherreinforcing.co.nz

A member of the Fletcher Building Group of companies

ISSUED CONSENT BC131056

9 External walls

GENERAL

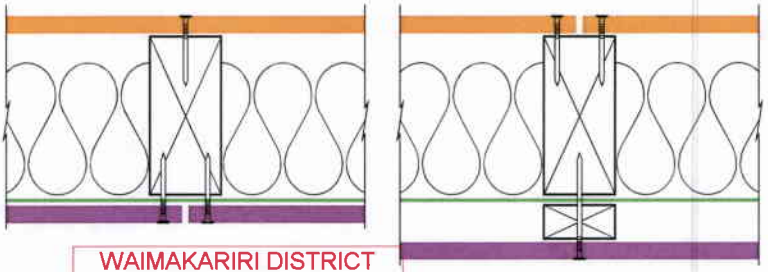
The external walls are required to be fire rated depending upon the situation when the wall is close to a boundary or a neighbouring property in order to comply with NZBC clause C3. The walls included in this section are load bearing walls as per NZS 3604. Special attention must be paid to junctions and penetrations in external walls. The external claddings may be required to be fixed over a cavity for certain designs and the cavity must not open into the roof space or sub floor space.

The systems presented in the following sections are primarily based on the correct selection of materials.

When using Scyon Linea Weatherboards in a fire rated situation the weatherboard must always be face fixed.

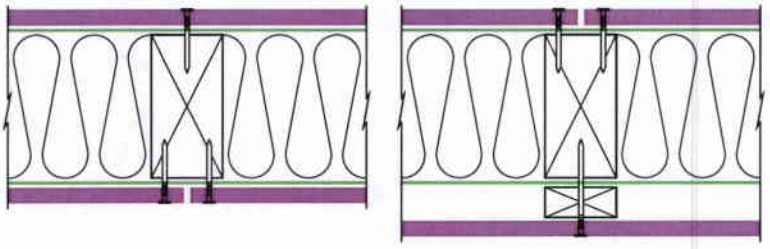
All dimensions shown in tables are in millimetres.

EXTERNAL 30 MINUTE TWO WAY FIRE RATED AND ACOUSTIC SYSTEMS

FRR 30/30/30	JHETGJ30		
• 6mm or thicker cladding one side Refer to product technical specification for information regarding fixing. • Fire retardant building underlay • 10mm GIB Fyreline® one side fixed to GBTL 30 • R2.2, Fibreglass Insulation • Timber framing as per section 6.3			
OPTIONS			
Stud depth (mm)	90		
James Hardie cladding thickness (mm)	6	7.5	9
STC / R_w	41/40	41/41	42/41
R Value	1.91+		

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004 clause 49 and the Building Regulations 1992, Clause A5
131056 2/07/2013 Keegan

NOTE: 13mm GIB plasterboard can also be used in lieu of 10mm GIB Fyreline. Fix as per GBTL 30b

FRR 30/30/30	JHETJJ30		
• 6mm or thicker cladding both sides or James Hardie cladding one side and 6mm or thicker James Hardie lining on other side Refer to product technical specification for information regarding fixing. • Fire retardant building underlay • James Hardie Mineral Insulation 90mm • Timber framing as per section 6.3			
OPTIONS			
Stud depth (mm)	90		
James Hardie cladding thickness (mm)	6	7.5	9
6mm Villaboard Lining	39/40	41/42	44/43
9mm Villaboard Lining	43/42	43/42	43/43
R Value	2.04+		
	R_w / STC Rating		

ISSUED CONSENT BC131056

BC131056

113 112 111 110 109

123 122 121 120 119 118 117 124 125 126 127 128 129 130 131 140 141 139 142 138 143 144 137 136 216

664 663 662 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685

4.116 4.148 4.188 4.209 4.222 4.154 4.146 4.308 4.239 4.311 4.342 4.323 4.160 4.233 4.254 4.201 4.250 4.228 4.327 4.258 4.243 4.340 4.152 4.249 4.349 4.193 4.225 4.236 4.103 4.284 4.217 4.235 4.226 4.148 4.132 4.227 4.189 4.201 4.314 4.200 4.192 4.206 4.244 4.313 4.192 4.263 4.188

4.20 4.25 4.30

N W E S

CIVIL SOLUTIONZ NEW ZEALAND

Client:
HEB Construction

Project:
Silverstream

Title:
Stage 2 Sections 662 - 685
Finished Levels

Date: 12 Feb 13	By: W. Newall
Scale at A3: NTS	Checked: --

Drawing No:

Revisions:

A:

B:

ISSUED CONSENT BC131056

Building Consent 131056
Received 2/7/13

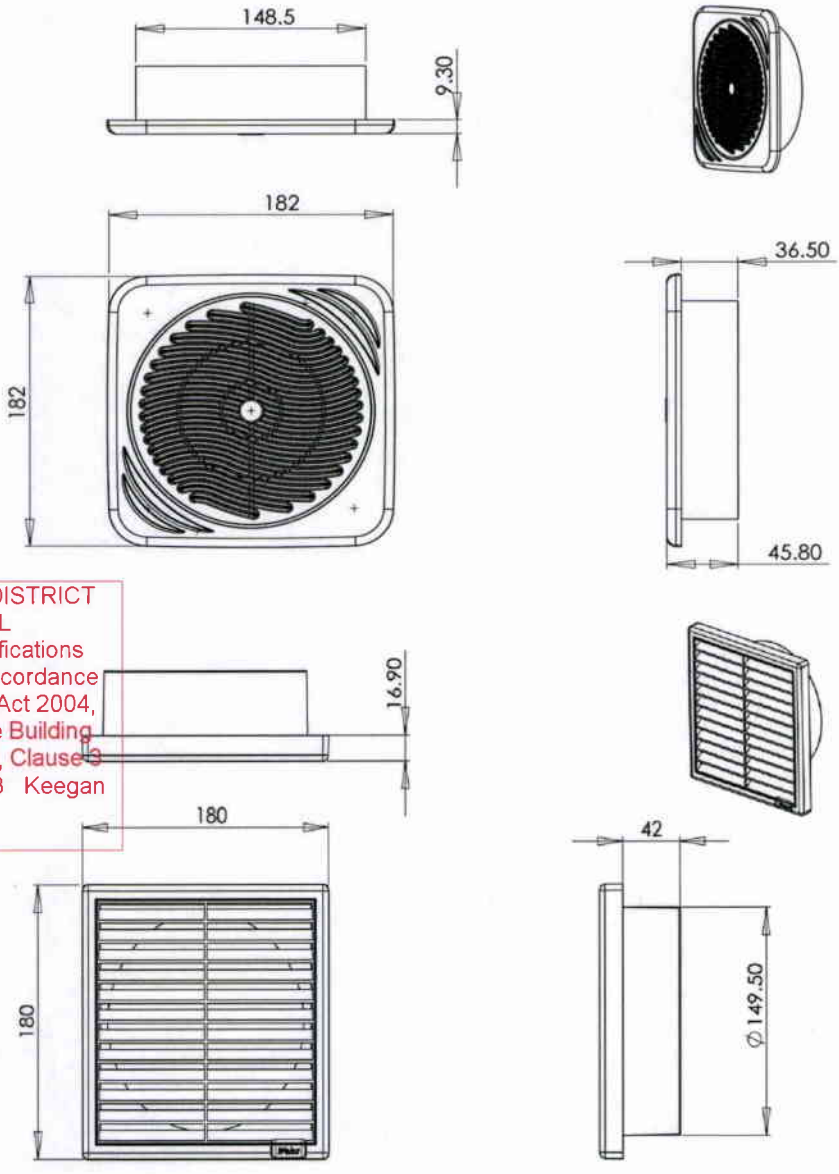
Technical Data Sheet

FV102

ClearFlow Inline

150mm ducting

Dimensions	
Cut-out size for inlet fascia	155mm
Cut out size for outlet vent	155mm



WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

Specifications

Weight	2kg
Colour of front fascia	White
Housing material	ABS

Approval

AS/NZS 3350.2.80:1998 Amdts 1-3 "Electrical Fan"

Features

- Easy to install
- 3 metres of 150mm ducting supplied
- Unique 'no fuss' all in one unit
- Allows moisture to be removed to the outside of your home
- All parts are included
- 3 year extended warranty

Weiss Ltd reserves the right to change specifications or designs in this specification sheet without notice and without obligation

ISSUED CONSENT BC131056

Building Consent 131056
Received 2/7/13

Technical Data Sheet

Product Use

The FV102 is used for the extraction of mist and steam

Typical applications:

- Bathrooms
- Toilets
- Laundries

Environmental Conditions

Operation	to IEC 721-3-3
Climatic conditions	class 3K5
Temperature	0...+50°C
Humidity	<95% r.h.

Standards

Test standards	AS/NZS 3350.2.80: 1998 Amdts 1-3 "Electrical Fan"
Test Report no	SD3190
EMC Compliance	This is a Level One product with an C frame motor that has a very low risk of causing EMC Interference

General

Free Air Fan Performance	362m³/ hr 100.6L/sec
Installed decibel rating	45DB

Ordering

When ordering please give name and type,

Reference	FV102
Barcode	942000490001-3

Technical Data

Power Supply	230 VAC
Power consumption	max. 0.4 Amps
Supply Line fusing	max. 10A
For solid wires	2 x 1.5mm²
Motor	230-240VAC 50Hz 0.4 Amp
Motor insulation class	B1
Total motor wattage	40 Watts
Motor protection	Thermally protected
Total product wattage	40 watts

Weiss Ltd reserves the right to change specifications or designs in this specification sheet without notice and without obligation

ISSUED CONSENT DOCUMENTS

MiTek New Zealand Limited

Correspondence from : **AUCKLAND**
40 Neales Road, East Tamaki 2013
PO Box 58-014, Botany 2163
Phone: 09 274 7109
Fax: 09 274 7100

CHRISTCHURCH
14 Pilkington Way, Wigram 8042
PO Box 8387, Riccarton 8440
Phone: 03 348 8691
Fax: 03 348 0314

www.miteknz.co.nz

Building Consent Authority
Received 2/7/13

PRODUCER STATEMENT for MiTek 20/20® TRUSS DESIGN - Version 4.6

ISSUED BY: **MiTek New Zealand Limited**

TO: **Spanbild**

IN RESPECT OF: **MiTek® Truss Designs**

This producer statement covers the MiTek 20/20® truss design and the structural performance of the GANG-NAIL® connector plate for the job reference **130237** and may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

The MiTek 20/20® truss design program has been developed by MiTek New Zealand Limited for the design of MiTek® timber roof, 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 Verification 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.

SUPERSEDED

On 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

I believe 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: Friday, 17 May 2013**

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MiTek New Zealand Limited

SUPERSEDED

Client: Finlayson ISSUED CONSENT BC131056 Site: Lot 130 Silverstream

Description: Building Consent No.:

Phone:

Building Consent 131056
Received 2/7/13

MiTek 20/20 Engineering 416.132 MiTek New Zealand Limited Printed: 12:30:57 17 May 2013

MITEK FABRICATOR DESIGN STATEMENT

This statement is issued by MiTek accredited fabricator Spanbild, being licensed to use the MiTek 20/20® software, to the client listed above and may be used by the Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

MiTek 20/20® TRUSS DESIGN DATA

The MiTek 20/20® computer design for this job is based on the following design parameters entered into the program. The Fabricator shall ensure that these job details are current and relevant to the project for the design of the MiTek® trusses.

Job Details

Roof Trusses

Timber Group:	~MSGx45 H1.2	Importance Level :	2	Design Working Life :	50 years
Roof		Pitch:	25.000 deg	Nominal Overhang:	600 mm
Material:	Galv Iron .5mm	**Ceiling**		**Wind**	
Dead Load:	0.210 kPa	Material:	Gib Board 12mm	Area:	High (44.0 m/s)
Restraints:	900 mm centres	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Live Load	Qur = 0.250 kPa	Restraints:	600 mm centres	**Snow**	
	Qc = 1.100 kN	Live Load:	Qc = 1.400 kN	Location:	Christchurch (N4) at 100 m
				Open Ground Load:	0.900 kPa
				Basic Roof Load:	0.441 kPa

The timber for these MiTek® trusses shall be treated to the requirements of NZS 3602:2003 and shall be graded to the requirements of NZS 3603:1993. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in a "closed environment", as defined by NZS3604:2011 Section 4.

MiTek® Truss List

Legend: * = detail only, ? = input only, ~~Txx~~ = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required, WB = windbeam required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
CT01	1	5930	25.000	900	J03D	1	2467	25.000	900	*HB03	1	3982	18.249	900
HJ01	1	3444	18.249	900	J03E	1	2467	25.000	900	*HB04	1	2258	18.249	900
J07A	1	2980	25.000	900	J04	1	1580	25.000	900	*HB05	1	2924	18.249	900
T01	1	8580	25.000	900	J04A	1	1580	25.000	900	*HB06	1	2924	18.249	900
T06	1	8580	25.000	834	J05	1	680	25.000	900	*HJ02	1	6839	18.249	900
TG01	1	8580	25.000	900	J05A	1	680	25.000	900	*R01	1	1515	25.000	900
TG02	1	8580	25.000	900	J06	1	1567	25.000	900	*R01A	1	1515	25.000	900
TR01	1	8580	25.000	900	J07	1	2980	25.000	900	*R02	1	913	25.000	900
TR02	1	8580	25.000	900	J08	1	1078	25.000	900	*R03	4	913	25.000	900
CJ01	1	2282	25.000	900	J09	1	1467	25.000	900	*R03A	1	913	25.000	900
CJ01A	1	2282	25.000	900	J09A	1	1467	25.000	900	*R03B	4	913	25.000	900
CT02	3	5930	25.000	900	J09B	1	1467	25.000	900	*R03C	1	913	25.000	900
J01	1	2702	25.000	900	T02	1	2980	25.000	900	*R03D	1	913	25.000	900
J01A	1	2702	25.000	900	T03	1	2080	25.000	900	*R04	1	913	25.000	900
J01B	1	2702	25.000	900	T04	1	5450	25.000	900	*R04A	1	913	25.000	900
J02	1	1802	25.000	900	T04A	1	5450	25.000	900	*R05	1	1280	25.000	900
J02A	1	1802	25.000	900	T05	3	5555	25.000	900	*R05A	1	1280	25.000	900
J03	1	2467	25.000	900	V01	1	2185	25.000	900	*R06	1	580	25.001	900
J03A	1	2467	25.000	900	V03	1	1410	25.000	900	*R07	1	1180	25.000	900
J03B	1	2467	25.000	900	*HB01	1	4670	18.249	900	*V02	1	542	25.000	900
J03C	1	2467	25.000	900	*HB02	1	4670	18.249	900					

Total quantity : 72

SUPERSEDED

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

SUPERSEDED

The computer design input has been carried out by:

Signed: D.Murphy

Name of Detailer: Dean Murphy

On behalf of: Spanbild

Date: Friday, 17 May 2013

Qualifications and Title: Product Engineer - Timber

GIB EzyBrace® 2011 Software

Demand Calculation Sheet — single storey — V06/11

Job Details

Name	Cameron Finlayson
Street and Number	Silverstream
Lot and DP Number	Lot 130
City/Town/District	Kaiapoi
Designer	RM
Company Name	Versatile Homes & Buildings
Date	15/05/2013

BRANZ Appraised
Appraisal No.294 [2011]

Select Lining Option: 10 or 13 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		heavy	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		25	
Roof height above eaves (m)		2.3	
Building height to apex (m)		4.9	
Ground to lower floor level (m)		0.2	
Stud Height (m)		2.4	
Building Length (m)		17.2	
Building Width (m)		9.8	
Building Plan Area (m2)		132	

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

Building Location

Wind Zone	***High***	**Earthquake Zone**	**Soil Type**
Select by Building Consent Authority Map		2	D&E (deep to very soft)
or Preference	High	**Annual exceedance probability**	
Wind Region	Preference selected	1/500 (NZS3604:2011 default)	
Lee Zone	Preference selected		
Ground Roughness	Preference selected		
Site Exposure	Preference selected		
Topographic Class	Preference selected		

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	514
across	slab	867

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single
slab		834

ISSUED CONSENT BC131056

Cameron Finlayson RM

GIB EzyBrace® 2011 Software

SINGLE OR UPPER STOREY WALLS ALONG

V06/11

Lines		Bracing Elements							
1	2	3	4	5	6	7	8	9	10
Line Total Check	Line Label	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	Bracing Units Achieved	
								W	E
604	A	1	0.8		2.4	EP1	Ply	100	104
		2	0.6		2.4	GS1-N	GIB®	34	35
		3	0.9		2.4	EP1	Ply	113	117
		4	5.8		2.4	GS1-N	GIB®	400	348
384	B	1	4.4		2.4	GS1-N	GIB®	304	264
		2	2		2.4	GS1-N	GIB®	138	120
200	C	1	0.9		2.4	GS1-N	GIB®	57	53
		2	0.6		2.4	EP1	Ply	75	78
		3	0.5		2.4	BLP-H	GIB®	68	68
488	D	1	0.6		2.4	EP1	Ply	75	78
		2	1.1		2.4	EP1	Ply	138	143
		3	1.1		2.4	EP1	Ply	138	143
		4	1.1		2.4	EP1	Ply	138	143

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

						Wind	Earthq.
Totals Achieved	W	346%	EQ	203%		1776	1695
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						514	834

ISSUED CONSENT BC131056

Cameron Finlayson RM

GIB EzyBrace® 2011 Software

SINGLE OR UPPER STOREY WALLS ACROSS

V06/11

Lines		Bracing Elements							
1	2	3	4	5	6	7	8	9	10
Line Total Check	Line Label	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	Bracing Units Achieved	
								W	E
251	M	1	0.6		2.4	EP1	Ply	75	78
		2	0.5		2.4	GS1-N	GIB®	28	29
		3	0.8		2.4	GS1-N	GIB®	49	47
		4	0.8		2.4	EP1	Ply	100	104
118	N	1	1.4		2.4	GS1-N	GIB®	97	84
		2	0.5		2.4	GS2-N	GIB®	39	34
254	O	1	3.1		2.4	GS1-N	GIB®	214	186
		2	0.5		2.4	BLP-H	GIB®	68	68
381	P	1	3.1		2.4	GS1-N	GIB®	214	186
		2	0.7		2.4	EP1	Ply	88	91
		3	0.8		2.4	EP1	Ply	100	104
150	Q	1	0.6		2.4	EP1	Ply	75	78
		2	1.2		2.4	GS1-N	GIB®	83	72
402	R	1	0.9		2.4	EP1	Ply	113	117
		2	2.8		2.4	GS1-N	GIB®	193	168
		3	0.9		2.4	EP1	Ply	113	117

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

					Wind	Earthq.
Totals Achieved	W	190%	EQ	188%	1647	1564
Concrete Slab					*OK*	*OK*
Totals Required (from Demand)					867	834

GIB EzyBrace® Systems

GIB EzyBrace® System Specification – GS1-N

JUNE 2011

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; AS1 Clause 3 Timber (NZS 3604:2011)
- NZBC B2 - Durability AS1 Clause 3.2 Timber (NZS 3602)

Framing dimensions and height as determined by NZS 3604 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 3.15 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 for external 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 SUBSTITUTION

For permitted GIB® Plasterboard substitutions refer to Page 21 in GIB Ezybrace® Systems 2011.

FASTENING THE LINING

Fasteners

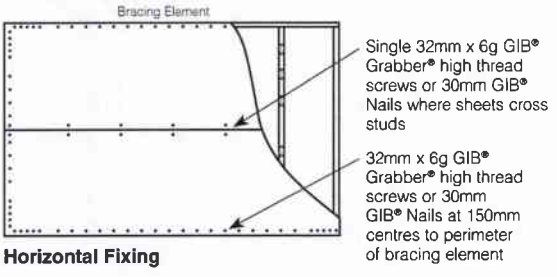
32mm x 6g GIB® Grabber® high thread screws; or
30mm GIB® Nails.

Fastener centres

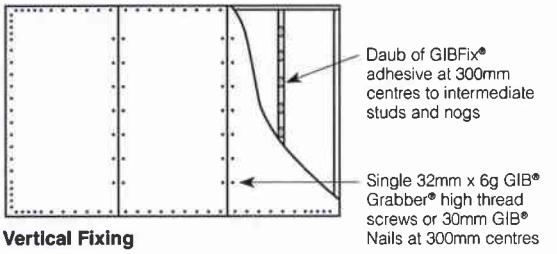
50,100,150, 225, 300mm from each corner and 150mm thereafter around the perimeter of the bracing element.
For vertically fixed sheets place fasteners at 300mm centres to intermediate sheet joints.
For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud.
Use daubs of GIB Fix® adhesive at 300mm 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

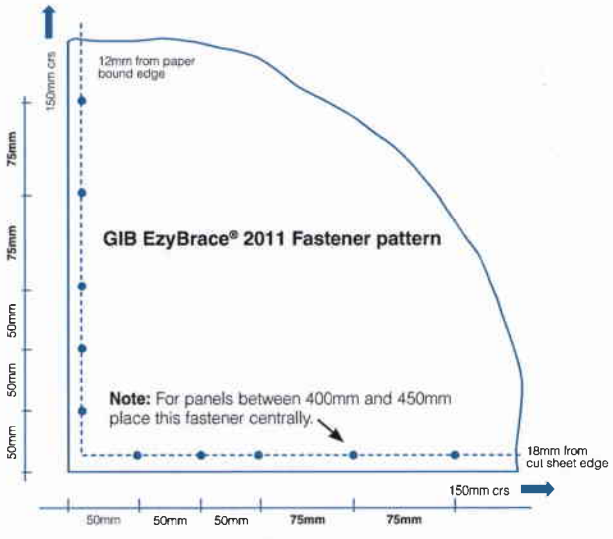
All fastener heads stopped and all sheet joints paper tape reinforced and stopped in accordance with the GIB® Site Guide.



Horizontal Fixing



Vertical Fixing



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 2011 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2011).

BRANZ Appraised
Appraisal No.294 [2011]

GIB EzyBrace® Systems

GIB EzyBrace® System Specification – GS2-N

JUNE 2011

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; AS1 Clause 3 Timber (NZS 3604:2011)
- NZBC B2 - Durability AS1 Clause 3.2 Timber (NZS 3602)

Framing dimensions and height as determined by NZS 3604 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 3.15 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

One layer 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 SUBSTITUTION

For permitted GIB® Plasterboard substitutions refer to Page 21 in GIB® Ezybrace Systems 2011.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® high thread screws; or

30mm GIB® Nails.

Fastener centres

50,100,150, 225, 300mm from each corner and 150mm thereafter around the perimeter of the bracing element.

For vertically fixed sheets place fasteners at 300mm centres to intermediate sheet joints.

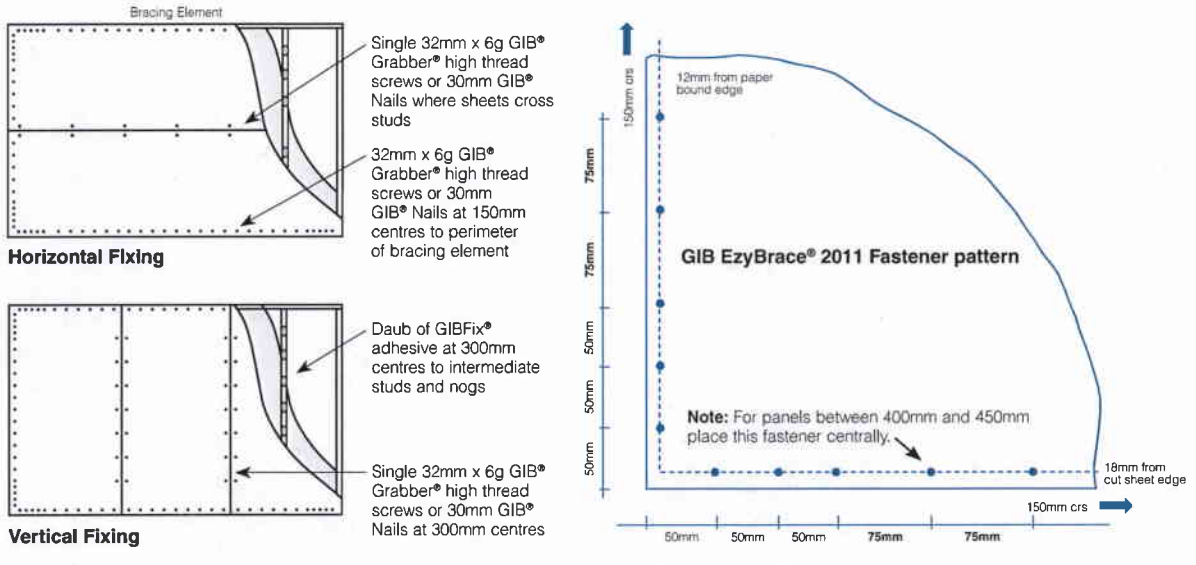
For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud.

Use daubs of GIB Fix® adhesive at 300mm 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

All fastener heads stopped and all sheet joints paper 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 2011 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2011).

BRANZ Appraised
Appraisal No.294 [2011]

GIB EzyBrace® Systems

GIB EzyBrace® System Specification – BLP-H

JUNE 2011

Specification Code	Minimum Length (m)	Lining requirement	Other requirements
BLP-H	0.4	10mm or 13mm GIB Braceline® to one side of the frame plus minimum 7mm Ecoply to the other side	Hold downs

WALL FRAMING

Wall framing to comply with;

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

Framing dimensions and height as determined by NZS 3604 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 2011 or GIB® Site Guide.
Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or
Three power driven 90 x 3.15 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 2011 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.

WALL LINING

One layer 10mm or 13mm GIB Braceline® to one side of the wall plus minimum 7mm Ecoply construction plywood manufactured to AS/NZS 2269:2004 to the other side. Plasterboard sheets can be fixed vertically or horizontally. Plywood is to be fixed vertically with edges supported. Sheet joints shall be touch fitted. Use full length sheets where possible.

PERMITTED SUBSTITUTION

For permitted GIB® Plasterboard substitutions refer to Page 21 in GIB Ezybrace® Systems 2011.

FASTENING THE LINING

Fasteners

GIB Braceline® side

32mm x 6g GIB® Grabber® high thread screws.
(GIB Braceline® Nails may be used with 10mm GIB Braceline® only)

Plywood

50 x 2.8mm Galv or Stainless steel FH nails.

Fastener centres

GIB® Plasterboard side

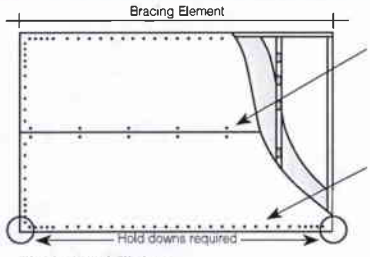
50,100,150, 225, 300mm from each corner and then 150mm thereafter around the perimeter of the bracing element.
For vertically fixed sheets place fasteners at 300mm centres to the intermediate sheet joints.
For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud.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

Plywood side

150mm centres to the perimeter of each sheet. GIB® corner fastener pattern does not apply to the plywood side. 300mm centres to intermediate studs.

JOINTING

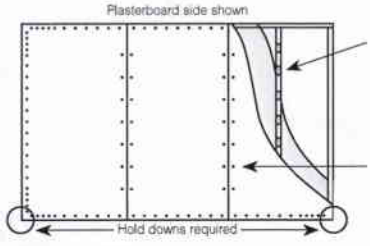
All fastener heads stopped and all sheet joints paper tape reinforced and stopped in accordance with the GIB® Site Guide.



Horizontal Fixing

Single 32mm x 6g GIB® Grabber® high thread screws or 35mm GIB® Braceline® Nails where sheets cross studs

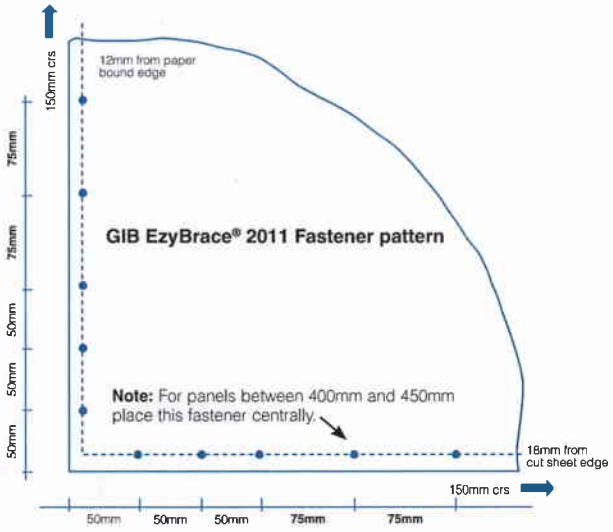
32mm x 6g GIB® Grabber® high thread screws *(GIB® Braceline Nails may be used for 10mm GIB® Braceline ONLY)*



Vertical Fixing

Daub of GIBFix® adhesive at 300mm centres to intermediate studs and nogs

Single 32mm x 6g GIB® Grabber® high thread screws or 35mm GIB® Braceline® Nails at 300mm centres



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 2011 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2011).

BRANZ Appraised
Appraisal No.294 [2011]

Ecoply® Bracing Specification – EP1

June 2012

Single sided structural plywood brace

Specification No.	Minimum Wall Length	Lining Requirements	BUs/m Wind	BUs/m Earthquake
EP1	0.6 m	7mm Ecoply®, or Ecoply Barrier one side	125	130

Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS3604:2011)
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS3602)

Framing dimensions and height are as determined by the NZS3604:2011 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber, such as Laserframe®, is recommended.

Bottom Plate Fixing

Use GIB Handibrac® hold-down connections at each end of the bracing element. Refer to installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604:2011.

Lining

One layer 7mm Ecoply structural plywood fixed directly to framing or over cavity battens. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

Fastening the Ecoply

Fasteners

Fasten with 50 x 2.8 mm galvanised or stainless steel flat head nails. Place fasteners no less than 7 mm from sheet edges.

Fasteners for H3.2 CCA treated Ecoply

Where fasteners are in contact with CCA treated timber or plywood, fasteners shall be a minimum of hot dip galvanised

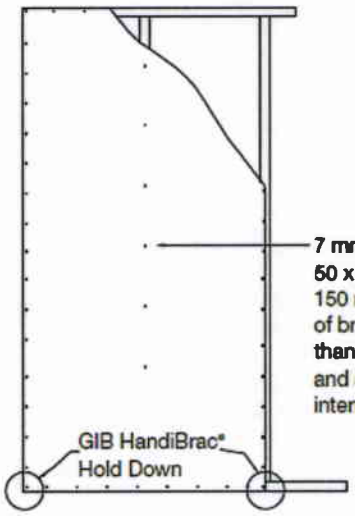
In certain circumstances stainless steel fasteners may be required. Refer to section 4 of NZS 3604:2011 for these circumstances.

Refer to Table 8 in the Ecoply Specification and Installation Guide for further fastener selection advice.

Stainless steel fasteners must be annular grooved

Fastening Centres

Fasteners are placed at 150 mm centres around the perimeter of each sheet and 300 mm centres to intermediate studs.



ECOPLY BRACING SPECIFICATION: EP1

Ecoply® Bracing Systems are designed to meet the requirements of the NZBC and have been tested and analysed using the P21 method referenced in NZS3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply and Laserframe SG8 timber framing manufactured by Carter Holt Harvey Limited trading as Carter Holt Harvey Woodproducts New Zealand, and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

0800 746 399
www.chhwoodproducts.co.nz

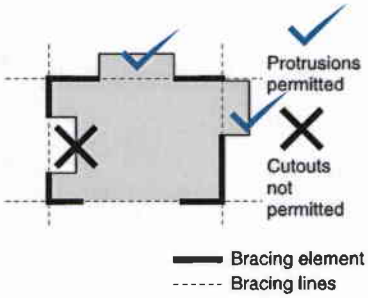
ecoply

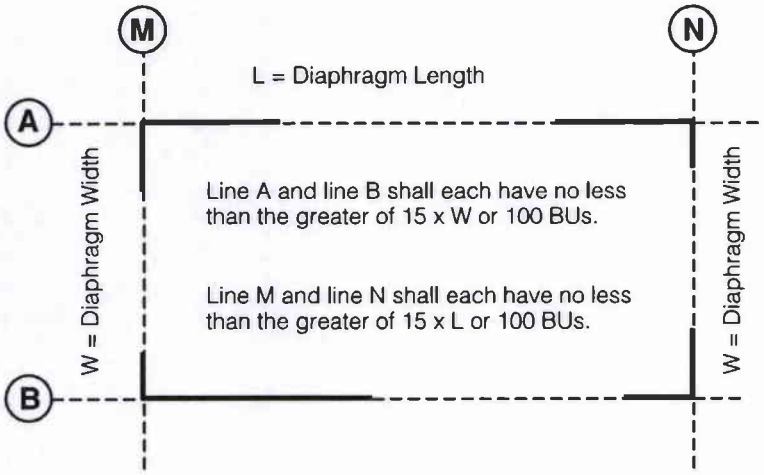
GIB EzyBrace® Systems

Ceiling Diaphragms

JUNE 2011

GIB® Ceiling Diaphragms are stiff and strong horizontal bracing elements which effectively transfer loads to bracing walls. They themselves do not have a bracing unit rating but are used when bracing lines exceed 6m separation. The basic shape of a ceiling diaphragm is square or rectangular. Protrusions are permitted but cut-outs are not. The length of a ceiling diaphragm shall not exceed twice its width. Dimensions are measured between supporting bracing lines. Supporting bracing lines shall have a bracing capacity no less than the greater of 100 bracing units or 15 bracing units per metre of diaphragm dimension, measured at right angles to the line being considered, as illustrated.





Limitations for GIB® plasterboard ceiling diaphragms

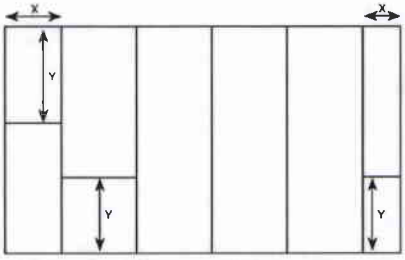
GIB® plasterboard ceiling diaphragms may be constructed as follows:

- For diaphragms not steeper than 15° and not exceeding 7.5m in length, any GIB® plasterboard may be used provided perimeter fixing is at 150mm centres
- For diaphragms not steeper than 45° and not exceeding 7.5m in length and for diaphragms not steeper than 25° and not exceeding 12m in length, any GIB® plasterboard may be used provided perimeter fixing is at 100mm centres

Otherwise construction is in accordance with the general fixing requirements for GIB® ceiling diaphragms outlined below.

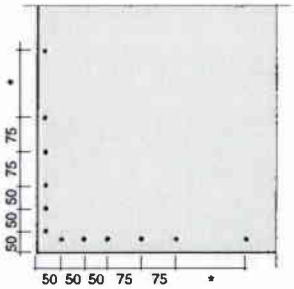
General Fixing Requirements for GIB® Ceiling Diaphragms

- Linings shall be installed over the entire area of the diaphragm.
- Fastening shall be no less than 12mm from sheet edges and not less than 18mm from sheet end.
- Sheets shall be supported by framing members (e.g., ceiling battens) spaced at no more than 500mm centres for 10mm GIB® Plasterboard and at no more than 600mm centres for 13mm GIB® Plasterboard.
- Sheets within the diaphragm area may be fastened and finished conventionally in accordance with the publication entitled, "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").
- Use full width sheets where possible. At least 900mm wide sheets with a length not less than 1800mm shall be used. Sheets less than 900mm wide but no less than 600mm may be used provided all joints with adjacent sheets are back-blocked (see "GIB® Site Guide").
- Openings are allowed within the middle third of the diaphragm's length and width. Fixing of sheet material to opening trimmers shall be at 150mm centres. Neither opening dimension shall exceed a third of the diaphragm width. Larger openings, or openings in other locations, require specific engineering design. Refer "Openings in Bracing Elements" page 17.
- Fasteners are placed at 150mm or 100mm centres around the ceiling diaphragm with the corners fastened using the GIB EzyBrace® 2011 fastener pattern.



X = 900mm min or 600-900mm min provided all adjacent joints are back-blocked.
Y = 1800mm min sheet lengths at ends of ceiling diaphragms

Sheet Widths and Lengths in Ceiling Diaphragms



Fastening pattern for ceiling diaphragms

*** Perimeter centres at 150mm or 100mm depending on diaphragm limitations above**

Ceiling Diaphragms

JUNE 2011

Battens

Ceiling diaphragms may be constructed using steel or timber ceiling battens.

Battens shall be spaced at a maximum of:
- 500mm for 10mm GIB® Plasterboard
- 600mm for 13mm GIB® Plasterboard

Timber battens shall be fixed in accordance with the requirements of NZS 3604:2011.

Steel battens shall be GIB® Rondo® battens or similar with a minimum base metal thickness (BMT) of 0.55mm with two external flanges of 8mm to allow direct screw fixing to roof framing.

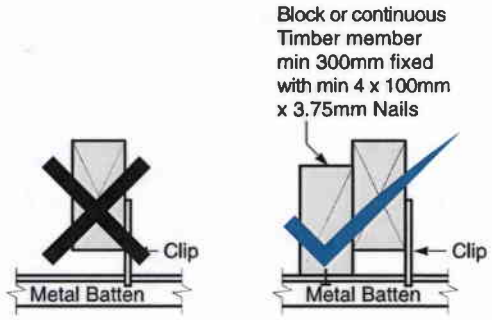
Steel battens shall be fixed with 2/32mm x 8g GIB® Grabber® wafer head self tapping screws to supporting framing.

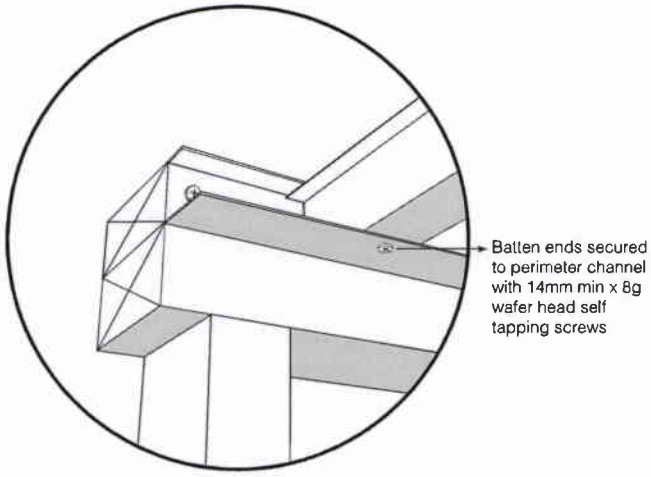
Steel battens must be fixed directly to the roof framing. If a clip system has been used, a timber block (min 300mm) or a continuous timber member can be fixed alongside the bottom chord to permit a direct connection to the batten.

For steel battens a steel channel or metal angle is required at the perimeter of the diaphragm. The perimeter channel shall be fastened to the top plate with 32mm x 8g GIB® Grabber® wafer head self tapping screws at 300mm centres maximum.

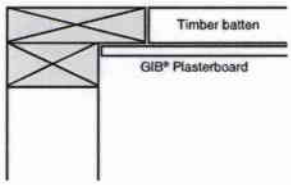
The linings are fastened to the perimeter channel in case (a) with 25mm x 6g self tapping screws at 150mm centres and in case (b) to the 140mm x 35mm top plate with 32mm x 6g GIB® Grabber® high thread screws at 150mm centres. Within the diaphragm area sheets may be fastened as described in 'General Fixing Requirements for GIB® Ceiling Diaphragms'.

Perimeter fastenings shall be spaced at:
- 150mm for ceiling diaphragms up to 7.5m and not steeper than 15 degrees
- 100mm for ceiling diaphragms 7.5m–12m or steeper than 15 degrees

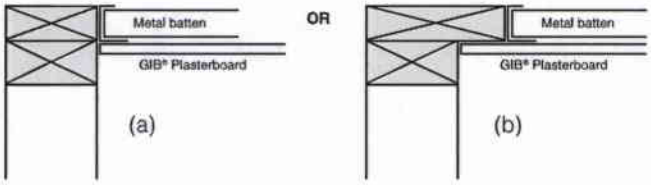




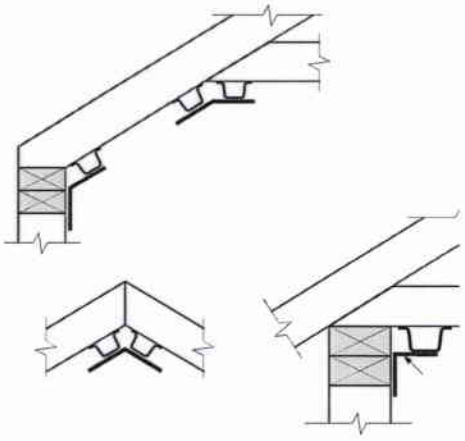
Timber battens example



Steel battens with perimeter channel example



Coved ceiling diaphragms can be achieved by attaching a folded metal angle to the junction. The metal angle shall be;
- min 0.55mm BMT
- fastened at 300mm centres on each edge using 30mm GIB® Nails or 32mm x 8g GIB® Grabber® wafer head self tapping screws or similar to the roof framing.
- linings are fastened to the folded angle as specified for the perimeter at 150mm centres with 25mm x 6g self tapping screws.



ISSUED CONSENT BC131056

Producer Statement PS1- Design

ISSUED BY: MiTek New Zealand Ltd

TO BE SUPPLIED TO: Building Consent Authorities in New Zealand

IN RESPECT OF: GANGLAM Design Manual, 04/2008

AT: Various Locations in New Zealand

MiTek New Zealand Ltd has provided engineering design services in respect of the requirements of Clause B1 of the NZ Building Code for

☐ All ☒ Part only as specified – GANGLAM Members

of the proposed building work.

The selection charts within this design manual have been prepared in accordance with **Compliance Documents and Verification Method B1/VM1** of the NZ Building Code and in accordance with sound and widely accepted engineering principles.

On behalf of MiTek New Zealand Ltd, and subject to:

1. The verification of the design assumptions within this manual
2. All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that the use of GANGLAM Members in the proposed building, if constructed in accordance with the drawings, specifications and other documents provided, will comply with the relevant provisions of the Building Code.

MiTek New Zealand Ltd holds a current policy of Professional Indemnity Insurance of not less than $500,000.

On behalf of MiTek New Zealand Ltd Date: December 2008

.....
In Ling Ng
Technical Services Manager
BE (Hons), CPEng, IntPE
MIPENZ (ID: 146585)

MiTek New Zealand Ltd.
AUCKLAND: 40 Neales Road, East Tamaki 2013 PO Box 58-014, Greenmount 2141 Ph: 09-274 7109 Fax: 09-274 7100
CHRISTCHURCH: 14 Pilkington Way, Wigram 8042 PO Box 8387, Riccarton 8440 Ph: 03-348 8691 Fax: 03-348 0314

© Copyright 2008 MiTek Holdings, Inc.
All rights reserved.

ISSUED CONSENT BC131056

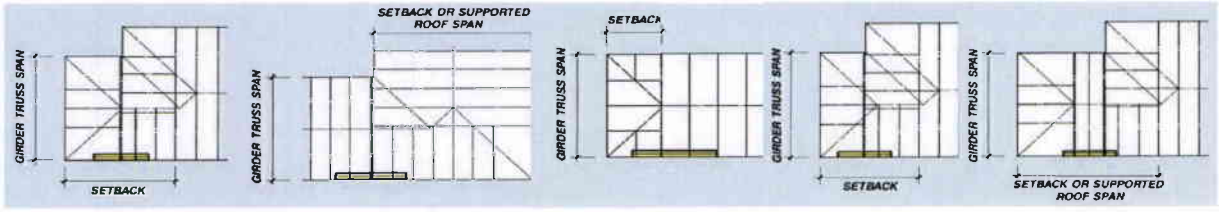


TABLE 7A:

LINTEL SUPPORTING GIRDER / SETBACK TRUSSES WITH LIGHT ROOF

	LINTEL SIZE	SETBACK (m)	MAXIMUM LINTEL SPAN (m) GIRDER TRUSS SPAN (m) 5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0
SOLID TIMBER	2/140 x 45	1.2	2.14	2.03	1.95	1.81	1.70	1.60	1.51	1.43	1.36	1.30	1.24
		2.4	1.83	1.64	1.49	1.36	1.25	1.15	1.07	1.00	0.94	0.89	0.84
		3.6	1.50	1.32	1.17	1.05	0.96	0.88	0.81	0.75	0.70	0.66	0.62
		4.8	1.25	1.08	0.95	0.85	0.77	0.70	0.64	0.59	0.55	0.51	0.48
	2/190 x 45	1.2	2.83	2.73	2.65	2.58	2.51	2.38	2.26	2.16	2.06	1.98	1.90
		2.4	2.64	2.53	2.31	2.13	1.98	1.85	1.73	1.63	1.54	1.46	1.39
		3.6	2.38	2.12	1.91	1.74	1.60	1.47	1.37	1.28	1.20	1.13	1.06
		4.8	2.05	1.80	1.61	1.45	1.32	1.21	1.11	1.03	0.97	0.90	0.85
	2/240 x 45	1.2	3.41	3.30	3.20	3.12	3.04	2.97	2.91	2.85	2.78	2.67	2.57
		2.4	3.21	3.09	2.99	2.90	2.76	2.59	2.44	2.31	2.19	2.08	1.98
		3.6	3.05	2.92	2.72	2.49	2.30	2.14	1.99	1.87	1.76	1.66	1.58
		4.8	2.91	2.61	2.34	2.13	1.95	1.80	1.67	1.55	1.45	1.37	1.29
	2/290 x 45	1.2	3.97	3.84	3.73	3.63	3.54	3.46	3.39	3.33	3.27	3.21	3.16
		2.4	3.76	3.62	3.50	3.40	3.31	3.23	3.15	3.01	2.86	2.73	2.61
		3.6	3.59	3.44	3.32	3.21	3.05	2.84	2.67	2.51	2.37	2.25	2.14
		4.8	3.44	3.29	3.13	2.86	2.64	2.44	2.27	2.13	2.00	1.89	1.79
		6.0	3.31	3.09	2.78	2.52	2.30	2.12	1.97	1.83	1.72	1.61	1.52
		7.5	3.09	2.71	2.42	2.17	1.98	1.81	1.67	1.55	1.45	1.35	1.27
		10.0	2.58	2.23	1.97	1.75	1.58	1.44	1.32	1.22	1.14	1.06	1.00
GANGLAM	2/330 x 45	1.2	4.70	4.56	4.43	4.31	4.21	4.12	4.04	3.96	3.89	3.83	3.77
		2.4	4.49	4.33	4.19	4.07	3.97	3.87	3.79	3.71	3.64	3.57	3.43
		3.6	4.30	4.14	4.00	3.87	3.76	3.67	3.55	3.35	3.18	3.02	2.88
		4.8	4.14	3.97	3.83	3.70	3.54	3.30	3.09	2.90	2.74	2.59	2.46
		6.0	4.00	3.83	3.68	3.42	3.15	2.92	2.72	2.54	2.39	2.25	2.13
		7.5	3.84	3.67	3.32	3.01	2.75	2.53	2.34	2.18	2.04	1.92	1.81
		10.0	3.56	3.11	2.75	2.47	2.24	2.05	1.89	1.75	1.63	1.52	1.43
	2/380 x 45	1.2	5.26	5.09	4.95	4.83	4.71	4.61	4.52	4.44	4.36	4.29	4.22
		2.4	5.04	4.86	4.71	4.58	4.46	4.36	4.26	4.17	4.09	4.02	3.95
		3.6	4.84	4.66	4.50	4.37	4.25	4.14	4.04	3.96	3.88	3.71	3.55
		4.8	4.67	4.49	4.33	4.19	4.07	3.96	3.82	3.60	3.41	3.23	3.07
		6.0	4.52	4.33	4.17	4.03	3.91	3.64	3.40	3.19	3.00	2.84	2.69
		7.5	4.36	4.16	4.00	3.77	3.46	3.19	2.97	2.77	2.60	2.45	2.31
		10.0	4.12	3.91	3.49	3.15	2.86	2.63	2.42	2.25	2.10	1.97	1.85
	2/430 x 45	1.2	5.79	5.61	5.46	5.32	5.20	5.09	4.99	4.90	4.81	4.74	4.66
		2.4	5.57	5.38	5.21	5.07	4.94	4.83	4.72	4.63	4.54	4.46	4.39
		3.6	5.37	5.17	5.00	4.85	4.72	4.60	4.50	4.40	4.31	4.23	4.16
		4.8	5.19	4.99	4.81	4.66	4.53	4.41	4.30	4.21	4.10	3.90	3.71
		6.0	5.03	4.83	4.65	4.50	4.36	4.24	4.11	3.87	3.65	3.46	3.28
		7.5	4.86	4.65	4.47	4.32	4.18	3.90	3.63	3.40	3.19	3.01	2.85
		10.0	4.61	4.39	4.22	3.86	3.53	3.24	3.00	2.80	2.61	2.45	2.31
	2/480 x 45	1.2	6.31	6.12	5.95	5.80	5.67	5.55	5.44	5.34	5.25	5.17	5.09
		2.4	6.08	5.88	5.70	5.54	5.41	5.28	5.17	5.07	4.97	4.89	4.81
		3.6	5.88	5.66	5.48	5.32	5.18	5.05	4.94	4.83	4.74	4.65	4.57
		4.8	5.70	5.48	5.29	5.12	4.98	4.85	4.74	4.63	4.54	4.45	4.34
		6.0	5.53	5.31	5.12	4.95	4.81	4.68	4.56	4.46	4.29	4.07	3.87
		7.5	5.35	5.12	4.93	4.76	4.62	4.49	4.29	4.02	3.79	3.58	3.39
		10.0	5.09	4.85	4.66	4.49	4.19	3.87	3.59	3.35	3.13	2.95	2.78
	2/530 x 45	1.2	6.81	6.61	6.43	6.27	6.13	6.00	5.89	5.78	5.68	5.59	5.51
		2.4	6.58	6.37	6.18	6.01	5.86	5.73	5.61	5.50	5.40	5.30	5.22
		3.6	6.38	6.15	5.95	5.78	5.63	5.49	5.37	5.26	5.15	5.06	4.97
		4.8	6.19	5.95	5.75	5.58	5.42	5.28	5.16	5.05	4.94	4.85	4.76
		6.0	6.02	5.78	5.58	5.40	5.24	5.10	4.98	4.87	4.76	4.67	4.47
		7.5	5.83	5.59	5.38	5.20	5.04	4.90	4.78	4.66	4.40	4.16	3.95
		10.0	5.55	5.31	5.10	4.92	4.76	4.51	4.19	3.92	3.68	3.46	3.27
	2/580 x 45	1.2	7.31	7.09	6.90	6.73	6.58	6.44	6.32	6.21	6.10	6.00	5.91
		2.4	7.07	6.84	6.64	6.46	6.31	6.17	6.04	5.92	5.81	5.71	5.62
		3.6	6.86	6.62	6.41	6.23	6.07	5.92	5.79	5.67	5.56	5.46	5.37
		4.8	6.67	6.42	6.21	6.02	5.86	5.71	5.58	5.46	5.35	5.25	5.15
		6.0	6.50	6.24	6.03	5.84	5.67	5.52	5.39	5.27	5.16	5.06	4.96
		7.5	6.30	6.04	5.82	5.63	5.46	5.31	5.18	5.06	4.95	4.76	4.52
		10.0	6.02	5.75	5.53	5.33	5.17	5.02	4.81	4.50	4.23	3.99	3.78

= regular duty plating = heavy duty plating = super heavy duty plating

© Copyright 2008 MiTek Holdings, Inc.
All rights reserved.

ISSUED CONSENT BC131056

FLITCH BEAM

BC131056

GANG-NAIL®

Producer Statement

Producer Statement - PS1 - Design

ISSUED BY: MiTek New Zealand Limited

TO BE SUPPLIED TO: Building Consent Authorities in New Zealand

IN RESPECT OF: GANG-NAIL FLITCH BEAM Design Manual, 12/2007

AT: Various Locations in New Zealand

MiTek New Zealand Limited has provided engineering design services in respect of the requirements of Clause B1 of the NZ Building Code for

☐ All ☒ Part only as specified – GANG-NAIL FLITCH BEAM

of the proposed building work.

The selection charts within this design manual have been prepared in accordance with **Compliance Documents and Verification Method B1/VM1** of the NZ Building Code and in accordance with sound and widely accepted engineering principles.

On behalf of MiTek New Zealand Limited, and subject to:

1. The verification of the design assumptions within this manual
2. All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that the use of GANG-NAIL FLITCH BEAM in the proposed building, if constructed in accordance with the drawings, specifications and other documents provided, will comply with the relevant provisions of the Building Code.

MiTek New Zealand Limited holds a current policy of Professional Indemnity Insurance of not less than $500,000.

On behalf of MiTek New Zealand Limited Date: January 2010

In Ling Ng
Technical Services Manager
BE (Hons), CPEng, IntPE
MIPENZ (ID: 146585)

MiTek New Zealand Limited

AUCKLAND:	40 Neales Road, East Tamaki 2013	PO Box 58-014, Botany 2163	Ph: 09-274 7109	Fax: 09-274 7100
CHRISTCHURCH:	14 Pilkington Way, Wigram 8042	PO Box 8387, Riccarton 8440	Ph: 03-348 8691	Fax: 03-348 0314

MiTek™

© Copyright 2007 MiTek Holdings, Inc.
All rights reserved.

ISSUED CONSENT BC131056

FLITCH BEAM

GANG-NAIL®

Selection Charts

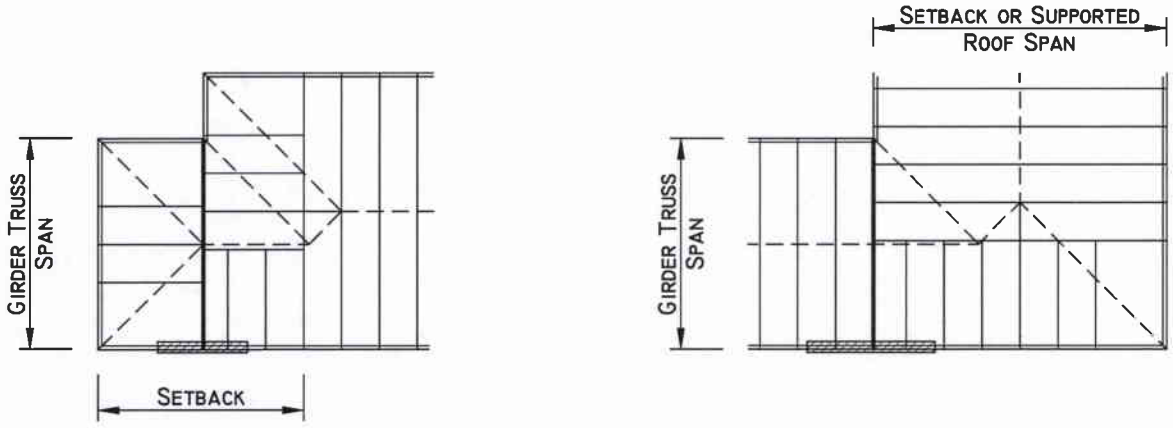


TABLE 7A: MSG8, VSG8, MSG6 or Unverified No. 1 Framing

LINTEL SUPPORTING GIRDER/SETBACK TRUSSES WITH LIGHT ROOF

LINTEL SIZE	SETBACK (m)	MAXIMUM LINTEL SPAN (m) GIRDER TRUSS SPAN (m)										
		5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0
FB15L	1.2	3.21	3.02	2.80	2.61	2.44	2.30	2.18	2.07	1.97	1.88	1.80
	2.4	2.73	2.45	2.22	2.04	1.88	1.74	1.63	1.53	1.44	1.36	1.29
	3.6	2.29	2.02	1.80	1.63	1.49	1.37	1.27	1.18	1.10	1.03	0.98
	4.8	1.94	1.69	1.50	1.34	1.21	1.11	1.02	0.95	0.88	0.82	0.77
	6.0	1.68	1.45	1.27	1.13	1.02	0.93	0.85	0.79	0.73	0.68	0.64
	7.5	1.42	1.21	1.06	0.94	0.84	0.76	0.70	0.64	0.60	0.56	0.52
	10.0	1.12	0.95	0.83	0.73	0.65	0.59	0.54	0.49	0.46	0.43	0.40
FB20M	1.2	4.80	4.63	4.48	4.36	4.23	4.06	3.87	3.69	3.54	3.39	3.27
	2.4	4.56	4.38	4.16	3.85	3.60	3.37	3.18	3.01	2.86	2.72	2.59
	3.6	4.35	3.95	3.60	3.30	3.05	2.83	2.65	2.49	2.35	2.22	2.10
	4.8	3.92	3.49	3.14	2.85	2.62	2.41	2.24	2.09	1.96	1.85	1.75
	6.0	3.52	3.10	2.76	2.49	2.27	2.09	1.93	1.79	1.68	1.57	1.48
	7.5	3.10	2.70	2.39	2.14	1.94	1.77	1.63	1.51	1.41	1.32	1.24
	10.0	2.56	2.20	1.93	1.71	1.54	1.40	1.29	1.19	1.10	1.03	0.96
FB25L	1.2	5.04	4.87	4.71	4.42	4.18	3.96	3.77	3.60	3.44	3.31	3.18
	2.4	4.80	4.39	4.04	3.74	3.49	3.28	3.09	2.92	2.77	2.64	2.51
	3.6	4.27	3.84	3.49	3.20	2.95	2.74	2.56	2.41	2.27	2.14	2.03
	4.8	3.80	3.38	3.03	2.76	2.53	2.33	2.16	2.02	1.89	1.78	1.68
	6.0	3.40	2.99	2.67	2.41	2.19	2.01	1.86	1.73	1.61	1.51	1.43
	7.5	2.99	2.60	2.30	2.06	1.87	1.70	1.57	1.45	1.35	1.27	1.19
	10.0	2.46	2.12	1.85	1.65	1.48	1.35	1.23	1.14	1.06	0.99	0.92
FB25M	1.2	5.79	5.59	5.41	5.26	5.13	5.01	4.91	4.81	4.71	4.53	4.37
	2.4	5.53	5.32	5.14	4.99	4.85	4.64	4.39	4.17	3.97	3.79	3.63
	3.6	5.31	5.10	4.91	4.63	4.30	4.02	3.78	3.56	3.37	3.20	3.05
	4.8	5.12	4.90	4.48	4.10	3.79	3.52	3.28	3.08	2.90	2.74	2.60
	6.0	4.95	4.47	4.02	3.66	3.36	3.10	2.88	2.69	2.53	2.38	2.25
	7.5	4.51	3.97	3.55	3.20	2.92	2.68	2.48	2.31	2.16	2.03	1.91
	10.0	3.82	3.32	2.93	2.63	2.38	2.17	2.00	1.85	1.72	1.61	1.51
FB30M	1.2	6.73	6.50	6.30	6.13	5.98	5.84	5.72	5.61	5.50	5.41	5.32
	2.4	6.47	6.23	6.02	5.84	5.69	5.55	5.42	5.31	5.11	4.89	4.70
	3.6	6.24	5.99	5.78	5.60	5.44	5.26	4.96	4.69	4.45	4.24	4.05
	4.8	6.03	5.78	5.57	5.38	5.02	4.69	4.39	4.14	3.91	3.71	3.53
	6.0	5.85	5.59	5.36	4.91	4.53	4.20	3.92	3.68	3.46	3.27	3.10
	7.5	5.64	5.34	4.81	4.37	4.00	3.70	3.43	3.20	3.00	2.83	2.67
	10.0	5.21	4.56	4.06	3.66	3.32	3.05	2.81	2.61	2.44	2.28	2.15

MiTek™

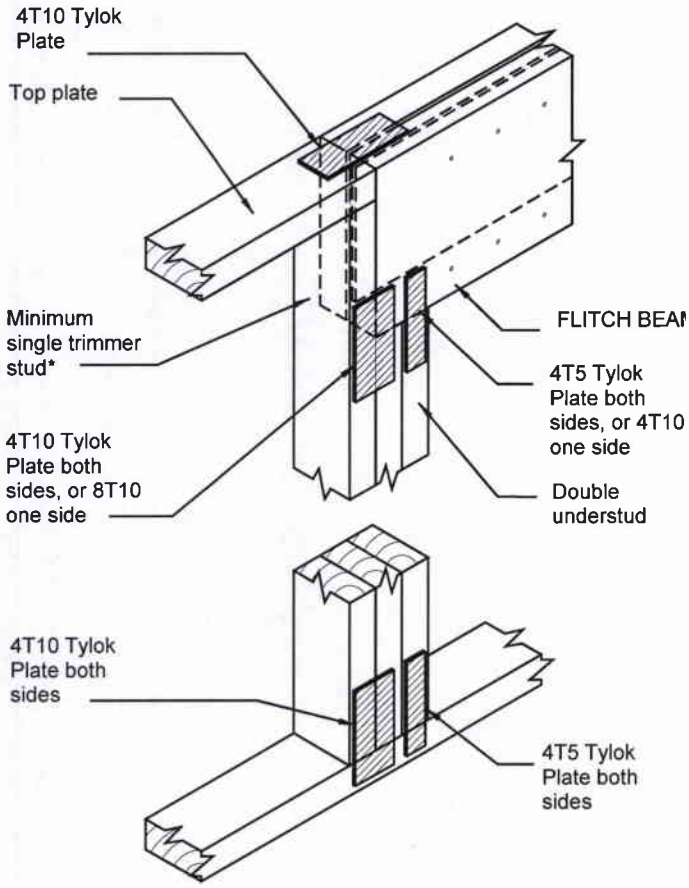
© Copyright 2007 MiTek Holdings, Inc.
All rights reserved.

ISSUED CONSENT BC131056

FLITCH BEAM

GANG-NAIL®

Fixing and Support Details



Simply Supported Beam

* Refer NZS3604:2011 Section 8.5.2 for trimming stud requirements.

© Copyright 2007 MiTek Holdings, Inc.
All rights reserved.

ISSUED CONSENT BC131056

VERSATILE®

HOMES & BUILDINGS

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
131056 2/07/2013 Keegan

FINLAYSON, LOT 130 SILVERSTREAM

Contents

	Section	Page
Excavation	1	2
Concrete & Reinforcing	2	4
Bricklayer	3	6
Aluminium Joinery	4	8
Carpentry	5	10
Water System	6	18
Sanitary Plumbing	7	20
Sanitaryware, Tapware	8	21
Drainage	9	22
Electrical	10	25
Painting	11	27
Floor Coverings	12	29
Appendices	13	29

EXCAVATION

SECTION 1

1. PRELIMINARY

The extent of excavation & associated work shall be as shown on the drawings, including all excavation work for the building.

2. SITE SAFETY

All excavation work shall meet all safety requirements. Provide proper support for excavations. Cover holes and fence off open trenches and banks. All precautions shall be taken to avoid damage to all public & private property.

3. SURFACE PREPERATION

Conforming with NZS 3604, 3.5 Site preparation, remove all turf, vegetation, trees, topsoil, stumps and rubbish from the area being built on.

4. STOCKPILE TOPSOIL

Stockpile excavated topsoil on site where directed. Keep separate from other excavated materials. Spread and level where directed before completion of the works.

5. EXCAVATION

Take foundation excavations to depths shown on drawings. Keep trenches plumb and straight, bottoms level and solid, stepped as detailed and clean and free of water.

6. FILLING MATERIALS

Volcanic tuff:	Scoriaceous tuff of variable grading excluding silt or clay material, capable of being placed and compacted as specified.
Rock fill:	Hard material comprising rock, broken stone, hard brick, concrete, run of pit scoria, or other comparable inert material capable of being placed and compacted as specified.
Sand fill:	Clean sand of such grading in particle size as to allow for mechanical compaction to 90% maximum density.
Hardcore:	Scoria or crushed rock to GAP (General All Passing) 40 grading.
Granular base:	Screened crushed gravel or scoria graded in size from 20 mm to 7 mm, clean. When tested with a standard sieve of 4.75 opening no material is to pass.
Dressing course:	Scoria to GAP 20 grading, or "dirty footpath scoria", or equivalent "all in" graded crushed metal aggregate.
Free-draining	

aggregate: Scoria or crushed gravel graded 50 to 14 clean.

7. GRANULAR BASE FOR SLABS

To NZS 3604, 7.5.3 Granular base. Consolidate with a vibrating roller. Blind the surface with coarse sand or sand/cement and roll ready to receive a damp proof membrane.

8. BACKFILLING

Compact backfilling in 150 mm layers, with the last 200 mm in clean topsoil, lightly compacted and neatly finished off.

CONCRETE & REINFORCING

SECTION 2

1. PRELIMINARY

1.1 Standards

All Workmanship and materials shall comply with NZS 3109, NZS 3104, NZS 3114, NZS 3124 & NZS 3112.

1.2 Inspection

At least 24 hours notice shall be given to the Territorial Authority before pouring, to allow for inspection of the excavation, formwork and reinforcing. No concrete shall be poured before approval.

2. MATERIALS

2.1 Concrete

All concrete shall be 20MPa minimum (refer to Foundation Plan in drawings for concrete strength relevant to zone), maximum aggregate size 19mm complying to NZS 3104.

2.2 Reinforcing

Refer to Engineers Foundation Design

2.3 Bar Chairs

Shall be purpose made moulded PVC and fitted for top reinforcement in slabs at 1.0 metre centres.

3. FORMWORK

Formwork shall be constructed that the concrete thickness & profiles required are obtained as detailed without removal causing any damage. Select formwork finish to produce the specified finish quality.

4. FOUNDATION WALLS

Refer to Engineers Foundation Design

5. CONCRETE FLOORS

Shall be constructed as per engineers foundation design

6. CASTING IN

Build in grounds, bolts and fixings for wall plates and bracing elements, holding down bolts, pipes, sleeves and fixings as required. Form pockets,

chases and flashing grooves as required. No grounds exceeding 100 mm in length. Minimum cover on conduits 40 mm. Do not encase aluminium items in concrete. Do not paint steel embedded items more than 25 mm into the concrete encasement. Cut back form ties to specified cover and fill the cavities with mortar. Wrap all pipes embedded in concrete with tape to break the bond and to allow for expansion.

7. SAW CUTS

Pour floor slabs cast on the ground in areas no greater than 25 square metres, with a maximum ratio of length to breadth of 1:1.5. Cut slabs where indicated on the drawings and as required to control shrinkage cracking. Carry out cutting as soon as possible, without causing tear-out of aggregate and before shrinkage cracking has occurred, generally within 24 hours of pouring. Where saw cuts are made, cut out 100 mm of every second wire of the mesh for a length of 50 mm each side of the saw cut position. Saw cuts: $^{1}/_{3}$rd slab depth, or 30 mm minimum. Clean out saw cuts. Fill with cement grout where the floor will be covered with carpet or vinyl.

8. CURING OF CONCRETE

All concrete shall be cured and protected as specified in NZS 3109 Section 7.7. Casting of slabs in very hot weather should be avoided, but if necessary water curing should be applied as soon as possible after finishing the work. Keep damp for no less than seven days, by the use of continuous water sprays, or ponding. Any curing agents to be used shall have the prior approval of an engineer. Slabs are to be kept free of any construction loads for 7 days, and 28 days before the application of heavy loads.

BRICKLAYER

SECTION 3

1. QUALIFICATIONS

1.1 Carry out Masonry Work with People competent and experienced, under supervision of a Licensed Building Practitioner.

2. PRELIMINARY

1.2 Scope

Supply and lay brickwork to areas shown on plans and elevations.

1.3 Standard

All work shall be in accordance with NZS 3604 and NZS 4229.

3. MATERIALS

2.1 Bricks

Bricks for external veneers shall be 70 series Austrial Bricks, colour & type of be selected by owner. All fair face brickwork shall be laid with the best face outward.

2.2 Cement

Shall be ordinary Portland cement and at the time of use shall comply with NZS 3122 Portland Cement.

2.3 Water

Water shall be potable

2.4 Sand for Mortar

Sand used shall be No.1 grade and/or shall comply with the relevant clauses of NZS 3103.

2.5 Ties

Shall be galvanized or stainless steel if in a sea spray zone as per NZS3604, section 4.5. Design to conform to with AS/NZS 2699.1, as modified by NZBC B1/AS1, 3.1 (NZS 3604).

2.6 Lintels

In Accordance with NZBC E2/AS1 section 9.2.9. table 4.5 and Section 4.5 in NZS 3604:2011 Durability.

2.7 Damp Proofing

Heavy Kraft Strip Laminates Saturated and coated with Bitumen.

4. STORAGE

Store Masonry clear of the ground, undercover and well ventilated until placed in the work. Ensure Masonry veneer is dry prior to laying.

5. MORTAR

Composed of Portland Cement, sand and mortar with an admixture to the provisions of NZS 4210.Mortar shall be discarded if not used within 90 minutes of mixing.

For Mortar colour add mineral oxide pigment to the requirements of NZS 4210. Colour to be suitable with brick veneer.

6. BRICK VENEER

All work to comply with NZBC E2/AS1 - section 9.2. Lay bricks in stretcher bond to a true level line and plumb face, with consistent joints not more than 9.5mm wide. A cavity not less that 40mm or more than 55mm shall be maintained between frame and veneer. Keep cavity clean and free of mortar droppings and protrusions and free of all pipe work or electrical wirings.

Wall ties to be screw fixed to face of studs (with out damaging the building wrap) approved galvanized ties at 600mm horizontally and 400mm max vertically. Form weep holes in bottom course and vent holes in top course by raking out every 3rd perpend in each of those courses.

Veneer Lintels to support masonry veneer above window & door openings. Angle lintel dimensions shall be shown on drawings. Refer NZBC Table 18E: E2/AS1 for lintel sizes.

7. CLEAN UP

Clean down brickwork to remove stains. Remove efflorescence with a stiff bristle broom, blot with a damp sponge and wash walls with a plentiful supply of clean water during fine weather.

ALUMINIUM JOINERY

SECTION 4

1. STANDARDS

All work & materials to comply with NZBC B1/AS1, NZBC 4211, NZBC 223

2. WINDOW AND DOOR REVEALS

Reveals to be graded materials suitable for paint finish, treated to H3.1.

3. FLASHINGS

Fit flashings as per drawings.

4. ORGANIC POWDER COATING FINISH

To the Window Association of New Zealand's "Specification for powder coatings on architectural aluminium products". All finished surfaces to show uniformity of gloss and colour (to match sample) free of all coating defects.

5. SEALANT, GLAZING TAPE AND GASKETS

To be selected as per the window manufacturer's requirements.

6. FIXINGS

Ensure fixings and bracketing are compatible with aluminium. Do not use electroplated zinc fasteners or brass fastenings.

7. OPENING PREPARATION

Confirm framing openings on site for dimension, plumb and straightness prior to fabrication or ordering of aluminium joinery. Prepare and trim to WANZ WIS™ Pre Cladding Trim Preparation requirements.

8. EXECUTION GENERALLY

To NZBC E2/VM1, WANZ "Aluminium Window Handbook" and "Installation code for aluminium joinery products". Install to WANZ WIS™ Window installation System requirements.

9. HANDLING

Avoid distortion of elements during transit, handling and storage. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement. Do not deliver to site any elements which cannot be immediately unloaded into suitable conditions of storage.

10. CORROSION PROTECTION

Seal or suitably coat cut ends and holes drilled in aluminium before the frames are installed. Before fixing, apply bituminous coatings, slips or

underlays between dissimilar metals in contact, or aluminium in contact with concrete.

11. FIX FRAMES

Fix frames rigidly in place without distortion, to the window manufacturer's and the Window Association of New Zealand's "Aluminium Window Handbook" requirements, plumb, true to line and face, weathertight and with all openings operating freely.

12. DRAINAGE

Anti-condensation channels to sills. All sills to sashes and fixed lights to incorporate positive drainage to the exterior.

13. GLAZING INSTALLATION

All glass held in aluminium beads and black PVC gaskets.

14. SAFETY GLASS INSTALLATION

Ensure use of grade A safety glass to doors, sidelight panels, low level windows and all other locations to comply with NZS 4223, part 3, as modified by NZBC F2/AS1, 1.0 Glazing.

15. INSTALL FLASHINGS

Install flashings to heads, jambs and sills of frames as supplied and required by the window manufacturer and as detailed on the drawings. Finish on head flashings to match window finish.

16. SEAL FRAMES ON SITE

Seal frames to each other and to adjoining structure and finishes, all as required by the window manufacturer and to make the installation weathertight.

17. SAFETY

Indicate the presence of transparent glasses for the remainder of the contract period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface. Permanent manifestations to comply with NZS 4223, part 3, 303.1.

18. CLEAN GLASS AND FRAMES

Clean off or remove glass indicators at completion of the building. Clean glass inside and out to a shining finish. Clean down both sides of window and door frames using the methods required by the window and door manufacturer.

CARPENTRY

SECTION5

1. PRELIMINARY

1.1 Standards

Workmanship and materials shall comply with NZS 3604:2011, the NZBC and all relevant N.Z. Standards.

1.2 Protection

All finished or partly finished work shall be protected from surface injury or damage from exposure to the weather or any other cause.

2. MATERIALS

2.1 Timber

All timber shall comply with NZS 3602, tables 1 to 3. Moisture content to be between 12% and 18% before fixings linings.

2.2 Fasteners

Nails, screws and other fixings shall be galvanised for exterior work or stainless steel where required by NZS 3604:2011.

3. DAMP PROOF COURSE

Where timber is in contact with concrete the timber shall be separated from the concrete with "Cromford supercourse 500" hi-impact polyethylene DPC.

4. SCHEDULE OF TIMBERS

Location	Timber	Grade	Treatment
Wall framing	Pinus Radiata	SG8	H 1.2
Trusses	Pinus Radiata	SG8	H 1.2
Purlins	Pinus Radiata	SG8	H 1.2

5. WALL FRAMING

5.1 Exterior Framing

All External framing shall be 90x45 SG8 studs at 600crs. Dwangs shall be at 800crs. Double top plate shall be 140x35 SG8 and top and bottom plates shall be 90x45 SG8.

Fix bottom plates to concrete floors with bolts or bottom plate anchors @ 900mm centres maximum.

5.2 Internal Framing

Shall be 90x45 SG8 studs at 600crs with dwangs at 800crs.

Bottom plates may be fixed to concrete floors with powder actuated fixings as "Ramset" or similar. Bracing elements walls shall be fixed with bolts or bottom plate anchors @ 900mm centres maximum.

5.3 Bracing

Shall be Winstones Gib Board fixed in accordance with the Bracing Plan and to satisfy all requirements in the NZ3604. Fix bracing to manufacturers recommendations at the wall position.

6. ROOF FRAMING

6.1 Trusses

All trusses to be H1.2 SG8 90x45 timber unless specified otherwise by manufacturer. Trusses shall be spaced at 900mm crs and fabricated as shown on the drawing by registered truss manufacturer.

6.2 Purlins

All purlins to be H1.2 SG8 70x45 timber unless specified otherwise by manufacturer. Purlins shall be 70x45 SG8 @ 800crs fixed over trusses as per purlin fixing details.

6.3 Soffit

Fix 70x45 sprockets to side of truss overhang to form soffits. Fix 4.5mm hardiflex soffit.

6.4 Bracing

Shall be Lumberlok galv steel strap brace (27 x 0.6mm) fixed as per Truss layout.

6.5 Fascia

Shall be Colorsteel Steel & Tube Fascia system. Fix fascia brackets with galv. clouts to end of truss overhang.

7. ROOFING

7.1 Roof Underlay

Lay Thermakraft 215 self supporting roof underlay in accordance with NZBC AS/ 8.1.5.& to NZS 3604. Underlay shall be breather type to NZS 2295 & run parallel to ridge and lapped 150mm over lower sheet. Provide adequate lap of roof underlay into gutters.

Underlay shall be provided under all metal roofs & be adequately supported unless self-supporting type.

7.2 Gutter

Shall be Colorsteel 'D' shape Fascia & Gutter system.

Fix end brackets 300mm from corners intermediate bracket at 900mm crs maximum spacing. Fit pre-fabricated ends to gutters, seal joints with RTV sealant and rivet fix. Cut hole for down pipe dropper. Rivet dropper and seal with R.T.V. Lap lengths of gutter to form joints with overlap running down the fall of the gutter. Seal between laps and rivet fix. Fix gutter roll to bracket ends then fold gutter up into position. Secure gutter by clipping bottom into bracket and front rolled edge over gutter bracket.

7.3 Flashings

Provide all flashings as required, Fix all flashings & cappings in accordance with NZBC Table 11 E2/AS1.

7.4 Roof penetrations

Flash and over flash penetrations through the roof with 'Dektite' flashings to manufactures recommendations and as per NZBC E2/AS1 8.1.7.

7.5 Roofing Iron

a) Material: Shall be Versatile Longrun: 0.4 B.M.T., G.550, ZM275 NZ Colorsteel Endura or Colorsteel Maxx if with 100m of the high tide mark, fixed with 50mm tek screws with colour matched heads with neoprene seals.

b) Installation: Lay sheets with laps away from the prevailing wind. Lap bottom edge of sheet 50mm over fascia.

Fix roofing through every rib to gutter purlin. Nail through sheet laps to every purlin. Fix each rib to each alternative purlin, except no two adjacent ribs (except laps) shall be nailed to the same purlin. All cutting of roofing shall be by shears or nibblers. Cutting discs will not be permitted.

Installers should wear clean soft soled shoes when walking on roof and should take all reasonable care to ensure the surface film of the roofing is not scratched. After completion of the roof wash down the entire surface with hose and soft bristled broom to remove all fixing debris and swarf. Ensure all fixing debris and swarf is washed out of gutters.

c) Limitations and Maintenance: Versatile colorsteel roofing will perform to the requirements of New Zealand Building Code, Clause B.2 Durability if installed and maintained as herein specified and in accordance with the recommendations of NZ Steels Environmental Categories Guide.

7.6 Ridging

Shall be coloured steel alu-edged ridging with 100mm laps between sections. Lap lengths away from prevailing wind and fix with 50mm tek screws through every second roof rib into top purlin. Dress alu-edge down into tray of roofing. Colour to match roofing iron.

8. EXTERIOR WALL COVERINGS

8.1 Building wrap

(BRICK) Cover all exterior wall framing with Fast Wrap (Branz Appraisal No. 615) building wrap complying with NZBC E2/AS1 clause 9.1.7. Securely fix to top and bottom plates and studs.

8.2 Brick Veneer

See Section 3.

9. INSULATION

9.1 General

Refer to drawings for extent of insulation & building envelope. Install insulation in accordance with NZBC acceptable solution H1/AS1 & to the manufacturers recommendations.

9.2 Ceiling Insulation

Insulate all interior roof cavity framing with R3.6 Pink batts, minimum to form a complete insulated diaphragm.

9.3 Wall Insulation

Insulate all exterior framing with friction fit R2.6 Pink batts to form a complete envelope.

10. INTERIOR LININGS

11.1 General

All linings shall be carried to floor level and behind all fittings. The moisture content of the framing shall be as specified by the manufacturer before fixing any lining & to NZS 3602, Table 4 Allowable Moisture Content.

Note: See specific stud heights to noted on drawings.

11.2 Gibraltar Board

Line all walls with 10mm (except wet areas) and ceilings with 13mm Gibraltar board stopped to a level 4 paint grade finish.

Line all walls with 10mm & ceilings with 13mm in wet areas with Gibraltar 'Aqualine' board stopped to a level 4 paint grade finish. To be constructed to the requirements of 'Gib board Aqualine Wet Area Systems'.

Fix sheets to manufacturers recommendations with Gib screws just below the surface of the board (without rupturing the face paper or core). Fix ceiling sheets across ceiling battens in a staggered pattern. Fix wall sheets horizontally. Fix wall sheets to stud in internal corners and at junctions with other walls.

Gib must be stored dry under cover, staked flat and clear off the floor with sufficient support to avoid sagging and damage to board edges and ends. Gib must be handled as finishing material.

Protect joinery, fittings and finishes already in place from water straining or damage from lining insulation. Ensure building is weather proof before lining work commences.

Plasterboard Accessories:

External angles:	Slim type 0.5mm galvanized steel.
Casing bead:	Slim type 0.5mm galvanized steel or PVC.
Cornice:	Plasterboard scotia type.
Nails:	Galvanized clouts 40mm x 2.5mm.
Screws:	40 mm x 6 gauge zinc electro-plated bugle head gypsum drywall screws
Jointing compound & paper tape:	To the board manufacturer's requirements.
Adhesive:	Multi-purpose water based wallboard adhesive.

11.3 Jointing

Only use clean mixing containers & potable water. Discard compound that has started to harden, do not over mix. Refer to 'GIB Board Stopping & Finishing Sytems' for details.

- Joints: Fill Joint recesses with Gib jointing compound, center the reinforcing tape, apply second coat of GIB jointing compound &

follow with coat of Gib finishing compound. Allow to dry/set before applying finishing coat & lightly sand off.

- Stopping nails/screws: Apply two successive coats of Gib jointing compound and a coat of finishing compound.
- Boxed corners: Fill Gib jointing compound, centre reinforcing tape into internal angle & apply a coat of Gib finishing compound to complete.
- External Corners: Apply 2 coats of Gib Jointing compound followed by a coat of finishing compound.
- End Butt Joints: Fill tape and coat as for tapered edge joints, with each strip double width.

11.3 Levels of Finish

Provide levels of finish to standards AS/NZS 2589 to:

Level 4: Surfaces receiving light texture or wall covering finishes, suitable for paint finish.

Level 5: Surfaces receiving think coating finishes, suitable for critical lighting, semi-gloss or gloss type paint finishes.

11.4 Skirtings

Shall be customwood 60 x 12mm skirting to all wall and floor junctions including the inside of all built-in cupboards and wardrobes.

11. CUPBOARDS AND WARDROBES

12.1 Wardrobes

Shall be fully lined and stopped. Fit 20mm full length customwood or particle board shelf at 1.7m above floor, with 20mm galv-pipe hanging rail 75mm below shelf.

12.2 Cylinder Cupboard

Fit four shelves beside cylinder as required. Each shelf to be ex 75 x 25 slats spaced 15mm apart.

12. INTERIOR DOORS

Shall be hollow core, paint grade flush panel doors hung. Frames shall be grooved or flat (suitable for architraves). Wedge and rigidly fix in place without distortion, plumb, and true to line and face. Fit hardware selected and provided, all in accordance with the hardware manufacturer's requirements.

13. KITCHEN JOINERY

14.1 Execution Generally

To include those methods, practices and processes contained in the current syllabus for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

14.2 Fabrication Quality

Check site dimensions. Carry out machining within the practices required for the particular timber or wood product being used. Machine drill and cut holes and recesses and form joints to the componentry manufacturer's requirements. Work accurate, square and true to line and face.

14.3 Materials/Components

Door & drawer front style	Melteca 16mm MDF with 2mm colour PVC edge
End Panels	Melteca 16mm MDF with 2mm colour PVC edge
Handles	A choice of 10 handle types in brushed nickel or matt chrome finish
Toe kick,cornice	Melteca 16mm MDF with 2mm colour PVC edge
Carcass Interior Finish	Satin White 16mmPB with 2mm white PVC edge
Hinges	Hafele or equivalent
Runners	Hafele draw set white metal sided or equivalent
Bench Top	Formica 38mm FR10 rounded bull-nose edges (top mounted sink). Allocation of joints on benchtop to be at the discretion of benchtop supplier
Sink	1 x stainless steel sink with 1 bowl
Trays	1 x standard cutlery tray
Appliances	Dishwasher Underbench oven Ceramic hob or gas hob
Cooker splashbacks	Option 1: 5mm Ceramic Tiles over 10mm gib Option 2: 5mm Toughened Glass over 10mm gib Option 3: 0.4mm Sheet metal over 6mm fibre cement & 10mm gib

14.4 Factory Joinery Fittings

Carry out jointing, dowelling and other operations necessary for the proper assembly of the fittings as detailed, with fixings concealed unless otherwise detailed. Use glue joints where provision for shrinkage is not required, with contact surfaces, gluing and pressure all applied to the glue manufacturer's requirements. Locate and drive connectors and fasteners

to the bolt manufacturer's requirements. Scribe fit adjustable shelves with 4 shelf pins and locate force fit pin holes at 50 mm maximum centres in solid cheeks. Hang doors on concealed hinges.

14.5 Transit & Delivery

Load, transport and unload fittings without distortion or damage and keep covered to protect from the weather. Do not deliver fittings until floor, wall and ceiling surfaces are in place and the fittings can be placed in their final location.

14.6 Installation

Scribe fit on site and install level, square, plumb and true to line and face.

WATER SYSTEM

SECTION 6

1. QUALIFICATIONS

All work shall be carried out in accordance with Drainage & plumbing regulations, Local Authority requirements & good trade practice. Work carried out shall comply with NZBC G10/AS1, G12/AS1 & G13/AS1

Work to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

2. POLYETHYLENE SUPPLY WATER PIPE

From water metre box to house use 20mm high-density cross-linked polyethylene composite pipe and fittings to AS/NZS 4130. Run pipes in straight runs, firmly fixed to falls, with long radius bends and jointed by brazing or with crox fittings, all to NZBC G12/AS1, 5.0 Water supply.

3. POLYBUTYLENE WATER PIPE

Polybutylene tubing complete with fittings and accessories brand-matched to AS/NZS 2642.

4. INSULATION FOR HOT WATER PIPES

Preformed closed cell foam.

5. EXPOSED PIPES

- white polyethylene composite pipe with white nuts and accessories
- pipework finish to include escutcheon plates and bends and elbows protruding from walls or fittings.

6. EXECUTION GENERALLY

Generally carry out the whole of this work and tests to NZBC G12/AS1.

7. INSTALL POLYBUTYLENE WATER SUPPLY

Run 20mm pipe from entry point direct to hot water cylinder via stop cock, filter, pressure reducing valve, non return valve and final stop cock. Tee of supply pipe before H.W.C. and run 20mm dia pipe with 15mm dia, branches and risers to sink, vanity, bath, shower, toilet, tub and hose taps. Run pipes complete with all fittings, support and fixing, and jointed to the pipe manufacturer's specifications, all to NZBC G12/AS1, 5.0 Water supply. Conceal piping, insulate hot water pipework and pressure test before the wall linings are fixed.

8. OUTLET LOCATIONS

Ensure wall outlets for exposed pipes are level and centred on the fixture to ensure the neat installation of exposed pipework.

9. INSTALL HOT WATER PIPE INSULATION

Insulate hot water pipes in accordance with the insulation manufacturer's instructions. Cut insulation sections tight between timber framing and tight between the webs of steel studs. Where hair felt is used, wrap around pipes in two layers in opposite directions and secure with galvanized steel wire ties.

10. INSTALL HOT WATER HEATER

Install & restrain Rheem 250L mains pressure cylinder (model 312 250 15) where shown on drawings, complete with all the necessary fittings to the heater manufacturer's requirements and NZBC G12/AS1, 6.10 Water heater installation or NZS 5261.

For cylinder(s) supply & fit TACO 52-600-25 30-70 tempering valve, inline set at max 55 degrees and take 18mm hot supply with appropriate ties to fittings. Supply & install necessary relief values isolating taps, drains, pipes etc. All cisterns, hot water cylinders etc with overflow pipes must be piped away to the outside.
(Note: With the use of plastic type piping, plumber to discuss & provide means of electrical earthing with the electrician.)

11. BACKFLOW PREVENTION

Fit back flow prevention devices to all outlets where it is possible for water or contaminants to backflow in the potable water supply.

12. PENETRATIONS

Provide and fit collars and escutcheon plates to match pipework at penetrations through constructions.

13. COMPLETION

Pressure test to ensure no leakage and leave in proper working order. Clean tapware and fittings.

SANITARY PLUMBING

SECTION7 7

1. QUALIFICATIONS

Carry out work by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

2. UPVC WASTE, SOIL AND VENT PIPES

uPVC pipe, complete with fittings brand-matched to the pipe manufacturer's requirements.

3. EXPOSED PIPES AND TRAPS

As selected and to the following details:

- chrome plate on copper pipes and associated copper and brass fittings
- white polybutylene or PVC, including all associated fittings.

4. EXECUTION GENERALLY

Carry out this work and complete all tests to AS/NZS 3500.2.

5. ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating actual contact or continuity of water between dissimilar metals.

6. INSTALL TRAPS, WASTE AND VENT PIPES

Connect waste outlets to traps and run waste pipes and back vents concealed, sized and fixed to AS/NZS 3500.2. Discharge wastes into the drainage system stack, soil pipe, or gully trap as shown. Bird proof mesh to roof vents and vermin proof mesh to untrapped waste pipes.

7. PENETRATIONS

At penetrations through constructions provide and fit collars and escutcheon plates to match pipework.

8. TEST

Test soil and waste disposal systems to ensure no leakage exists and leave in working order.

9. ENSURE

Ensure all sanitary plumbing fittings and pipework are complete and operational.

SANITARYWARE, TAPWARE

SECTION 8

1. QUALIFICATIONS

Carry out work by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

2. EXECUTION GENERALLY

Carry out this work and complete all tests to AS/NZS 3500.2.

3. INSTALL SANITARYWARE

Fit and install sanitaryware and associated screens, elements and hardware, plumb, true to line and rigid, to the fixture manufacturer's requirements. Supply standard chrome plated brass wastes and plastic plugs on chrome plated chains with all basins, tubs and baths.

4. INSTALL TAPWARE

Install tapware in accordance with the tap manufacturer's requirements. Flush out on completion. Check that washers or ceramic discs are operating correctly.

5. TEST

Test soil and waste disposal systems to ensure no leakage exists and leave in working order.

6. ENSURE

Ensure all sanitary plumbing fittings and pipework are complete and operational.

DRAINAGE

SECTION 9

7. QUALIFICATIONS

All drainage work to be carried out in accordance with Local Authority requirements and bylaws & to the requirements of NZBC. All work to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

8. MATERIALS

Concrete:	17.5 MPa prescribed grade.
Reinforcement:	Grade 300 deformed bars.
uPVC pipes:	uPVC pipes bends, junctions, fittings and joints.
Field drains:	Plastic pipes for field drains perforated and coiled with filter fabric over.
Drainage/filling materials	
Granular fill:	Clean gravel or crushed stone or a blend of these. Particle size from minimum 7 mm to maximum 20 mm.
Selected fill:	Fine grain soil or granular material suitable for bedding, excluding topsoil.
Ordinary fill:	Top soil or other excavated materials.

9. FITTINGS

Gully traps:	To NZBC G13/AS2, 3.3 Gully traps, complete with grating.
Strip drain channel:	Proprietary, modular, variable invert, uPVC or precast concrete drainage channel sections and drainage sump, embedded in site concrete and fitted with selected metal gratings.

10. EXCAVATE

The excavation of trenches for drains shall be accurately made with base clean & true grade so threat no unnecessary filling is required. Adequate width shall be allowed in accordance with depth of drain to enable laying & jointing to be properly carried out, trenches to be kept firm & dry & shall be opened up only in lengths that they can be protected, utilised & filled within a reasonable timeframe. Excavate for drains to a firm even base with correct gradients set in straight runs.

11. MANUFACTURER'S REQUIREMENTS

All drainage installations to the pipe and fitting manufacturer's requirements.

12. EXCAVATION GENERALLY

Carry out drainage work to AS/NZS 3500.2 (sanitary plumbing and drainage) and AS/NZS 3500.3 (stormwater drainage) as modified by NZBC B1/AS1, 6.0 Drains.

13. LAY WASTEWATER DRAINS

Lay drains in straight runs to correct gradients, to discharge into the network utility operators sewer. Set inspection fittings on a concrete base.

14. INSTALL GULLY TRAPS

Set on concrete 50 mm above surrounding ground or paving and brought up to protect the top of the fitting. Trowel off.

15. LAY STORMWATER DRAINS

Confirm the required location of downpipes and finished ground levels before commencing pipework. Set downpipe bends in concrete brought up to protect the top of the bend from damage. Lay drains in straight runs to correct gradients to discharge into the network utility operator's stormwater system.

16. LAY GROUNDWATER DRAINS

Lay perforated coil piping firmly in a granular bed in straight runs to correct gradients, discharging into a sump. Carry the granular bed up over the pipes without disturbing them, to a total depth of 300 mm and cover with geotextile fabric; all to the pipe manufacturer's requirements.

17. INSTALL STRIP DRAIN CHANNEL

Excavate trench and form site concrete base to fall. Set interlocking channel sections, sumps and accessories in place, all in accordance with the channel manufacturer's requirements. Check falls and install gratings and covers.

18. INSTALL SURFACE WATER SUMP

To NZBC E1/AS1, 3.6 Surface water inlets to drains. Ceramic half-siphon pipe. Cast iron frame with a lift out grating.

19. CONCRETE ENCASEMENT

Concrete encase shallow drains and drains under driveways, on a 100 mm deep 17.5 MPa concrete bed reinforced with three 10 mm mild steel bars. Surround pipes with a polythene membrane to allow movement and encase in 100 mm 17.5 MPa concrete.

20. FIELD TEST

Field test drains for watertightness to the satisfaction of the Building Consent Authority inspector.

21. BACKFILL

Backfill drain lines in 150 mm layers, well tamped but without disturbing the drains. Finish off with 150 mm of topsoil, slightly mounded above the finished ground line.

ELECTRICAL

SECTION 11

1. COMPLY

All electrical work carried out to comply with the Electricity (Safety) Regulations 2010, AS/NZS 3000, NZBC G8/AS1&G9/AS1 and the New Zealand Electrical Codes of practice for listed & prescribed work & with the Network Utility operations requirements. Apply for the service connection. Arrange for the required inspections of listed work. The owner is responsible to pay all fees & charges.

2. QUALIFICATIONS

Carry out work by or under the direct supervision of a holder of a practising certificate under the Electricity (Safety)Regulations 2010.

3. CERTIFICATE OF COMPLIANCE

Supply a certificate of compliance to the owner, as required by the Electricity(Safety) Regulations 2010. Allow the network utility operator to view before the meter installation, listed work inspection, polarity check and livening of supply.

4. METER BOARD / DISTRIBUTION BOARD / SUB BOARD

Proprietary manufactured meter board complete with flashing kit. Proprietary manufactured distribution board, zinc plated powder coated, or heavy duty plastic, fire resistant enclosed construction, complete with neutral and earth busbars, MCB's, RCD's and main switch. All protective devices: 6kA MCB's of the appropriate rating. Fit to board manufacturer's requirements where detailed. Recess into wall and ensure fire containment properties of the enclosure is maintained.

5. CABLES

Tough plastic sheathed copper conductors. Minimum sizes are indicated below. Increase these as necessary due to method of installation, cable length or load.
Lighting circuits: 1.5 mm² on 10 amp MCBs for domestic construction
Power circuits: 1.5 mm² on 16 amp MCBs for domestic construction

6. ELECTRICAL ACCESSORIES

As selected and to the following details:

Switch units:	Minimum 16 amp, 230 volt flush polycarbonate units. For number of switches per unit, dimmer units, neon (indicator or toggle) units, locator units and 2-way units refer to the electrical drawings.

Switched units:	socket	10 amp, 230 volt flush polycarbonate 3 pin combined switch units.
Hot water switch:	system	One way 20 amp switch complete with clamp for flexible PVC conduit.
Stove/range outlet and switch:	socket	32 amp, 230 volt flush polycarbonate 3 pin combined switch unit, with remote isolating switch.

7. CABLING

Install with a maximum of 10 light outlet units or 6 switched socket units on any circuit. Separate circuits for all electric heating appliances. All cabling run concealed. No TPS cable laid directly in concrete. Locate holes in timber framing for the passage of cables at the centre line of the timber member.

8. INSTALL SWITCH AND SOCKET UNITS

Fit single and double switch units and socket units level and plumb where shown on the drawings. Install at the following heights (to the centre of the unit) unless shown otherwise on the drawings or to match existing.

Switch Units: 1000 mm.
Socket Units: 150 mm above work benches.
400 mm elsewhere.

Mount switches vertically and socket units horizontally. Label switch units which control electrical equipment by engraving on the rocker switch.

9. INSTALL LIGHT FITTINGS

Install selected light fittings in the locations and heights shown on the drawings and in accordance with the fitting manufacturer's requirements.

10. ELECTRIC HOT WATER SYSTEM

Wire as a separate circuit through a wall-mounted isolating switch, with the cable from switch to element encased in flexible PVC conduit, clamp fixed at each end.

11. WIRE FOR PLUMBING FITTINGS

Wire for fittings to the Electricity (Safety) Regulations 2010 to the fitting manufacturer's requirements.

12. INSTALL SMOKE ALARMS

Smoke alarms with hush buttons to be installed to NZBC F7/AS1, 3.3 Location of smoke alarms, and to manufacturer's requirements, fitted neatly and without damage to the surrounding finish.

13. ELECTRIC POWERED FITTINGS AND EQUIPMENT

Install and wire selected fittings and equipment to the Electricity (Safety) Regulations 2010 and the individual fittings and equipment manufacturer's requirements. Refer to the drawings for required layouts and locations for equipment.

14. HEATPUMP

Make provisions for heat pump to areas as specified on drawings. Install to manufacturers specification.

15. COMPLETION

Leave all fittings, lamps and tubes operational, with equipment and diffusers clean.

PAINTING

SECTION 12

1. QUALIFICATIONS

Carry out work using competent and experienced painters.

2. HEALTH AND SAFETY

Refer to the requirements of the Health and Safety in Employment Act 1992 and if elimination or isolation is not possible, then minimise the hazards in this work.

3. PAINT

As selected and to the paint manufacturer's standards for exterior and/or interior primers, undercoats, sealers, stains, clear coatings, solvent-borne and water-borne paints.

4. GAP FILLERS

Linseed oil, putty, plastic wood, wood filler or plastic filler, to suit and to match the surface being prepared.

5. INSPECT SURFACES

It is the painters responsibility to Inspect surfaces being painted and report to the owner any that will not, after the preparatory work laid down by the paint manufacturer, allow work of the required standard. Confirm that all areas have adequate lighting and are sufficiently free of other construction activities to enable painting work to proceed.

6. PROTECT

Cover up adjoining surfaces and areas liable to damage or over-painting.

7. REMOVE HARDWARE

Remove hardware and door/window furniture and replace on completion. Do not paint over permanently attached hinges, or any hardware items which cannot be removed.

8. PRIMING AND SEALING

Ensure that priming and sealing work needed before or during construction is carried out when required.

9. ENVIRONMENTAL CONDITIONS

Carry out work within acceptable temperature and humidity limits, with timber dry, all to the requirements of the paint manufacturer.

10. SELECTIONS

Confirm all selections, colours and finishes for both paint and wallpaper with the owner.

11. SHARP EDGES, CRACKS AND HOLES

Repair as required by the paint manufacturer.

12. PREPARE SURFACES

Prepare surfaces as required by the paint manufacturer. Make good all damage and defects.

13. PAINT APPLICATION

Apply paint by brush and/or roller to suit the location of the coating and to the paint manufacturer's requirements. Do not spray on site without express permission.

14. MANUFACTURER'S MANUALS

Refer to the paint manufacturers' manuals and follow their preparation, sequence and application requirements applying to each system. Ensure all paint coats in any system are supplied by the same manufacturer.

15. SCUFF BETWEEN COATS

Scuff between all coats to remove any dust pick-up, protruding fibres and coarse particles.

16. FINISHED PAINT SURFACES

Finished paint surfaces to show uniformity of gloss and colour, with the correct thickness for each coat, and freedom from painting defects. Ensure finished work is clean and free of any disfigurement.

17. CLEAN

Clean adjoining surfaces, glass and fittings of any paint contamination.

18. REPLACE

Replace hardware without damage to the hardware or the adjoining surfaces.

FLOOR COVERINGS

SECTION 13

1. SELECTIONS

Confirm all selections, colours and finishes for carpet, vinyl or tiles with the owner.

2. QUALIFICATIONS

Carry out work using competent and experienced installers.

APPENDICES (TO FOLLOW)

SECTION 14

1. Certificate of Title / Sales & Purchase Agreement
2. Ground Report
3. Engineers Calculations
4. Engineers PSD(s)
5. Truss Design
6. Truss Manufacturer PSD(s)
7. H1 Calculations
8. Bracing Calculations
9. Bracing Details
10. Gib Wet Area system Specs
11. Ceiling batten Specs
12. Roof Cladding Specs
13. Down Pipe Calculations
14. Down Pipe/Gutter Specs
15. Building wrap Specs
16. Roof underlay Specs
17. Insulation Specs
18. Brick veneer Specs
19. HWC Specs
20. Heat pump Specs
21. Bedding & Backfill
22. Smoke Alarm Specs
23. Air Extraction Fan Specs
24. Equipotential Bonding
25. Overflow Relief Gully Trap Diagram
26. Sealant Specs

ISSUED CONSENT BC131056

Building Consent 131056
Received 2/7/13

VERSATILE BUILDINGS

EROSION & SEDIMENT CONTROL

- Preconstruction Planning: Project Manager to oversee commissioning of Sediment Control on site.
- All Weather Access: Stabilize access and parking areas with gravel.
- Control Water at top of site.
- Manage within sediment control zone – surplus soil/gravel or stockpile to be contained behind sediment fences.
- Sediment Control: Sediment fences (Straw Bails) to be laid to street and/or areas where runoff could occur. Wash down areas for trucks to be graveled.
- Vegetation Buffer: Protect Vegetation/Grass area by management fences (Straw Bails).
- Manage Litter and Waste: Provide contained area for waste management.
- Connect all Downpipes: as soon as roof is fitted.
- Service Trenching: Minimize trenching and amount of time that the trench is open.
- Maintain and Decommission: Foreman to ensure that sediment control fences are maintained and decommissioned.

WASTE MANAGEMENT GUIDELINES

- Put up a clear sign informing the workers about waste reduction practices.
- Allocate one area on the site for all bins. A bin for each recycle, reuse and disposal destination. Clearly label each bin by what it is intended to store.
- Different waste types occur at different times of the project, such a foundation, framing, cladding and fitout times. So plan your waste separation system around this.
- Arrange for materials to arrive as needed and protect then to avoid damage.
- Reuse off-cuts and other 'waste' as much as you can on the job, or make them available for others to use.
- Let the site manager know if you expect a large amount of a particular waste, so that a reuse or recycling option can be found.
- Handle and dispose of all hazardous materials in accordance with national and local regulations.
- The waste skip is only for materials that cannot be reused or recycled, and should be used as a last resort.