

Form 7

Code compliance certificate 122095

Section 95, Building Act 2004

The building

Street address of building: 55 Mandeville Park Dr, Mandeville North

Legal description of land where building is located: Lot 27 DP 448155

Valuation number: 2175068109

Building name:

Location of building within site/block number:

Level/unit number:

Current, lawfully established, use:

Year first constructed:

The owner

Name of owner: McNicholl Douglas Harvey

Contact person:

Mailing address: 9 Istana Place, Christchurch 8083

Street address/registered office:

Phone number: Landline: 03 943 3393

Mobile:

Daytime:

After hours:

Facsimile number:

Email address:

Website:

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

Full Name: D McNicoll

Mailing Address: C/- Jennian Homes, PO Box 79009, Avonhead, Christchurch 8446

Phones:: 338 5812

Email: stevenp@dsignaconcept.co.nz

Building work

Building consent number: 122095

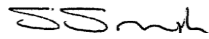
Consent description: Dwelling with attached garage and Masport I 3000 inbuilt logburner

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: 27/06/13



KIM Record Number

130627048751
BC122095.03

☒ Included with Submitted Documents

☒ **Required** - from Truss Manufacturer at least 10 working days prior to Pre-Roof Inspection

BC NO: 122095 WDC Rec 03.10

OWNER: D McNicholl
PHONE: 03 943 3393

AGENT: Jennian Homes
EMAIL: stevenp@dsignaconcept.com

DESIGNER: Ian MacDonald : Dsigna Concepts (2007) L
SITE: 55 Mandeville Park Dr, Mandeville North
BUILDER/PH:

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

DATE PROCESSED: 6/11/12

PROCESSED BY: S. Dale

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

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

PROJECT COMPLETE/ CCC APPROVED -

INSPECTOR'S SIGNATURE:

NAME: _____

DATE: _____

INSPECTION ISSUES

INSPECTION ISSUES NOTED DURING PROCESSING:

Roof plane bracing as per sht 10 of plans
 Skylight - Bedroom 2

ALTERNATIVE SOLUTION/S:

AMENDMENTS (AFTER CONSENT ISSUE):

DATE: 24/1/13. siting of dwelling. HC
 27/1/13 truss as built layout & fixings meet

ENGINEER TO INSPECT: Foundation Trenches prior to concrete pour -
 site notes to be available on site.

SURVEYOR REQUIRED (PEGGING / FFL / RECESSION PLANE): —

FIRE ENGINEER TO INSPECT: —

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

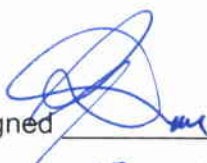
CONSTRUCTION REVIEWS REQUIRED TO SUPPORT PRODUCER STATEMENT DESIGN AND INSPECTION:

Engineers site report, PS 3 - wet area tanking, PS3 - Rockcote,
 Dec Cert, Logfire installers sheet, Pressure test, drainage as-built,

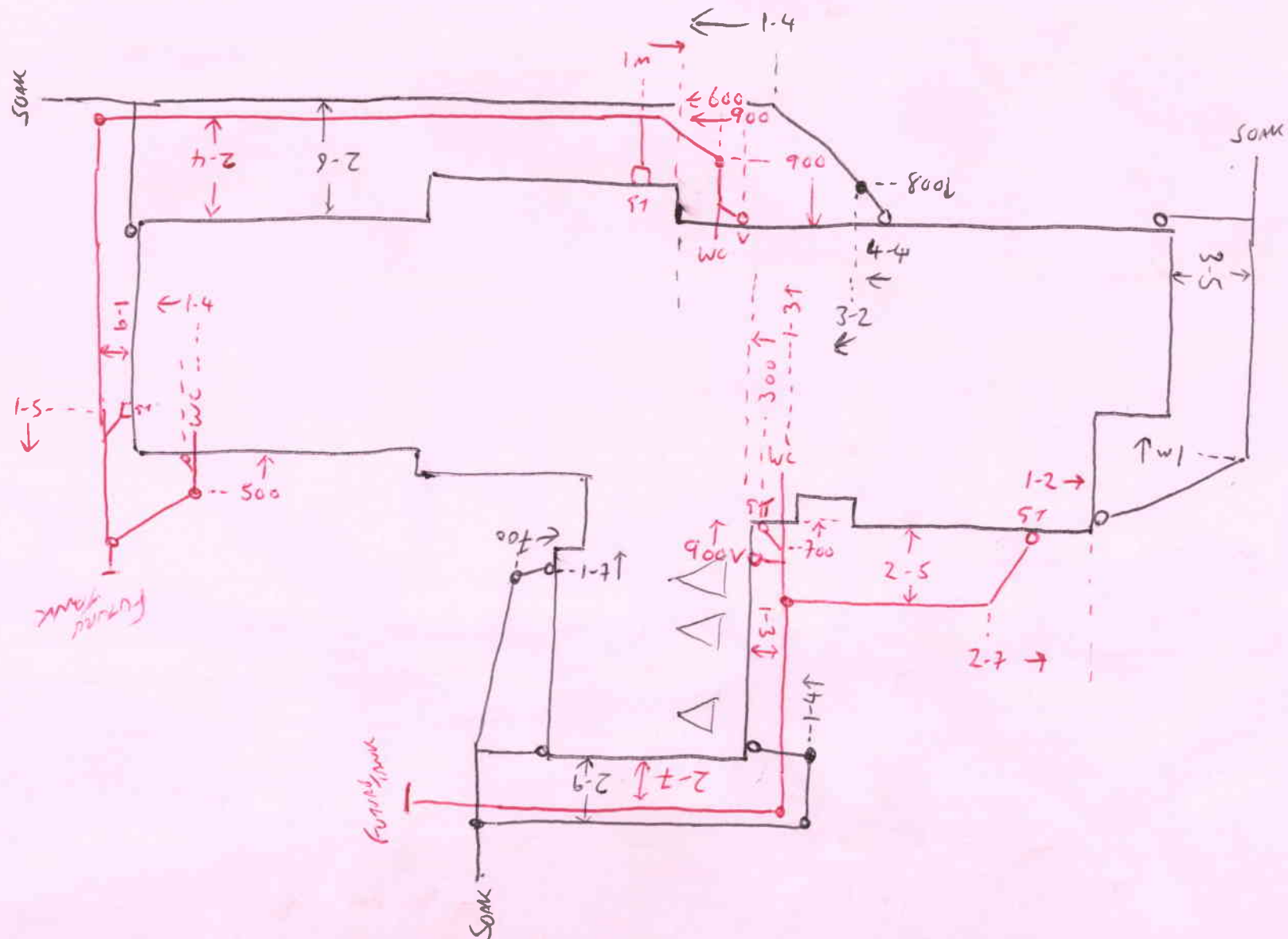
File Stripping Check Sheet

BC 122095

- ☒ 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 
12-7-13.

DRAINAGE PICKUP		Project Number
Address: <i>SS MANDARVILAS PARK DR</i>	Drainlayer: <i>MCKAY MURRAY</i>	<i>122095</i>
Date: <i>2/5/13</i>	Inspector: <i>L. BITHAM</i>	



24 June, 2013

D McNicoll
C/- Jennian Homes
PO Box 79009
Avonhead
Christchurch 8446

RE: Building Consent Application No. 122095
Dwelling with attached garage and Masport I 3000 inbuilt logburner
55 Mandeville Park Dr, Mandeville North
2175068109

Dear D McNicoll,

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 have the engineer supply his site report
- ✓ 2. Please have the engineer supply confirmation the roof strap bracing is not required to the diaphragm canopy as requested 12.02.13
- ✓ 3. Please have the Rockcoat applicator supply the producer statement
4. Please have the builder confirm in writing the leak to the flue has been repaired ✓ please have the installer of the effluent system supply a installation producer statement ✓
5. Please be aware there is \$10.20 outstanding on this BC

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



Sarah Smith
Building Consent Administration





WAIMAKARIRI
DISTRICT COUNCIL

File sign off for issue of a CCC

Job Number 122095 Final By Lee Auditor Sord

Project Description new dwelling with garage

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

Legend: Pass — N.A. Required

Audit items	
Form 6, signed and dated**	17.6.13 ✓
Final landscaping photos**	✓
Heating check sheet**	✓
Drainage Plan**	✓
Exterior Plaster PS3**	* ✓
Gas Certificate**	—
Electrical Certificate**	✓
Drain layers Reg No: <u>Mickey Moore.</u>	✓
Plumbers Reg No:	✓
Plumber pressure Test PS4** Consents from 1.11.07	✓
Tanking PS3**	✓
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**	
Inspection Notices**	
Consent fees owed	✓
CCC**	Inspection Notices**

Jobs on HOLD outstanding items (list)

- ① Aquatherm ps3
- ② Engineers ~~PS3~~ site notes.
- ③ Amended site plan
- ④ Confirmation from engineer for roof strip bracing 36568.
- ⑤ plaster ps3.
- ⑥ Confirm five leak repairs in writing
- ⑦ ps3 effluent system
- ⑧ One \$10.20



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) [Signature] Date 24.6.13



WAIMAKARIRI
DISTRICT COUNCIL

CODE COMPLIANCE CERTIFICATE APPLICATION

SECTION 92

BUILDING ACT 2004

Private Bag 1005, Rangiora 8254 | Ph (03) 313 6136, (03) 327 6834 | Fax (03) 313 4432 | www.waimakariri.govt.nz

THE BUILDING

(refer to your Rates Account for details)

1. Site Address:

27 McHugh's Road, Mandeville Park.
(Street / Road / Township)

Rapid Number:

(Applies to Rural Properties Only)

2. Legal description:

LOT: 27. DP/RS: 448/55.

Valuation Roll Number:

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

3. Building Name:

(eg. where buildings have Official Names)

4. Location of Building within Site:

(Only applicable to multi-development sites)

5. Number of Levels:

6. Level/Unit No:

7. Floor Area – Existing:

New:

Total:

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, approx. date is acceptable, e.g. 1920s or 1960-1970)

THE APPLICANT / OWNER

10. Owner's Name:

(Company or organisational name)

11. Contact Person:

(If Owner is not an Individual)

12. Mailing Address:

13. Street Address / Registered Office:

14. Phone Numbers:

Mobile: 021 562 983.

Daytime: 943 3393.

After Hours:

15. Fax:

16. Email:

17. Website:

18. The following evidence of ownership is attached to this application, eg:

☐ Certificate of Title and / or

☐ Sale and Purchase Agreement

AGENT / CONTACT

(Contact Details MUST be in New Zealand)

19. Name of Agent:

20. Contact Person:

21. Mailing/Billing Address:

22. Street Address / Registered Office:

23. Phone Numbers:

Mobile: 027 303 9619.

Daytime: 338 5812.

After Hours:

24. Fax:

25. Email:

26. Website:

27. ☐ Authorisation from Agent Attached.

(Authorisation from the owner confirming authority)

28. Note: The "Agent/Contact" 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.

APPLICATION

29. I request that you issue a Code Compliance Certificate for this work under section 95 of the Building Act 2004.

The Code Compliance Certificate should be sent to:

(Unless advised otherwise the Code Compliance Certificate will be sent to the Agent/Applicant)

Jennian Homes Canterbury 2012 Ltd.
PO Box 79009, Christchurch.

For Office Use Only

PEOPLE INVOLVED IN THIS PROJECT

30. All building work to be carried out under the this Building Consent was completed on: _____

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

BUILDER

Name: Mike Dorschot Reg. N°: 123590
 Address: PO Box 5624, Papanui
 Phone N°: 027 514 7455 Fax N°: ✓ Email: mikeobuilders@hotmail.com

DESIGNER(S)

Name: Ian - Dsigna Concepts Reg. N°: _____
 Address: 94 Gill Street, New Plymouth
 Phone N°: 06 769 5665 Fax N°: 06 769 5664 Email: ian@dsignaconcept

REGISTERED DRAINLAYER

Name: Mckay Moore Drainage - Mark Reg. N°: 17648
 Address: PO Box 85, Lincoln
 Phone N°: 027 327 5971 Fax N°: 325 3144 Email: mkmoores2010@hotmail.com

CRAFTSMAN PLUMBER

Name: Layne Watson Plumbing Reg. N°: 14478
 Address: PO Box 36-666, Merivale, Christchurch
 Phone N°: 385 2250 Fax N°: 021 466 989 Email: layne.watson@xtra.co.nz

CRAFTSMAN GASFITTER

Name: N/A Reg. N°: _____
 Address: _____
 Phone N°: _____ Fax N°: _____ Email: _____

REGISTERED ELECTRICIAN

Name: Precision Electrical Services Reg. N°: E5065
 Address: PO Box 35066, Christchurch 8640
 Phone N°: 021 329 188 Fax N°: 388 0672 Email: precisionelectricalservices@gmail.com

STRUCTURAL ENGINEER

Name: Jim Harding Reg. N°: _____
 Address: PO Box 41-033, Ferrymead Christchurch 8247
 Phone N°: 326 3132 Fax N°: ✓ Email: jim.hardingnz@gmail.com

OTHER CONTRACTOR - TYPE: _____

Name: _____ Reg. N°: _____
 Address: _____
 Phone N°: _____ Fax N°: _____ Email: _____

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

SPECIFIED SYSTEMS



ATTACHMENTS

33. The following documents are attached to this application:

- ☒ Certificates from the people who carried out the work.

You are required to supply certificates from ALL the trades involved in your project. Such certificates should include the following information:

- ⇒ Name, address, and contact phone numbers
- ⇒ Registration number (where applicable)
- ⇒ Building consent number
- ⇒ Project site address, and scope of work
- ⇒ Name of the tradesperson who carried out the work
- ⇒ A statement confirming which NZ Building Code Clauses that the work complies with and compliance with the Approved Building Consent Documents including any variations.
- ⇒ The Certificate must be signed and dated by the tradesperson responsible for the work

- ☒ Certificates that relate to the energy work (Electrical and Gasfitter).

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

APPLICATION INFORMATION

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.

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

Prime Building Compliance on (03) 311 8240 or 0800 724 2378

Fees

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

NOTES BY APPLICANT

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

All the relevant information on this form is required to be provided under the Building Act and Resource Management Act for the Environmental Services 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.

APPLICANT'S SIGNATURE

Signed by or for and on behalf of the Applicant

☐ Owner

☒ or Agent

Date:

17/6/13

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



NOTICE OF INSPECTION

Section 90 Building Act 2004

45180

Owners Name: Mr Nicholl

Local Auth. Consent No. 122095

Site Address: 51 Mandeville Rd

Officer: Evan Connor

To the Owner / Agent / Occupier Contractor

How Notified

☒ Notified Direct

☒ Left on Site

☐ Faxed

Please take note that on the 19 / 6 / 13 at 1200 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: fire

Project Description: Dwelling

Inspection Notes: passed items

insulation clean of flue.

Photos on file

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature [Signature]



NOTICE OF INSPECTION

Section 90 Building Act 2004

40716

Owners Name: Mc Nicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Officer: Mike Rowe

To the Owner ☒ Agent / Occupier / Contractor

How Notified

☐ Notified Direct ☒ Left on Site ☐ Faxed

Please take note that on the 18 / 6 / 13 at am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Re Final

Project Description: New Dwelling + Att Garage

Inspection Notes: Passed items:-

- insulation to skylight now secured in place with blue tape.
- open vent to drains beside bathroom now fitted
- purlin support now fitted beside glue
- Laundry tub now fixed to wall.
- hearth size now OK - 370mm from wall as per page 3 of installation.

Failed item:-

- ✗ insulation to Fire place to be secured in place Plus remove loose balls on Sirebox.

- confirm glue leak repaired

All work as per consent documents ☐ Yes ☒ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☒ Yes ☐ No

Signature Mike Rowe

5225

 Owners Name D. McNicholl

 Local Auth. Consent No. 122095

 Site Address 55, MANAWILLI PARK DRIVE

Prime Job No. _____

 Project Description DWS ATT GARAGE

 Officer LEW BISHOP

 To the Owner / Agent / Occupier / Contractor

 Phone No. 0274-345-120

 How Notified: ☒ Notified Direct ☐ Left on Site

 Please take note that on the 17 / 6 / 13 at 8.40 am pm this site was inspected pursuant to the Building Act 2004

COMPLIES YES NO

COMPLIES YES NO

COMPLIES YES NO

Internal

- | | |
|--|-------------------------------------|
| 1 Safety glass | ☒ |
| 2 Window restraints | ☒ |
| 3 Window identification <u>VANTAGE H</u> | ☒ |
| 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 | ☒ |

Plumbing

- | | |
|---|-------------------------------------|
| 1 HWC (Type & size) <u>3000 MARI</u> | ☒ |
| 2 Seismic restraint | ☒ |
| 3 Safe Tray | ☒ |
| 4 Tempering valve | ☒ |
| 5 HWC valving | ☒ |
| 6 Hot water drain points | ☒ |
| 7 Water Temperature <u>52</u> degrees | ☒ |
| 8 Header tank, restrained / tray / overflow / lagging | ☒ |
| 9 Floor waste gully water seal | ☒ |
| 10 Water Isolation Valve | ☒ |
| 1 Open Vent | ☒ |

Stairs & balcony

- | | |
|---------------------------------|-------------------------------------|
| 1 Treads & risers | ☒ |
| 2 Handrail - height & dimension | ☒ |
| 3 Hand rail bracket | ☒ |
| 4 Balcony / Handrail / Barrier | ☒ |
| 5 Overflow relief | ☒ |

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 | ☒ |

- | | |
|-----------------------------------|-------------------------------------|
| 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-Charge	No	☒

Signature _____

* Fix Batts @ WMC to Fireplaced * Complete Restraint to SKYLIGHT Batts * Repair LUM to Fire Flood Flashings.
 * Fix OPEN VENT @ Bathroom. * Fix support @ PURLIN CUT @ Fire Flood * HATCH size to be as Plans.
 * Fix Laundry tub to WMC.

NB: This is not a Code Compliance Certificate



NOTICE OF INSPECTION

Section 90 Building Act 2004

45286

Owners Name: D. McNicholl

Local Auth. Consent No. 122095

Site Address: 55 Manoeville Park Dr

Officer: LEE BITHAM

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct

☐ Left on Site

☐ Faxed

Please take note that on the 17 / 6 / 13 at 8.40 am this site was inspected pursuant to Building Act 2004

Inspection Type: Woodburner

Project Description: DWS ATT SAVED

Inspection Notes:

PASSED ITEMS

MASPORT 1300 INBUILT

UNIT FITTED INTO ZERO CLEARANCE BOX

FLUE MOUNTED ON RAILS

FLUE CLEARANCES OK

COIL FITTED

FLUE HEIGHT OK

* BOOT FLASHING ON SEAMER

NO MANTLE FITTED

WETBACK CONNECTED - OPEN VENTED

WET BACK ON COIL - VAPOR SUPPLIED WATER (RUNNING SEAMER)

FAIL ITEMS

* REPAIR LOOK TO FLASHING

* HEIGHT TO BS MIN 362

FROM WALL AS PLANS

All work as per consent documents ☐ Yes ☒ No

Amendments required ☐ Yes ☒ No

Reinspection Required NO CHANGE ☒ Yes ☐ No

Signature



NOTICE OF INSPECTION

Section 90 Building Act 2004

41535

Owners Name: HORNCASTLE

Local Auth. Consent No. 122230

Site Address: LOT 106

Officer: ROBERT BAILEY

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct

☐ Left on Site

☐ Faxed

Please take note that on the 14 / 6 / 13 at 11:30 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: DRAINAGE

Project Description: NEW HOUSE
PASSED

Inspection Notes: 100- WPC SEWER LAID AND CHIPPED IN MIN 1-80 FALL TO LATERAL ✓
90- S/W LAID AND CHIPPED IN, 100 FALL TO LATERAL POINT, MAIN LINE TO
BE FOUND AND CONNECTED ✓
AS LAID DRAIN. ✓
WATER TEST ON AND HOLDING ✓

OK TO BACK FILL.

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

Signature

Robert Bailey



NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D. Mc NICHOLL

Local Auth. Consent No. 122095 **42445**

Site Address: 55 MANOEVILLE PARK DRIVE

Officer: L. BITHRAY & P. BECK

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 24 / 5 / 13 at 10:15 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: WET AREA TANKING

Project Description: NEW DWELLING & ATTACHED GARAGE

Inspection Notes: PASSED ITEMS

Ardex used to ensuite shower. ✓

Bandage used in corners. ✓

PS 3 received. ✓

Waste sealed.

Bath horizontal surfaces done, Silicon to be done in corners.

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature



NOTICE OF INSPECTION

Section 90 Building Act 2004

39569

Owners Name: D. McNichol

Local Auth. Consent No. 122095

Site Address: 55 MANDORVILLE PARK DR

Officer: LEE BISHOP

To the Owner / Agent / Occupier Contractor

How Notified

☒ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 2 / 5 / 13 at 9:30 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: DRAINS

Project Description: DWS ATT GARAGE

Inspection Notes: PASSED ITEMS

DRAINS Laid + CHIPPED UP @ 1-100 Fm ✓
STORMWATER Laid TO SOAKHOLDS ✓
AS Laid PLAN DRAWN ✓
McKAY MOULD DRAINAGE (18976)

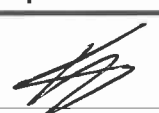
SITE INSTRUCTIONS

* TANK @ LATER DATE
* WATER TEST WHEN TANK FITTED

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature 



NOTICE OF INSPECTION

Section 90 Building Act 2004

41367

Owners Name: MC NICHOLL

Local Auth. Consent No. 122095

Site Address: 55 MANDEVILLE PARK DR

Officer: ROBERT BAILEY

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 26 / 4 / 13 at 9 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: PRESTOP

Project Description: NEW HOUSE

Inspection Notes: RAISED
900 STRIP IN OUT CEMENT.

BRACEWELL TO C2

Q3 IN PLACE

OK TO PROCEED

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

Signature [Signature]



NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: McNicholl

Local Auth. Consent No. 41712
122095

Site Address: 55 Mandeville Park Officer: Mike Rowe

To the Owner / Agent / Occupier / Contractor

How Notified

☐ Notified Direct

☒ Left on Site

☐ Faxed

Please take note that on the 17 / 4 / 13 at 5:30 am this site was inspected pursuant to Building Act 2004

Inspection Type: Pre Stop

Project Description: New Dwelling + Att Garage

Inspection Notes: Passed items:-

- Gib almost completed ✓
- standard 13mm gib to ceilings ✓
- " 10mm " " walls ✓
- Gib aqualine to enclose a bathroom walls & ceilings ✓
- tile shower fixed c 100mm ✓
- Gib brace elements fitted are fixed to Winstone spec. ✓

Failed items:-

- * 250mm strip not permitted in diaphragm ceiling
- * diaphragm ceiling to be fixed c 150mm to perimeter.
- * brace C2 to be braced
- * " Q3 not fitted

Do NOT plaster these areas.

All work as per consent documents ☐ Yes ☒ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☒ Yes ☐ No

Signature

Mike Rowe



NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Mc Nicholl

Local Auth. Consent No. 34641
122095

Site Address: 55 Mandeville Park Officer: Mike Rowe

To the Owner / Agent / Occupier / Contractor

How Notified

☐ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 22/3/13 at 3:45 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Pre line / Plumbing

Project Description: New Dwelling + Att Garage

Inspection Notes: Passed items:-

all Failed item as inspected at
9:00am have now been completed
except yet to fit metal corners
x3 to ensuite shower.

- check above @ pre stop

FILE COPY

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature

Mc Nicholl



NOTICE OF INSPECTION

Section 90 Building Act 2004

39699

Owners Name: McNicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park

Officer: Mike Rowe

To the Owner / Agent / Occupier / Contractor

How Notified

☐ Notified Direct

☒ Left on Site

☐ Faxed

Please take note that on the 22/3/13 at 3:00 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: AAC Pre Plaster

Project Description: New Dwelling + AH Garage

Inspection Notes: Passed items:-

- Plastering already started
- sighted PVC jamb glazing, vermin/ base strip sighted, reinforcing mesh to below windows ✓

* Provide PS3 for plastering ✓

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature



NOTICE OF INSPECTION

Section 90 Building Act 2004

39689

Owners Name: Mc Nicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Officer: Mike Rowe

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct

☐ Left on Site

☐ Faxed

Please take note that on the 22 / 3 / 13 at 9:00 am this site was inspected pursuant to Building Act 2004

Inspection Type: Pre line / Plumbing

Project Description: New Dwelling + Att Garage

Inspection Notes: Passed items:-

- insulation fitted, F/G pink batts ✓
- Foam seal to windows & door fitted ✓
- Fuse alarm plumbing fitted, foam lagged to garage ceiling ✓

Failed items:-

- ✓ * dwelling above kitchen pipes (bottom plate)
- ✓ * brace C2 can not be achieved due to data cabinet - change to BL1
- ✓ * to move plugs on braces NZ
- ✓ * to fit metal corners to tiled shower (x3)
- ✓ * meter box to be foam sealed.
- ✓ * move roof access - min 2m from outside wall
- ✓ * complete int. type 'F' Intel Sizing

* Yet to fit metal corners x3 to shower.

check & pre stop
passed 3.45 pm

All work as per consent documents ☐ Yes ☒ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☒ Yes ☐ No

Signature

Mike Rowe



NOTICE OF INSPECTION

Section 90 Building Act 2004

39432

Owners Name: D. McNICHOIL

Local Auth. Consent No. 122095

Site Address: 55, MANDEVILLE PARK DR

Officer: LEE BITHAM

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 11 / 3 / 13 at 8:50 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: CAVITY BATTENS LINER

Project Description: Ans ATT GARAGE

Inspection Notes: Passed Items

2mm Cavity Battens	✓
Continuous Top Batten Fitting	✓
Cavity Closure Fitting	✓
Change of cladding Fittings in Place	✓
Penetration Taped	✓
Moist Fittings Taped @ WRAP	✓

* SITE INSTRUCTIONS From AAC INSPECTION TO
By completion

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature [Signature]



NOTICE OF INSPECTION

Section 90 Building Act 2004

37570

Owners Name: McNicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Drive

Officer: Andrew Kendall

To the Owner / Agent / Occupier Contractor

How Notified

☒ Notified Direct ☒ Left on Site ☐ Faxed

Please take note that on the 08 / 03 / 13 at 10:41 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: AAC Panel post installed

Project Description: Dwelling

Inspection Notes: Passed Items:

- Window wind Zones: High. ✓
- Full length WNZ bars in position. ✓
- Vertical styrene battens in place. ✓
- Rockcote sill edge seal flashings in place. ✓
- Rockcote jamb edge sticky mesh flashings completed. ✓
- Horizontal top soffit styrene batten fitted. ✓
- Rockcote Integra panels being positioned around garage area at inspection time. ✓
- Vertical control joints being positioned within 5.4m c/s.

Site Instructions:

- Internal type F' lintel fixings to complete.
- Provide confirmation from Engineer that roof strap bracing not required to diaphragm canopy as requested 12-2-13.
- Back flashings yet to position between cladding junctions. ✓
- Garage door jambs yet to position & flash. ✓

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature



NOTICE OF INSPECTION

Section 90 Building Act 2004

37569

Owners Name: McNicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Dr.

Officer: Andrew Kendall

To the Owner / Agent / Occupier Contractor

How Notified

☒ Notified Direct

☒ Left on Site

☐ Faxed

Please take note that on the 08 / 03 / 13 at 10:21 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Building wrap

Project Description: Dwelling

Inspection Notes: Passed Items:

- Garage H' inlet straps in place. ✓
- Hold-down bolt in place at bottom plate where cut for power supply inlet. ✓
- Direct fixed Rondo ceiling battens in position. ✓
- Synthetic building wrap in place. ✓
- Horizontal polypropylene tape to wrap between dwangs. ✓
- Sill tape in openings as required with uPVC bottom corner soakers. ✓

All work as per consent documents ☒ Yes ☐ No

Amendments required ☐ Yes ☒ No

Reinspection Required ☐ Yes ☒ No

Signature [Signature]



NOTICE OF INSPECTION

Section 90 Building Act 2004

36868

Owners Name: D McNicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Drive
Mandeville North

Officer: Was Holland

To the Owner / Agent / Occupier / Contractor

How Notified

☐ Notified Direct ☒ Left on Site ☐ Faxed

Please take note that on the 12 / 2 / 13 at 9:00 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Structure / We Rest.

Project Description: Dwelling + Attached Garage. OK to roof/wrap

Inspection Notes: Passed Items.

- 90x45 H1.2 S68 framing, studs @ 600mm ✓
- DPC to plates, bottom plate anchors @ 900mm ✓
- H3 valley boards in place, ends supported. ✓
- 2x2 nails to truss/jacket ends + outriggers. ✓
- 70x45 H1.2 purlins @ 900mm - blue steel fixings (note - additional purlins in place @ 450mm to form roof safety plan). ✓
- Roof strap bracing generally complete. ✓
- Truss fixings in place. ✓
- Lintel fixings in place. Stud to top plate fixings in place. ✓
- Post/beam connections in place, ridge beam connections in place. - H3 7m ply diaphragm in place. ✓
- Handbracs in place, 6S hold downs in place as per plan. ✓

Site Instruction.

- ✓ Complete straps to Type H Garage lintel + fixings to internal Type F lintel.
- ✓ Fit bolt to plate cut out for power supply.
- ✓ bottom chord restraints to fit.

- Provide confirmation from engineer that roof strap bracing not required to diaphragm canopy

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

Signature

[Signature]



NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Mc Nicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Drive

Officer: Andrew Kendall

To the Owner / Agent / Occupier / Contractor

How Notified

☒ Notified Direct

☒ Left on Site

☐ Faxed

Please take note that on the 15 / 01 / 13 at 1 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Slab

Project Description: Dwelling

Inspection Notes: Passed Items :

- D.P.M to full slab area over sandblinding. ✓
- D12 floor starters within 450mm c/s. ✓
- Ductile SE615-500 mesh (batch: A00293) to full slab area on chairs. ✓
- Connolly free joint in position with D12 rods @ 300mm c/s & dense tape to one end as per sheet 20 of approved plans. ✓
- Supplementary corner bars in position. ✓
- Previous inspected waste pipes sleeved through slab. ✓
- No thickenings required as per plans. ✓

Site Instruction

- Amended site plan yet to be Council approved. (Council office confirms no amended site plan has been received!).
- ⇒ No concrete placement is to proceed until a formal amended site plan has been Council received & approved as requested 14-12-12 otherwise a Notice To Fix will be issued.

All work as per consent documents ☒ Yes ☐ No

Amendments required ☒ Yes ☐ No

Reinspection Required ☐ Yes ☒ No

Signature



NOTICE OF INSPECTION

Section 90 Building Act 2004

37851

Owners Name: D McNicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Park Drive Officer: Wes Holland
Mandeville North

To the Owner / Agent / Occupier / Contractor

How Notified

☒ ~~Notified Direct~~ ☒ Left on Site ☐ Faxed

Please take note that on the 11 / 1 / 13 at 8:30 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Compacted Hardfill

Project Description: Dwelling + Attached Garage.

Inspection Notes: Passed Items.

- Blinding completed - course fill removed. ✓
- waste pipes bedded in fines ✓
- fall in place to copper vent pipe. ✓
- Builder confirms amended site plan in council. for approval.

OK to continue

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

Signature [Signature]



NOTICE OF INSPECTION

Section 90 Building Act 2004

38333

Owners Name: M^c Nicholl

Local Auth. Consent No. 122095

Site Address: 55 Mandeville Pk.

Officer: Evan Connor

To the Owner / Agent / Occupier Contractor

How Notified

☐ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 7 / 1 / 12 at 10:45 am this site was inspected pursuant to Building Act 2004

Inspection Type: Compacted fill.

Project Description: Dug out garage.
Passed items.

Inspection Notes: Compacted AP 40 in place. Blinding laid
over top. ✓

Fail.

Areas of course fill to be covered by blinding.
Waste pipes to be bedded in fines.
Hot water relief to have continuous fall.

NOTE:

Amended siting plan to be
Stamped before pre pour
slab will be approved.

All work as per consent documents ☐ Yes ☒ No

Amendments required ☒ Yes ☐ No

Reinspection Required ☒ Yes ☐ No

Signature



NOTICE OF INSPECTION

Section 90 Building Act 2004

36551

Owners Name: McNicholl

Local Auth. Consent No. 122 095

Site Address: 55 Mandeville Park Dr

Officer: Mark McLaughlin

To the Owner / Agent / Occupier Contractor

How Notified

☒ Notified Direct

☒ Left on Site

☐ Faxed

Phoned

Please take note that on the 14 / 12 / 12 at 3:40 pm this site was inspected pursuant to Building Act 2004

Inspection Type: Foundation Pre pour

Project Description: New Dwelling

Inspection Notes: Passed Items:

- Lot 27 Located. 10m from Road Siting ok ✓
- trench dug 300 mm into ground to Stone type bearing ✓
boxed 300 mm wide approx 500 mm high
- Site Stripped
- 2 D16 Bars tied 450 cns D12 slab ties ✓
Reinforcing Secured in position ✓
- WC Rises in place + sleeved ✓

Site instructions:

- Engineer to inspect
- Waste sleeves to position
- Ammended Siting plan to be approved by WDC prior to pour. House shifted 3.5m to North boundary. now 11m to Dining Room. 20m to Garage South boundary

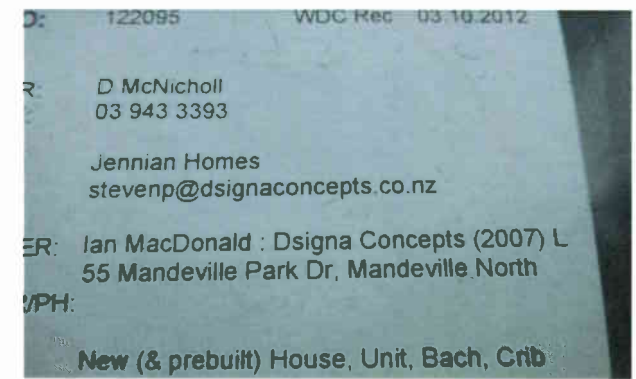
All work as per consent documents ☐ Yes ☒ No

Amendments required ☒ Yes ☐ No

Reinspection Required ☐ Yes ☒ No

Signature [Signature]





aquatherm

Firestop

fusiotherm®

climatherm®

aquatherm®

WARRANTY & LIFE TIME STATEMENT

aquatherm GmbH all pipes and fittings in accordance with German DIN confirming a 50 year guarantee of service life in accordance with the permissible working pressure / temperature of their technical product manuals. Within the scope of this aquatherm will supply replacement material pipe and fittings if damages are traceable to materials faults and defects.

Liability Warranty

Furthermore within the scope of this aquatherm GmbH gives a 10 year guarantee which compensates for material damage to third persons, for investigation, removal, replacement, acceptance, dismantling or laying bare of all defective goods.

aquatherm GmbH guarantee is conditional on

1. The fusion or joining of pipe and fittings using only aquatherm GmbH welding tools and devices.
2. Installation of pipe and fittings are certified aquatherm installers and adherence to aquatherm GmbH technical rules and guidelines for correct installation principles.

Limits of Liability

1. For bodily injury 15.000.000 Euro.
2. For property damage 15.000.000 Euro.

Please complete all information and fax to 09 570 7206

Installation Information

Street	29 McHugh's Rd
Suburb	Mandeville Park
City	Ohoka
Type of Installation	New House
Date of Completion	2-2-13

Installers Information

Company	Wayne Wabun Plumbing
Installers Name	7403
Installers aquatherm Number	Wayne
Signature	[Signature]

This warranty must be fully completed, signed and returned with the completed test sheet within three months of the completion of the project installation to the New Zealand agent.

aquatherm NZ Limited P.O. Box 99393, Newmarket, Auckland, New Zealand. Phone 09 570 7204 Fax 09 570 7206

aquatherm

firestop

fusiotherm®

climatherm®

aquatherm

Test Record fusiotherm pipe - installation principals

Installation Information

Street	29 McHugh's Rd
Suburb	Mandeville Park
City	Ohakea
Client	McNicholl
Type of Installation	New House
Type of pipe	FUSIO

Pipe Lengths

16 mm		m	75 mm		m
20 mm	96	m	90 mm		m
25 mm	52	m	110 mm		m
32 mm		m	125 mm		m
40 mm		m	160 mm		m
50 mm		m	200 mm		m
63 mm		m	250 mm		m

Time testing started	1 PM	Time testing finished	1:35
Highest point above test point	2m	Test period	
Date of Completion	2-2-13		

Testing procedure NZ Jan 2001 (Test pressure - 20 bar)

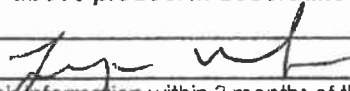
1. Test pressure 20 bar 10 minutes
2. Unpressurise for 1 minute.
3. Test pressure 20 bar 5 minutes.
4. Unpressure for 1 minute.
5. Test pressure 20 bar for 5 minutes.
6. unpressurise.

This test is imperative to have movement during test period. Tight clips or damaged pipes in framework will result in and incomplete test which will make the warranty invalid.

Return preliminary test:

The test is to be conducted as a continuous test at 20 bar with the six steps noted above. The system **MUST** be pressurized **THREE TIMES** with a minimum rest of one minute between repressurising. If leaking occurs, please replace the part and restart the testing procedure. The test is complete and acceptable when the above has been undertaken and no leaks are present. **Finally, complete the test sheet and fax or post to aquatherm NZ.**

Installers Information

Company	Layne Watson Plumbing Ltd
Installers Name	Layne
Installers aquatherm Number	7403
I declare that I have installed the above product in accordance with aquatherm specifications with no brand mixing	
Signature	

aquatherm NZ must receive this information within 3 months of the installation for the warranty to be valid. Please consult with your local area council as they may require a copy of the test results for their records.

aquatherm NZ Limited P.O. Box 99393, Newmarket, Auckland, New Zealand. Phone 09 570 7204 Fax 09 570 7206

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:	27 McHugh's Road
Suburb:	Alandeville Park
Town/City:	OHOKA
Postcode	

THE PROJECT
Building consent number # 122095

THE OWNER(S)	
Name(s):	Devy McNicholl
Mailing address:	9 Island Place
Suburb:	Burwood
Town/City	Christchurch
Phone number	021 562 983
PO Box/Private Bag:	
Email address	devy.mnicholl@tollgroup.com
Postcode	

RECORD OF WORKER'S 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, outflow or cavity) ☐		☐ Carried out ☐ Supervised
Wall cladding or wall cladding system ☐		☐ Carried out ☐ Supervised
Waterproofing ☐		☐ Carried out ☐ Supervised
Other ☐		☐ Carried out ☐ Supervised

ISSUED BY

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

Name: MICHAEL CORSCOTT

LBP number BP123590

Class(es) licensed in: CARPENTRY

Plumbers, Gasfitters and Drainlayers registration number (if applicable):

Mailing address (if different from below):

Street address/Registered office: 37 DUNCAN ST, REDWOOD

Suburb: PAPARUA

Town/City: CHRISTCHURCH

PO Box/Private Bag: PO Box 5625

Postcode: 8542

Phone number:

Mobile: 0275147455

After hours:

Fax:

Email address: michael@redwood.co.nz

Website:

DECLARATION

I MICHAEL CORSCOTT carried out or supervised the restricted building work recorded on this form

Signature: 

Date: 31/5/13



Electrical Certificate of Compliance

No. 3965798

for a low voltage installation if prescribed electrical work has been done on any part of it and the prescribed electrical work involved placing, replacing, or repositioning conductors or fittings attached to conductors.

No. of attachments

ICP 0000390 129 MPF 30
To be completed whether or not an inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer

Phone:

Address of installation

27 Manleville Park Drive, Manleville

Postal address of customer (if not as above)

DECLARATION OF CONFORMITY (Please tick (✓) appropriate boxes)

In accordance with Regulation 58 of the Electricity (Safety) Regulations 2010, the design of the installation or part of the installation to which this certificate applies

- (a) complies with either Part 2 of AS/NZS 3000:2007 ☒ or Part 1 of AS/NZS3000:2007 and Regulation 59 ☐ and
 (b) the supply system of the installation or part of the installation to which this certificate applies is
 230V/400 V MEN ☒ or attached other system ☐

WORK DETAILS

No. of lighting outlets

No. of ranges

Please tick (✓) as appropriate where work includes:

No. of socket outlets

No. of water heaters

Mains

Main earthing system

Was any installation work carried out by the homeowner?

Yes ☒ No ☐

MEN Switchboard closest to point of supply

Electric lines

Description of work carried out (If necessary attach any pages with work done)

DIG a CAT MAINS / 7.5M OF 10M B/EARTH.

CERTIFICATION OF WORK (Please tick (✓) appropriate boxes)

I certify that the completed installation or part of the installation to which this certificate applies

- ☒ has been installed in accordance with the design detailed in the Declaration of Conformity section above
☐ has had tests which are required by the Electricity (Safety) Regulations 2010 satisfactorily completed
☐ has an earthing system that is correctly rated
☐ contains fittings which are safe to connect to a power supply
☒ is safe to connect to a power supply

ELECTRICAL WORKER DETAILS

Name

TOM McDONALD

Registration No.

LM 2004

Company

ALL SERVICES

Contact Ph No.

021 911109

Signature

T. McDonald

Date

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

☒ Mains work (mains, MEN switchboards closest to the point of supply, or main earthing systems)

☐ Attached other

☒ Work carried out in accordance with Part 1 of AS/NZS 3000:2007

I certify that the items identified above are electrically safe and that the inspection has been carried out in accordance with the Electricity (Safety) Regulations 2010.

Name

Mark Trappe

Registration No.

I254 537

Signature

Mark Trappe

Date

14 6 13

Contact Ph No.

021 525 806

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

Producer Statement

WATERPROOFING MEMBRANE

Building Company: Tennian Homes
Client Name: McNicholl Residence
Address: 27 McHughes Rd
Mandville Park
Chocka
B C Number: # 122095

Waterproofing Contractor(s): Mike Scott **Ph:** 027 68516157
Applicator Number: # 924
Ph: _____
Applicator Number: _____

I confirm that I am an experienced registered applicator of waterproofing wet areas prior to the installation of ceramic tiles or vinyl – internal or external.

I am a registered applicator for the following Ardex Products WPM 155 applied membrane.

Membrane System: Ardex New Zealand Limited – WPM155

Warranty Number: NZAMC - 0050010

Area Laid m2: Approx 11m2
Areas applied: Band breaker tape applied to
all corners followed by x 2 coats
of membrane to double shower
walls & base & bath

I can confirm that the WPM 155 has been installed in the above project in accordance with the Ardex New Zealand Limited Specifications, and meets the requirements of the AS/NZ 3740 – 2004 & AS/NZ 4858, quality system standard ISO 9001, prior to the installation of ceramic tiles.

15 Year Durability Confirmed: All meet B2, E2, & E3 of the New Zealand Building Code.

Signed: [Signature] **Date:** 4/6/13



WAIMAKARIRI
DISTRICT COUNCIL

Private Bag 1005, Rangiora 7440
Ph 03 311 8900, 03 327 8834 Fax 03 313 4432
www.waimakariri.govt.nz

PRODUCER STATEMENT PIPEWORK TESTING

BC No. # 122095.

Issued by (Plumber):

Layne Watson Plumbing

For (Owner):

Doug McNickell

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

At (address):

*27 McHugh's Road.
Mandeville Park, Ohoka.*

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 7543).

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:

Layne Watson

Date: *30-5-13*

Registration Number

14478

Company Name:

*Layne Watson
Plumbing.*



Electrical Certificate of Compliance

for a low voltage installation if prescribed electrical work has been done on any part of it and the prescribed electrical work involved placing, replacing, or repositioning conductors or fittings attached to conductors.

No. 3985517

No. of attachments

To be completed whether or not an inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer

McNicholl

Phone:

Address of installation

27 Manseville Park. (Manseville)

Postal address of customer (if not as above)

DECLARATION OF CONFORMITY (Please tick (✓) appropriate boxes)

In accordance with Regulation 58 of the Electricity (Safety) Regulations 2010, the design of the installation or part of the installation to which this certificate applies

- (a) complies with either Part 2 of AS/NZS 3000:2007 ☐ or Part 1 of AS/NZS 3000:2007 and Regulation 59 ☒ and
 (b) the supply system of the installation or part of the installation to which this certificate applies is
 230V/400 V MEN ☒ or attached other system ☐

WORK DETAILS

No. of lighting outlets

No. of ranges

Please tick (✓) as appropriate where work includes:

No. of socket outlets

No. of water heaters

Mains

Main earthing sys

Was any installation work carried out by the homeowner?

Yes ☒ No ☐☒ MEN Switchboard closest to point of supply☐ Electric lines

Description of work carried out (if necessary attach any pages with work done)

Install AS/NZS 3000:2007
 20amp C/B on S/BOARD - Isolator on UNDER UNIT.
 2-5m² TNS Mains

CERTIFICATION OF WORK (Please tick (✓) appropriate boxes)

I certify that the completed installation or part of the installation to which this certificate applies

- ☒ has been installed in accordance with the design detailed in the Declaration of Conformity section above
☒ has had tests which are required by the Electricity (Safety) Regulations 2010 satisfactorily completed
☒ has an earthing system that is correctly rated
☒ contains fittings which are safe to connect to a power supply
☒ is safe to connect to a power supply

ELECTRICAL WORKER DETAILS

Name

C. Graham FUEKE

Company

EZI BREEZE LTD

Signature

Registration No.

02936

Contact Ph No.

3522780

Date

10.6.13

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

- ☐ Mains work (mains, MEN switchboards closest to the point of supply, or main earthing systems) ☐ Attached other ☐ Work carried out in accordance with Part 1 of AS/NZS 3000:2007

I certify that the items identified above are electrically safe and that the inspection has been carried out in accordance with the Electricity (Safety) Regulations 2010.

Name

Registration No.

Signature

Date

Contact Ph No.

Producer Statement Construction PS3

For guidance on how to use this template, please refer to Information Sheet B-388 – Requirements for the Acceptance of PS3 Producer Statements and Construction Statements which is available from our website

Companies Letterhead or Author's Name: **Mike Watson of Canterbury Log Burners**

Tick applicable Contractor for:

- | | | |
|---|---|--|
| ☐ Building | ☐ Emergency Lighting | ☐ Cladding |
| ☐ Waterproof Membranes | ☐ Drainer | ☐ Fire Alarm |
| ☐ Mechanical (HVAC) | ☐ Solar Heating | ☐ Lift / Escalator (delete one) |
| ✓ ☐ Other (Specify) Installation of a solid fuel/wood burner: | | |

Issued by: to Waimakariri District Council.

SECTION 1: OWNER

Owner: **McNicholl Residence**

Project Address: **27 Mandeville Park Drive**

Description of Building Work: **Installation of a solid fuel wood burner**

Scope of work covered by statement: **Installation of a solid fuel wood burner**

System / Product used (if applicable): **Masport i3000 zero clearance wetback Log Burner Serial # 38802**

I (Constructor): **Mike Watson – Canterbury Log Burners** have been engaged by **Jennian Homes** (building consent applicant) to construct:

☐ All ☒ Part only

As specified in the attached particulars of Building Consent Number: and its attached conditions and am satisfied on reasonable grounds that the building work specified above has been completed to the extent required by that Building Consent and complies with the Building Consent.

Specific reference to the Building Code:

What clauses of the Building Code are covered by the Producer Statement?

(Circle applicable clauses)

B1	B2	C1	C2	C3	C4	D1	D2	E1	E2
E3	F1	F2	F3	F4	F5	F6	F7	F8	G1
G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
G12	G13	G14	G15	H1					

I understand that this Producer Statement, if accepted, will be relied upon by ~~Christchurch City~~ Council for the purpose of establishing compliance with the Building Consent.

SECTION 2: CONSTRUCTOR'S DETAILS

Name: **Mike Watson** Registration Number: **2042** or N/A ☐

Qualifications / Experience: **Qualified solid fuel heating installer**

Address: **Unit 4, 97a Sawyers Arms Road**

Phone Number: HOME: WORK: **0800 564 287** MOBILE: **021 606608**

Fax: **03 352 9089** Email: **logburner@gmail.com**

Signature: 

Date: **21/03/2013**

ELECTRICAL WORKERS
REGISTRATION BOARD

Safety • Competency

Electrical Certificate of Compliance

No. 3982878

for a low voltage installation if prescribed electrical work has been done on any part of it and the prescribed electrical work involved placing, replacing, or repositioning conductors or fittings attached to conductors.

No. of attachments

ICP 0000 590129 MPK3C

To be completed whether or not an inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer

McNeill

Phone:

Address of installation

27 Mandeville Park Drive, Mandeville

Postal address of customer (if not as above)

DECLARATION OF CONFORMITY (Please tick (✓) appropriate boxes)

In accordance with Regulation 58 of the Electricity (Safety) Regulations 2010, the design of the installation or part of the installation to which this certificate applies

- (a) complies with either Part 2 of AS/NZS 3000:2007 ☒ or Part 1 of AS/NZS 3000:2007 and Regulation 59 ☐ and
 (b) the supply system of the installation or part of the installation to which this certificate applies is
 230V/400 V MEN ☒ or attached other system ☐

WORK DETAILS

68 No. of lighting outlets

No. of ranges

Please tick (✓) as appropriate where work includes:

38 No. of socket outlets

No. of water heaters

☒ Mains☒ Main earthing system

Was any installation work carried out by the homeowner?

Yes ☒ No☒ MEN Switchboard closest to point of supply

Electric lines

Description of work carried out (If necessary attach any pages with work done)

New house power, lighting, water, 2x4tr over hob.

Connect to underground mains & buried earth installed by All Services Ltd.

Heat pump wires & terminated by all services

CERTIFICATION OF WORK (Please tick (✓) appropriate boxes)

I certify that the completed installation or part of the installation to which this certificate applies

- ☒ has been installed in accordance with the design detailed in the Declaration of Conformity section above
☐ has had tests which are required by the Electricity (Safety) Regulations 2010 satisfactorily completed
☐ has an earthing system that is correctly rated
☐ contains fittings which are safe to connect to a power supply
☒ is safe to connect to a power supply

Pls. fit sign on house at service entry. Tks. Max

ELECTRICAL WORKER DETAILS

Name

D Ruffles

Registration No.

E5065

Company

Precision Electrical Services

Contact Ph No.

021 379188

Signature

Date

4/6/13

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

☐ Mains work (mains, MEN switchboards closest to the point of supply, or main earthing systems)☐ Attached other☐ Work carried out in accordance with Part 1 of AS/NZS 3000:2007

I certify that the items identified above are electrically safe and that the inspection has been carried out in accordance with the Electricity (Safety) Regulations 2010.

Name

Max Truempel

Registration No.

RW 409

RN 234

I254537

Signature

M.T. J.

Date

RB 409

WN 252

6 13

Contact Ph No.

BW 405

BN 214

021 51588

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



Producer Statement

WATERPROOFING MEMBRANE

Job Details

Building Company: Tennison Homes
Client Name: McNicholl
Address: 27 Mandeville Park dr

B C Number: 122 095

Applicator Details

Waterproofing Contractor(s): Michael D Scott Ph: 027 6896157
Applicator Number: 924
 Ph:
Applicator Number:

I confirm that I am an experienced registered applicator of waterproofing wet areas prior to the installation of ceramic tiles or vinyl – internal or external.

Product Details

I am a registered applicator for the following Ardex Products WPM 155 applied membrane.

Membrane System: Ardex New Zealand Limited – WPM155

Warranty Number: NZAMC - 0050010

Area Laid m2: ~~12~~ 12m²

Areas applied: shower base, walls to 2m high
around bath,
reinforced tape to joints
in shower.

I can confirm that the WPM 155 has been installed in the above project in accordance with the Ardex New Zealand Limited Specifications, and meets the requirements of the AS/NZ 3740 – 2004 & AS/NZ 4858, quality system standard ISO 9001, prior to the installation of ceramic tiles.

15 Year Durability Confirmed: All meet B2, E2, & E3 of the New Zealand Building Code.

Signed: [Signature] Date: 22.5.2013



Undertile PU Acrylic Hybrid Membrane

Modified Polyurethane Waterproof Membrane

Can be tiled over – excellent adhesion with ARDEX tile adhesives

Environmentally friendly – solvent free, suitable for confined areas

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

Undertile PU Acrylic Hybrid Membrane

Modified Polyurethane Waterproof Membrane

PRODUCT DESCRIPTION

Ardex WPM 155 (Undertile PU Acrylic Hybrid Membrane) developed for high performance under-tile waterproofing.

- Tough flexible film
- UV stable when left exposed
- Long shelf life
- Environmentally friendly – solvent free – suitable for confined areas
- Can be tiled over – good adhesion with Ardex tile adhesives
- Excellent adhesion to a wide range of substrates
- Fast drying

RANGE OF APPLICATIONS

For commercial and residential internal/external wet areas, balconies, decks and other areas that will be tiled or otherwise protected from regular foot traffic. Also suitable for undertile immersed conditions.

SUBSTRATES

Concrete

Cured for minimum 28 days, wet concrete should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 at coverage rate of 3.0m² per litre.

Renders and Screeds

Cured for min 7 days. Wet render should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 at coverage rate of 3.0m² per litre and allowed to cure overnight.

Fibre cement sheets

Wet area grades only.

Plasterboard

Wet area grades only.

Plywood

Structural plywood (PAA branded) or marine grade.

PRIMERS

Ardex WPM 155 is suitable to use over Ardex WPM 300, Ardex WPM 350, Ardex WPM 270, Ardex WPM 265 or Ardex Multiprime.

APPLICATION

Ardex WPM 155 should be thoroughly mixed to a uniform mix and ensure the coating is applied evenly at recommended coverage rates. Mobile joints should be reinforced using Deckweb and the membrane must be lapped to intrusions such as waste outlets in accordance with the instructions. Apply Ardex WPM 155 by brush or roller. A medium nap (8-12mm pile) or 50mm long bristle paint brush is recommended.

COVERAGE

This will vary with the porosity of the substrates. Two coats are recommended to get optimum performance.

For floors

A dry film thickness of 1.0mm is required. A 20kg unit (15 Litres) will cover approximately 8m² (based on two coats).

For walls

A dry film thickness of 0.5mm is required. A 20kg unit (15 Litres) will cover approximately 16m².

DRYING TIME

Recoat time is 1-2 hours in between first and second coats. Drying time on flat surfaces under standard conditions is 4 hours. However, dry through time will be slowest in areas where Ardex WPM 155 is applied over silicone bond breaker, or is reinforced. Make sure these areas are dry before tiling. In some cases, this can vary from 24 hours to 48 hours.

Full cure of the product is 3 days after application at 23°C. Drying times will vary depending on humidity, surface temperature and porosity of substrates.

PACKAGING

15L (20kg).

SHELF LIFE

12 months when stored in the original unopened packaging in a dry place at 23°C.

CLEANING

Wash hands, brushes, rollers with water while product is still fresh. For cured material, use mineral turpentine.

SAFETY PRECAUTIONS

All surfaces must be structurally sound, dry and free from all surface contaminants.

Do not use Ardex WPM 155 under the following conditions:

- Areas subject to negative hydrostatic pressure or rising damp.
- Wet substrates or green screeds/concrete – need to be sealed with one coat Ardex WPM 300 as described earlier.
- Surface temperature is below 10°C or greater than 35°C.

SAFETY DATA

Ardex WPM 155 is a non-hazardous and non-dangerous product. Wear protective clothing when handling. Wash off splashes with clean water. In case of eye contamination, rinse thoroughly with clean water. If irritation persists, seek medical advice.

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

QUALITY PRODUCT

Ardex WPM 155 is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001.

TECHNICAL PERFORMANCE DATA

Properties of Liquid material

Appearance	Blush Grey
Viscosity (6/20/25°C)	
AS 1580:1990	30,000 cps
Density (kg/L)	
AS 4459:1999	1.36
Solids, by mass	
AS1580:1992	65-68%
Volume solids	
AS1580-	53%

Properties of the Cured membrane

tensile Strength,	
MPa AS 1145	1.2 MPa
% Elongation	>350%
Shore A Hardness	65-75
Water Vapor Transmission	
(AS4858/ASTmE96)	1.2g/24hrs.m ²

Sandra Prisk

From: Julia Russell <Julia.Russell@jennian.co.nz>
Sent: Thursday, 27 June 2013 10:34 a.m.
To: Sandra Prisk
Subject: FW: Engineer Notes - McNicholl
Attachments: Engineer Notes.pdf; 27 Mandeville Park Drive Leak Repair Confirmation.pdf; Written Letter-McKay Moore Drainage.pdf; PS-Rockcoat.pdf

Importance: High

Hi Sandra,

Please see the below email I have recently sent through to Sarah..

Sarah spoke to Mark Moore from McKay Moore Drainage this morning and explained written confirmation (as attached) would be sufficient.

Please find attached the Exterior Cladding Producer Statement..

Also, the \$10.20 outstanding will be paid today.

Kind Regards

JULIA RUSSELL Administration Assistant

T 03 338 5812
julia.russell@jennian.co.nz
jennian.co.nz
Jennian Homes Canterbury (2012)
Ltd 6 Moncur Place
P O Box 79009, Christchurch 8446



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...working together to rebuild Canterbury*

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From: Julia Russell
Sent: Thursday, 27 June 2013 10:13 a.m.

PRODUCER STATEMENT SUPPLIED BY MCKAY
MOORE DRAINAGE LTD

**CONSTRUCTOR: MARK MOORE HAS INSTALLED
Z54 OASIS WDC SEPTIC TANK AT 55 MANDEVILLE
PARK DRIVE, MANDEVILLE PARK WITH A 50MM
PUMP LINE OUT TO BOUNDARY BOX**

REGISTRATION #: 17648

**IF YOU HAVE PROBLEMS PLEASE DO NOT
HESITATE TO CONTACT MARK MOORE ON 027
327 5971**

KIND REGARDS

MARK MOORE





Properly Plastered

Glenn Munro
43A Bowenvale Avenue
Cashmere
Christchurch City
p: 03 337 5255
f: 03 337 5263
m: 021 221 0282
glenn@properlyplastered.co.nz

PRODUCER / CONSTRUCTION STATEMENT EXTERNAL CLADDING

Job Number : 29715
Site Address : 27 Mandeville Park, , Rangiora
Consent No :
Building Owner : McNicholl Residence
Builder : Jennlan Homes
Registered Plasterer : Properly Plastered
Systems Used : Integra LWC Facade System,
Substrates Used : Integra AAC Panel,
Textures Used : Fast Float Tasman,
Colours Used : MALTA (R)
Start Date : 01-Mar-2013
End Date : 15-Mar-2013
Clauses and Further
Information :

We the above firm have completed the above work in accordance with NZBC E2/AS1, B2/AS1 , BRANZ Appraisal 681 and the Resene Construction Systems Specifications.

Signed by Properly Plastered
Date: 15/04/2013



License Number
BP104266

Sandra Prisk

From: Sarah Smith
Sent: Wednesday, 26 June 2013 4:35 p.m.
To: Sandra Prisk
Subject: FW: Engineer Notes - McNicholl
Attachments: Engineer Notes.pdf; 27 Mandeville Park Drive Leak Repair Confirmation.pdf
Importance: High

From: Julia Russell [<mailto:Julia.Russell@jennian.co.nz>]
Sent: Wednesday, 26 June 2013 9:44 a.m.
To: Sarah Smith
Subject: FW: Engineer Notes - McNicholl
Importance: High

Hi Sarah,

Following the below email in regards to the McNicholl Job..
 Please find attached the Written Confirmation from the Fire Installer that the leak in the flue has been repaired.

I am just awaiting the Effluent System Producer Statement and will send this through ASAP

Kind Regards ☺

JULIA RUSSELL Administration Assistant

T 03 338 5812
julia.russell@jennian.co.nz
 jennian.co.nz
 Jennian Homes Canterbury (2012)
 Ltd 6 Moncur Place
 P O Box 79009, Christchurch 8446



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From: Julia Russell
Sent: Tuesday, 25 June 2013 4:12 p.m.
To: Sarah Smith (sarah.smith@wmk.govt.nz)
Subject: Engineer Notes - McNicholl
Importance: High

Hi Sarah,

Please see attached the Engineer Site Report and Engineer Confirmation of Roof Strap Bracing for the McNicholl Job
.. BC# 122095

Kind Regards

JULIA RUSSELL Administration Assistant

T 03 338 5812
julia.russell@jennian.co.nz
jennian.co.nz
Jennian Homes Canterbury (2012)
Ltd 6 Moncur Place
P O Box 79009, Christchurch 8446



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Log Burner Installation and Servicing

0800 LOGBURNER (0800 564 287)

26/06/2013

**Jennian Homes
6 Moncur Place
Addington
Christchurch 8024
PO Box 79009, Avonhead, Christchurch 8446**

Dear Julia,

On 21/03/2013, Canterbury Log Burners installed a Masport i3000 zero clearance wetback (serial # 38802) at 27 Mandeville Park Drive, Rangiora.

We have since been advised that the log burner installation was leaking and would like to confirm we have now returned to the property (on 25/06/2013) and have repaired the leak.

Many thanks

**Mike Watson
Canterbury Log Burners**

Sandra Prisk

From: Sarah Smith
Sent: Tuesday, 25 June 2013 5:41 p.m.
To: Sandra Prisk
Subject: FW: Engineer Notes - McNicholl
Attachments: Engineer Notes.pdf

Importance: High

ALSO NEED TO FOLLOW UP WITH JULIA ANYTHING ELSE STILL REQUIRED

THANKS

From: Julia Russell [<mailto:Julia.Russell@jennian.co.nz>]
Sent: Tuesday, 25 June 2013 4:12 p.m.
To: Sarah Smith
Subject: Engineer Notes - McNicholl
Importance: High

Hi Sarah,

Please see attached the Engineer Site Report and Engineer Confirmation of Roof Strap Bracing for the McNicholl Job .. BC# 122095

Kind Regards

JULIA RUSSELL Administration Assistant

T 03 338 5812
julia.russell@jennian.co.nz
 jennian.co.nz
 Jennian Homes Canterbury (2012)
 Ltd 6 Moncur Place
 P O Box 79009, Christchurch 8446



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Jim Harding

From: Jim Harding <jimhardingnz@gmail.com>
Sent: Monday, 17 December 2012 11:00 p.m.
To: 'Mike.Goodin@jennian.co.nz'
Subject: McNicholl foundations

Hi Mike,

Thank you for the photos.

The images appear to show gravel and silty sand at the base of the trenches, as you describe. This is consistent with the findings of the soil tests we carried out on the site, and thus it is reasonable to conclude that the ground conditions comply with the requirements of good ground as defined by NZS 3604.

On that basis, subject to the Councils approval, I believe it is satisfactory to proceed with pouring concrete without a specific inspection from the Engineer.

Best regards,

Jim

Jim Harding Consulting Engineer Ltd
P O Box 41-033
Christchurch
(027) 2269 126

Jim Harding

From: Jim Harding <jimhardingnz@gmail.com>
Sent: Friday, 15 March 2013 12:05 p.m.
To: mikeobuilders@hotmail.co.nz
Subject: McNicoll House - Mandeville Park

Dear Mike,

I confirm my verbal advice that provided the specified ply diaphragm roof plane lining has been fixed in accordance with NZS 3604 for structural diaphragms, then no additional strap bracing is required.

Best regards,

Jim

Jim Harding Consulting Engineer Ltd
P O Box 41-033
Christchurch
(027) 2269 126

Memorandum from licensed building practitioner:**Record of building work - Section 88, Building Act 2004**

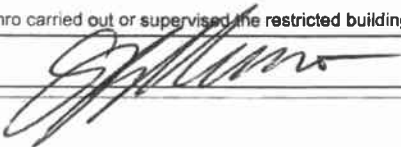
THE BUILDING	
Street address: 27 Mandeville Park - 27 McHugh's Road	
Suburb: Ohoka.	
Town / City: Rangiora	Postcode:

THE BUILDING
Building consent number: 122095

THE OWNERS	
Name(s): Doug McNicholl	
Mailing address: 9 Istana Place,	
Suburb: Burwood	P O Box/Private Bag:
Town / City: CHCH	Postcode:
Phone number: 021 562 983	Email address:

RECORD OF WORK THAT IS RESTRICTED BUILDING WORK	
EXTERNAL MOISTURE MANAGEMENT SYSTEMS	
Wall cladding or wall cladding system:	Integra LWC Facade System, ☒ Carried Out ☒ Supervised

ISSUED BY	
Name and contact details of the licensed building practitioner who is licensed to carry out or supervise restricted building work	
Name: Glenn Munro	LBP number: BP104266
Class(es) licensed in: Exterior Plastering (PPCS)	
Mailing address(if different from below):	
Street address / Registered office: 43A Bowenvale Avenue	
Suburb: Cashmere	Town / City: Christchurch City
PO Box / Private Bag:	Postcode:
Phone number: 03 337 5255	Mobile: 021 221 0282
After hours:	Fax: 03 337 5263
Email address: glenn@properlyplastered.co.nz	Website:

DECLARATION	
I Glenn Munro carried out or supervised the restricted building work recorded on this form.	
Signature: 	Date: 27-05-13



Installation Certificate

www.nzhha.co.nz

Heating Appliance Installation Certificate

This Installation Certificate Number 16087 is issued by

Installer Name: Mike Watson Reg No: 2042

being a registered Solid Fuel Appliance Installation Technician with the NZHHA, for the installation of:

Brand: Masport Model: 13000 Z/L Serial No: 38802

Dealer: South Island Hardware

Customer: Mc Nicholl

Address: 27 Mandeville Park Drive

The above heating appliance has been installed as per the manufacturer's specifications and in accordance with the industry standards.

Installer Signature: [Signature] Date: 21/03/13

CLIENT COPY

FINAL LAYOUT

CARTERS
MANUFACTURING

 21 Broughs Rd
 Christchurch
 Ph (03) 359 2731

 JOB No **CD93658**

 Client: Jennian Homes Canterbury
 Job Name: McNicholl Residence
 Address: 27 Mandeville Park Dr Rangiora

Consent #: 122095

Pitch: 25

 Roof Material: Galv Iron .5mm
 Soffit Overhang: 600
 Wind Area: High
 Snow Load: 0.441 (Factored)

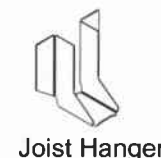
 Trusses And Rafters At 900 Centres
 Unless Stated Otherwise.

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

DRAWN BY Austin

DATE 22 Jan, 2013 PAGE 1 of 5

FIXINGS

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


Joist Hanger

C=CT200 (Pair)
M=Multigrip (Pair)
N=Nail On Plate
K=CPC 40 (Pair)
P=CPC 80 (Pair)
X=N21 Cleat (Pair)

CT 200



Multi Grips



Nail on plate



CPC

All other Truss fixings must be Two wire dogs Unless indicated as above.

NOTE

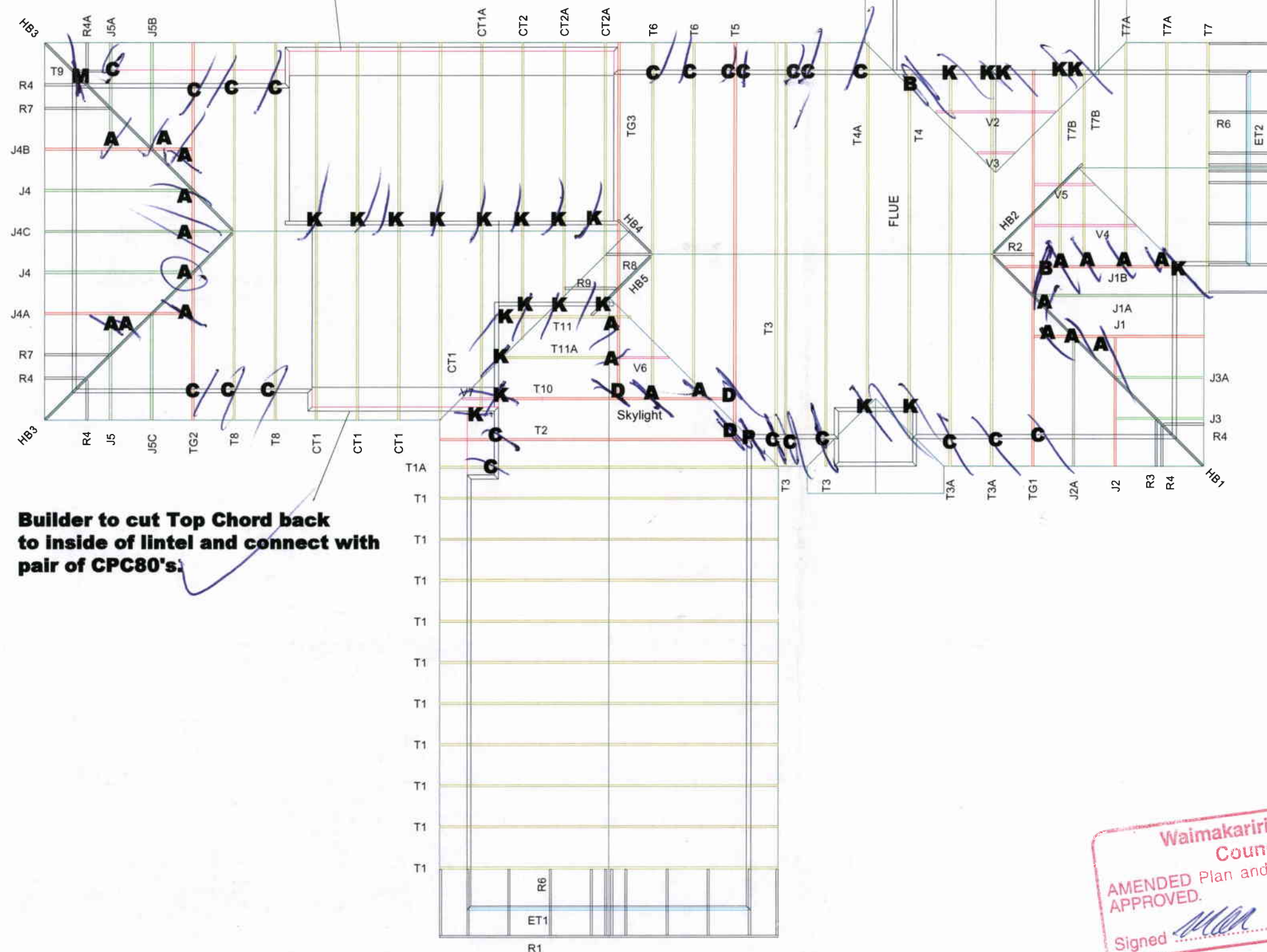
Please contact your local CARTERS Manufacturing Branch for any queries regarding this layout or if any on site remedial work is required.

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



See Page 2 for Dimensions and Point Loads.

Builder to cut Top Chord back to inside of lintel and connect with pair of CPC80's.



Builder to cut Top Chord back to inside of lintel and connect with pair of CPC80's.



FINAL LAYOUT

Note: Top Plate Fixings

To apply the correct number of B type fixings required, divide the wall length by the stud centres add 1 to this figure and locate this number of fixings to studs as evenly as possible along the wall length

STUD TO PLATE FIXINGS

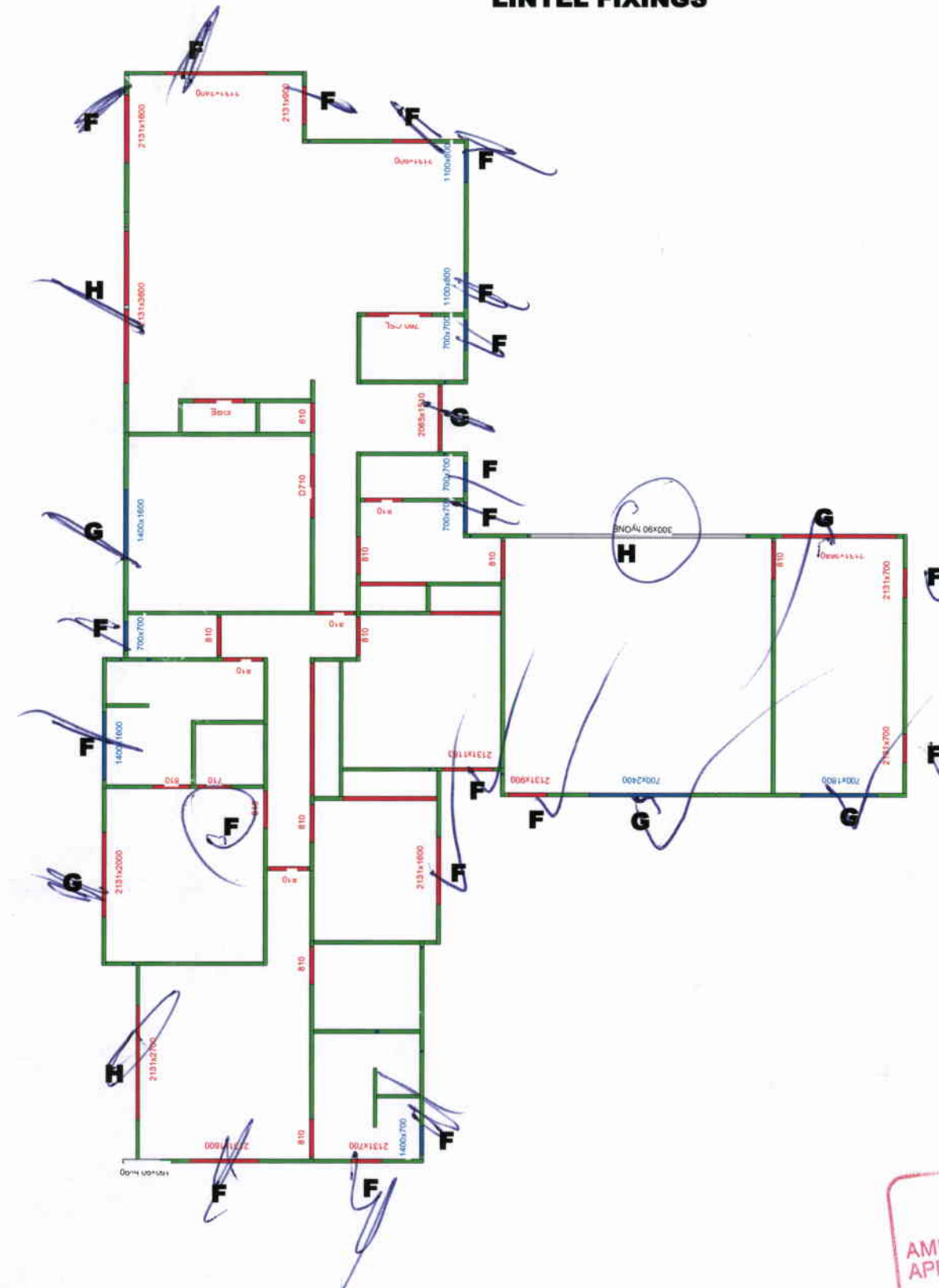
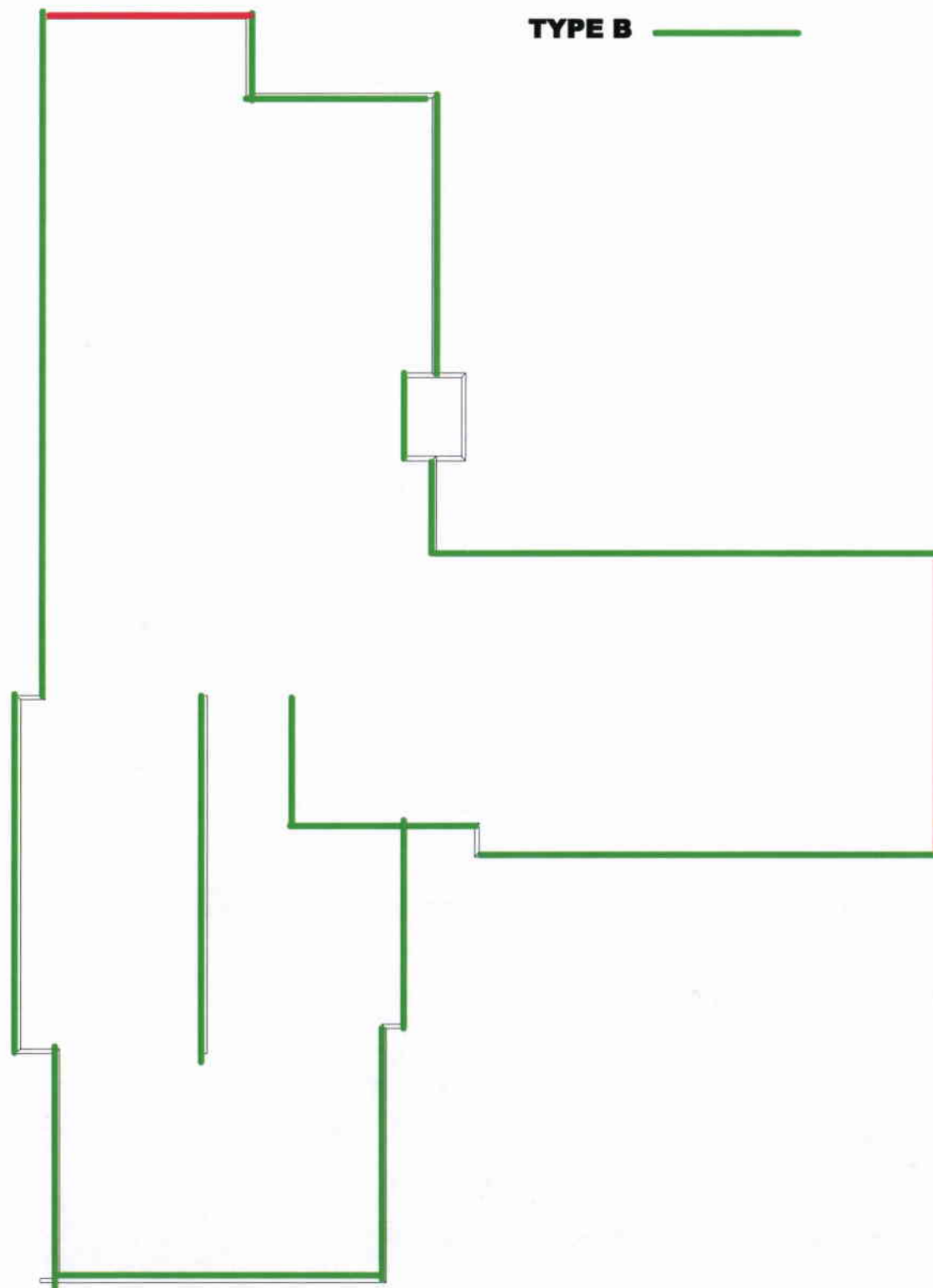
TYPE A —

TYPE B —

Suggested Fixings Only

Alternative fixings may be used provided the indicated holddown is achieved, refer to MiTek's Fixing Schedules for alternative fixings. (Not included in this document)

LINTEL FIXINGS



CARTERS
MANUFACTURING

21 Broughs Rd
Christchurch
Ph (03) 359 2731

JOB No **CD93658**

Client: Jennian Homes Canterbury
Job Name: McNicholl Residence
Address: 27 Mandeville Park Dr Rangiora

Consent #: 122095

Pitch: 25

Roof Material: Galv Iron .5mm

Soffit Overhang: 600

Wind Area: High

Snow Load: 0.441 (Factored)

Trusses And Rafters At 900 Centres Unless Stated Otherwise.

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

DRAWN BY Austin

DATE 22 Jan, 2013

PAGE 4 of 5

**Refer Final
Page for
Lintel and
Top Plate
Fixing Key**

Waimakariri District
Council
AMENDED Plan and/or Specifications
APPROVED.
Signed *MUR* 27.1.13.

FINAL LAYOUT

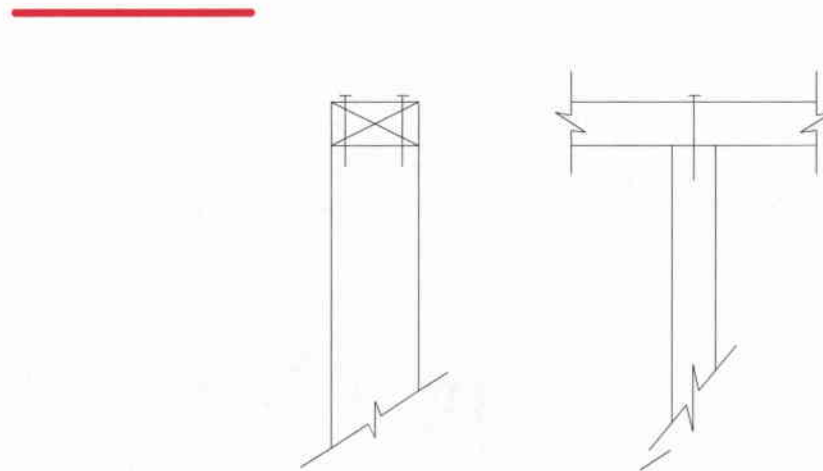
Stud to Top Plate Fixing

Lintel Fixing

Page 5 of 5

Fixing Type A (0.7kN)

2/90x3.33 Plain Steel Wirenails
Driven Vertically Into Stud



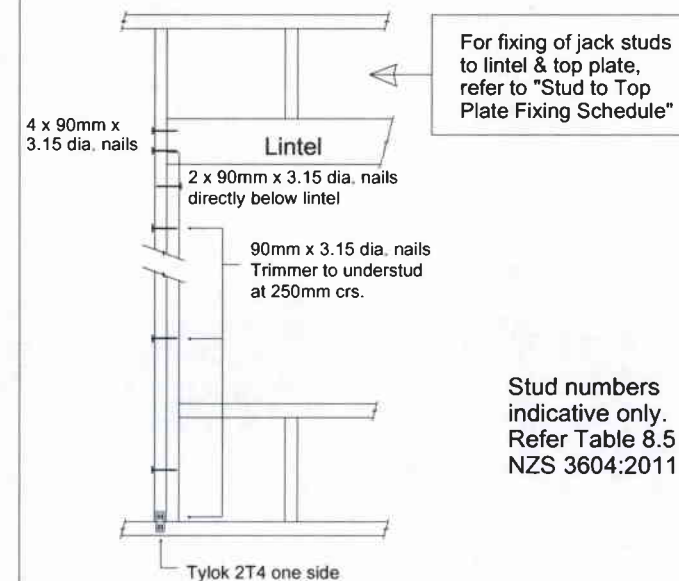
Fixing Type B (4.7kN)



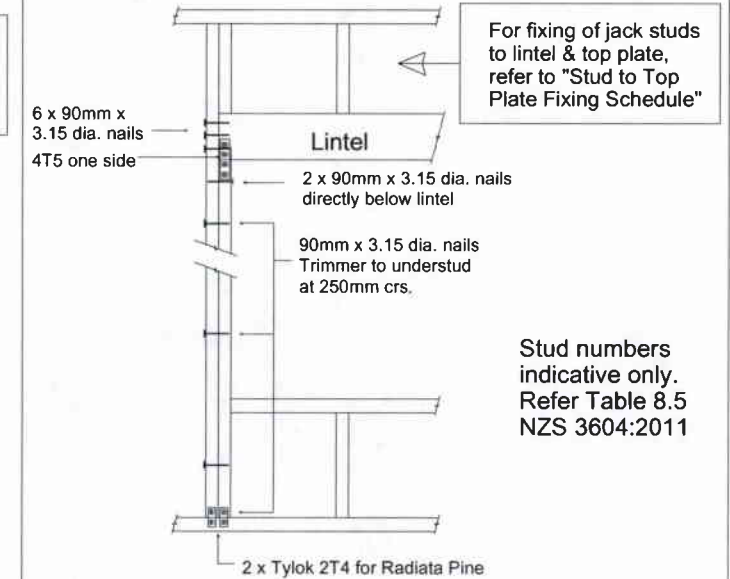
GANG NAIL Stud Strap
Design Capacity 6.1 kN
AS1720.1-1997

PLEASE NOTE:
Fixings supplied are only for applications shown.

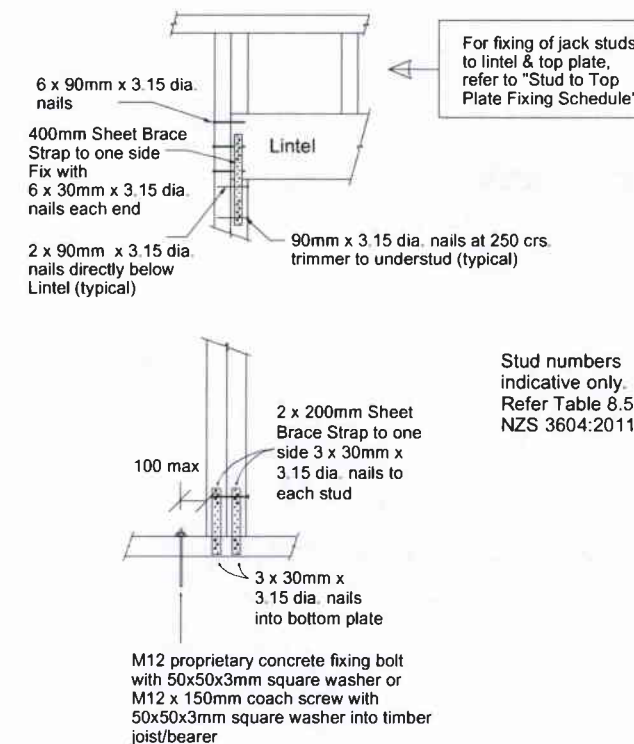
Type E (1.4kN)



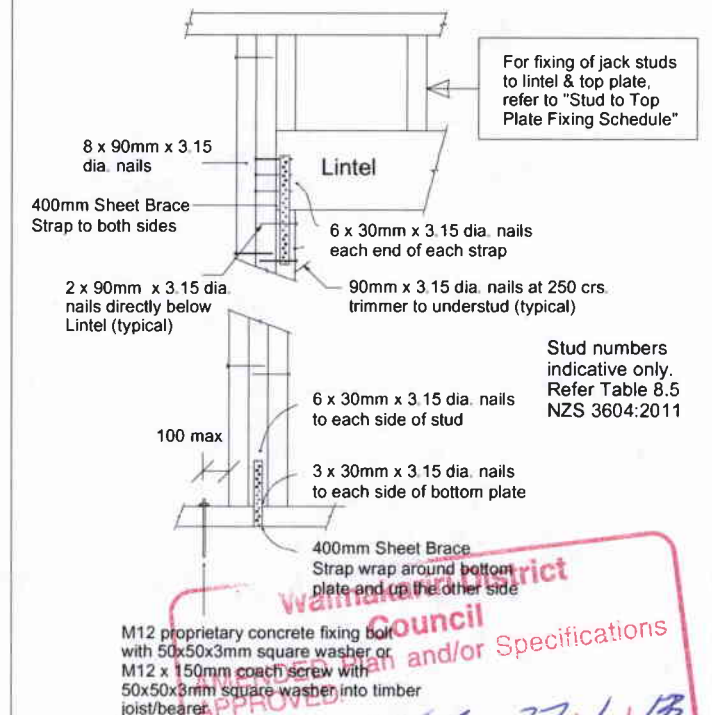
Type F (4.0kN)



Type G (7.5kN)



Type H (13.5kN)



Wairarapa District Council
Approved and/or Specifications
Signed: MCM 27/1/13

FINAL LAYOUT

RECEIVED
23 JAN 2013
BY: _____

CARTERS
MANUFACTURING

21 Broughs Rd
Christchurch
Ph (03) 359 2731

JOB No **CD93658**

Client: Jennian Homes Canterbury
Job Name: McNicholl Residence
Address: 27 Mandeville Park Dr Rangiora

Consent #: 122095

Pitch: 25

Roof Material: Galv Iron .5mm

Soffit Overhang: 600

Wind Area: High

Snow Load: 0.441 (Factored)

Trusses And Rafters At 900 Centres Unless Stated Otherwise.

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

DRAWN BY Austin

DATE 22 Jan, 2013 PAGE 2 of 5

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 Frame are to be undertaken without first obtaining written authority from CARTERS Manufacturing.

All walls indicated on the layout are considered to be load bearing.

LINTELS

**Refer Frame Layout
for Lintel Sizes**

Waimakariri District
Council
AMENDED Plan and/or Specifications
APPROVED.
Signed *[Signature]* 27.1.13



NOTIFICATION OF POINT LOADED LINTELS AND POINT LOADS ON INTERNAL WALLS WHERE THE DOWNLOAD IS HIGHER THAN 10kN OR THE UPWARD LOAD IS GREATER THAN 12kN
Note: If no point loads indicated, loading does not exceed above.

See page 1 for labels

CARTERS
MANUFACTURING

21 Brouchs Rd
Christchurch
Ph (03) 359 2731

JOB No **CD93658**

Client: Jennian Homes Canterl
Job Name: McNicholl Residence
Address: 27 Mandeville Park Dr
Rangiora

Consent #: 122095

Pitch: 25

Roof Material: Galv Iron .5mm
Soffit Overhang: 600
Wind Area: High
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Trusses And Rafters At 900 Centres Unless Stated Otherwise.

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

DRAWN BY Austin

DATE 22 Jan,2013	PAGE 3 of 5
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These lintels have been sized using one of the following:

The GANGLAM 04/2008 and
FLITCH BEAM 12/2007
selection manuals from MiTek NZ Ltd.

hyONE and hy90 lintels have been sized using designIT v4 NZ software (incl. sub versions) or selection manuals, hy90 Edition 1, and hyONE April 2008 as provided by CHH Woodproducts.

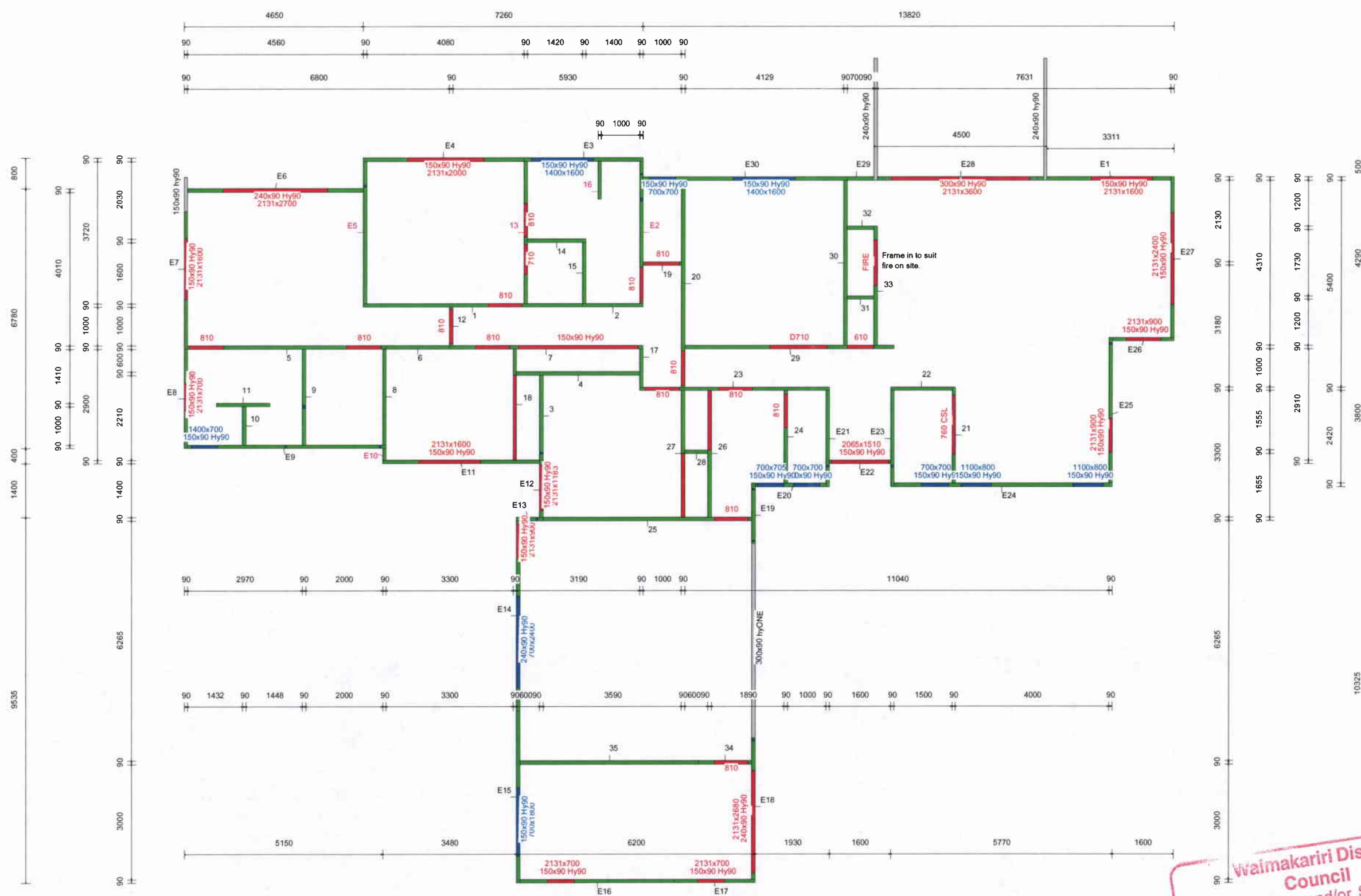
Unless otherwise stated the timber grade for all lintels is MSG8. Lintels not shown are to be selected as per NZS3604 2011.

Level 1 Frames



See Other Pages For
Truss Layout and
Fixings

Waimakariri District Council
AMENDED Plan and/or Specifications
APPROVED.
Signed men 27.1.13





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.

23-January-2013

**JENNIAN HOMES CANTERBURY (2012) LTD
27 MANDEVILLE PARK, RANGIORA
CD93658**

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.





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.mitek.nz

Printed: 09:12:37 23 Jan 2013

MiTek 20/20 Engineering 4.6.6.160

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 **CD93658** 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, 23 January 2013

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



Job: CD93658

Client: Jennian Homes Canterbury Ltd
Phone:Site: McNicholl Residence
27 Mandeville Park Dr
RangioraDescription:
Building Consent No.:

Phone:

MiTek 20/20 Engineering Ltd 100

MiTek New Zealand Limited

Printed: 09:12:37 23 Jan 2013

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

Importance Level : 2

Design Working Life : 50 years

Roof Truss

Timber Group: MSG8 DDP H1.2

Pitch: 25.000 deg

Nominal Overhang: 600 mm

Roof**Ceiling****Wind**

Material: Galv Iron .5mm

Material: Rondo screwed to BC

Area: High (44.0 m/s)

Dead Load: 0.210 kPa

Dead Load: 0.200 kPa

Pressure Coeff: Cpe = varies; Cpi = -0.30, 0.20

Restraints: 900 mm centres

Restraints: 600 mm centres

SnowLive Load: Q_{ur} = 0.250 kPaLive Load: Q_c = 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, ✕ = 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)
CT1	4	7980	25.000	900	J4C	1	2617	25.000	900	T4A	1	7490	25.000	900
CT1A	1	7980	25.000	900	J5	1	1717	25.000	900	T5	1	8090	25.000	900
CT2	1	5680	25.000	900	J5A	1	1717	25.000	900	T6	2	7190	25.000	900
CT2A	2	5680	25.000	900	J5B	1	1717	25.000	900	T7	1	4290	25.000	900
ET1	1	6200	25.000	900	J5C	1	1717	25.000	900	T7A	2	4290	25.000	900
ET2	1	4290	25.000	900	*R1	1	7400	25.000	900	T7B	2	4290	25.000	900
*HB1	1	6515	18.249	900	*R2	1	901	25.000	900	T8	2	7080	25.000	900
*HB2	1	2774	18.249	900	*R3	1	1013	25.000	900	*T9	1	872	0.000	900
*HB3	2	5801	18.249	900	*R4	5	891	25.000	900	T10	1	5223	25.000	900
*HB4	1	1028	18.249	900	*R4A	1	891	25.000	900	T11	1	2680	25.000	900
*HB5	1	1848	18.249	900	*R5	1	5490	25.000	900	T11A	1	2680	25.000	900
J1	1	3122	25.000	900	*R6	22	1455	0.000	900	TG1	1	8090	25.000	900
J1A	1	3122	25.000	900	*R7	2	1408	25.000	900	TG2	1	7080	25.000	900
J1B	1	3122	25.000	900	*R8	1	990	25.000	900	TG3	1	7190	25.000	900
J2	1	2222	25.000	900	*R9	1	1138	25.000	900	V2	1	2610	25.000	900
J2A	1	2222	25.000	900	T1	10	6200	25.000	900	V3	1	810	24.999	900
J3	1	1322	25.000	900	T1A	1	6200	25.000	900	V4	1	2222	25.000	900
J3A	1	1322	25.000	900	T2	1	6200	25.000	900	V5	1	1322	25.000	900
J4	2	2617	25.000	900	T3	3	8090	25.000	900	V6	1	1120	25.000	900
J4A	1	2617	25.000	900	T3A	2	8090	25.000	900	V7	1	710	25.000	900
J4B	1	2617	25.000	900	T4	1	7400	25.000	900					

Total quantity : 110

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, 23 January 2013

Christchurch Manufacturing

Slab Thickening Report : Page 1

Job: CD93658

Client: Jennian Homes Canterbury Ltd
Phone:

Site

McNicholl Residence
27 Mandeville Park Dr
RangioraDescription:
Building Consent No :
MiTek 2020 Engineering 4.0.6.100

Phone:

Printed: 09:12:42 22 Jan 2013

TRUSS BEARINGS EXCEEDING 10KN REPORT
- Ultimate Limit State Loads**MiTek® Truss List**

Legend: ? = input only, ✕ = failed design, Ø = non certified, Unmarked trusses = designed successfully

Critical Trusses	Qty	Span (mm)	Joint	Bearing Reactions (kN)	
				Down	Uplift
T2	1	6200	H	14.839	10.925
T5	1	8090	A	13.242	9.647
T10	1	5223	K	10.533	7.561
TG1	1	8090	B	10.184	7.286

**Note:**

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

Shirley Cresswell

From: Buckley, Nick (Carters Christchurch Manufacturing) <Nick.Buckley@carters.co.nz>
Sent: Wednesday, 23 January 2013 9:16 a.m.
To: Building Services
Subject: 122095-Waimak
Attachments: CD93658 - FTMA Cert.pdf; CD93658.pdf

**CARTERS****Nick Buckley** Detailer**Your Building Partner** ■ DDI ■ FAX ■19-21 Broughs Rd, Harewood, Christchurch | PO Box 4643, Christchurch 8140 | www.carters.co.nz

REGISTERED MASTER BUILDERS



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

PRODUCER STATEMENT - DESIGN (PS1)**Project : McNicholl/Glithero
House**

Issue B - Site address corrected

Date **21 November 2012**
Job Number **212177**Issue **B**

Issued by: **James H. Harding**
To: **Jennian Homes Canterbury (2012) Ltd**
In respect of: **180 x 75 steel channel gable rafter, and 190 x 90 SG8 ridge beam at portico, and associated studs and fixings. Rafters, side lintels to portico and lintel to W11 by others and are not covered by this certificate.**
At: **55 Mandeville Park Drive**
Legal description: **Lot 27 DP 448155**

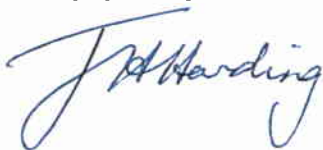
Jim Harding Consulting Engineer Limited has been engaged by: **Jennian Homes Canterbury (2012) Ltd** to provide structural engineering design services in respect of the requirements of **clause B1** of the Building Regulations 1992 for parts of the building work as specified above only. The design has been prepared in accordance with **B1/VM1** of the compliance documents issued by the Department of Building and Housing and the work is described on the following documents according to which the building is to be constructed:

Document	Title	Number	Date
Drawings by Jennian Homes	McNicholl	11-210	12/09/2012

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$200,000.00, I believe on reasonable grounds that subject to the limitations listed below, the drawings according to which the building is proposed to be constructed comply with the relevant provisions of the building code.

Design assumptions and limitations of this certificate:

- Ground conditions as per soil report by Jim Harding Consulting Engineer Ltd dated 24 July 2012
- Over-all stability or suitability of the site is excluded.
- The drawings have not been checked for compliance with non-specific design codes such as NZS 3604 and NZS 4229
- All proprietary products are to meet the performance specification requirements.



J.H. Harding
B.E.(Civil) Hons. M.I.P.E.N.Z. (64678) CPENG IntPE(NZ)
Director
Jim Harding Consulting Engineer Limited

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications **APPROVED** in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 23/11/2012 brendam

Inspections are to be carried out by the Territorial Authority or Independent Building Certifier

All RBW Design work relating to B1	(x)		() Carried out () Supervised	
Foundations and subfloor framing	(x)		() Carried out () Supervised	
Walls	(x)		() Carried out () Supervised	
Roof	(x)		() Carried out () Supervised	
Columns and beams	(In)	To portico ONLY	() Carried out () Supervised	As per PS1 issued 24 Sep 2012
Bracing	(x)		() Carried out () Supervised	
Other	(x)		() Carried out () Supervised	

EXTERNAL MOISTURE MANAGEMENT SYSTEMS: E2

All RBW design work relating to E2	(x)		() Carried out () Supervised	
Damp proofing	(x)		() Carried out () Supervised	
Roof cladding or roof cladding system	(x)		() Carried out () Supervised	
Ventilation system (for example, subfloor or cavity)	(x)		() Carried out () Supervised	
Wall cladding or wall cladding system	(x)		() Carried out () Supervised	
Waterproofing	(x)		() Carried out () Supervised	
Other	(x)		() Carried out () Supervised	

FIRE SAFETY SYSTEMS: C1 – C6

Emergency warning systems, evacuation and fire service operation systems, suppression or control systems, or other	(x)		() Carried out () Supervised	
--	-------	--	-----------------------------------	--

Note: The design of fire safety systems is only restricted building work when it involves small-to-medium apartment buildings as defined by the Building (Definition of Restricted Building Work) Order 2011.

Note: continue on another page if necessary.

WAIVERS AND MODIFICATIONSWaivers or modifications of the building code are required () Yes (☒) No

If Yes, provide details of the waivers or modifications below: N/A

Clause	Waiver/modification required
<i>[List relevant clause numbers of building code]</i>	<i>[Specify nature of waiver or modification of building code]</i>

Note: continue on another page if necessary.

ISSUED BY

Name: James Harding		LBP or Registration number: 64678	
The practitioner is a: () Design LBP () Registered architect (☒) Chartered professional engineer			
Design Entity or Company (optional):		Jim Harding Consulting Engineer Ltd	
Mailing address (if different from below):		P O Box 41-033, Ferrymead, Christchurch 8247	
Street address / Registered office: 4 Rochdale St			
Suburb: Fendalton		Town/City: Christchurch	
PO Box/Private Bag:		Postcode: 8014	
Phone number:		Mobile: 027 2269 126	
After Hours:		Fax:	
Email address: jimhardingnz@gmail.com		Website:	

DECLARATIONI James Harding B.E.(Civil) Hons. M.I.P.E.N.Z. (64678) CPEng IntPE(NZ)

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

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

Signature:



Date: 06 November 2012

Job Ref: 212177

12 September 2012

Jennian Homes Canterbury (2012) Ltd
P O Box 79009
Avonhead
ChristchurchAttention :- **Steven Pearce**WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendam

Dear Steven,

SOIL TESTS ~ LOT 27 MANDEVILLE PARK, FOR McNICHOLL & GLITHERO

As requested we have carried out hand auger bore logs and penetrometer tests at the above site. The results are herewith enclosed for your information. These tests are relatively shallow investigations only and do not give a detailed assessment of the liquefaction potential of this site in a future seismic event. Such assessment is beyond the scope of this report.

The borelogs show silty gravelly topsoils to depths of up to approximately 250-300mm, overlying thin layers of silty sand with gravel before terminating on gravel at shallow depths, 250-400mm. No drilling below this depth was possible with the hand auger.

The penetrometer tests indicate a safe allowable bearing pressure of 100 kPa or better below the topsoil.

There is no evidence on the surface of any liquefaction, lateral spreading or other land damage as a result of recent seismic activity. At the time of writing the site has not been formally classified regarding TC1-TC3.

Conclusions and Recommendations

The above tests do not give any definitive data at any great depth. However, given previous experience in the general area and the current condition of the land after recent seismic activity, it is my considered opinion that the site complies with the minimum requirements of "Good Ground" as defined by NZS 3604 "Timber Framed Buildings not requiring specific engineering design".

Normal standard foundations are therefore recommended as follows:-

- The perimeter foundation trenches are to be taken to a minimum depth of 300mm, with a 300mm bearing width at the base of the trench.
- Reinforcing is to be 2/D16 rods with D12 slab ties at 450c/c.
- Slab reinforcing is to be 500E ductile mesh.

Should the builder find any local soft spots or inconsistencies with the above results during the excavations, the Engineer is to be notified for further advice. In any case, it is recommended that the Engineer be called to inspect the foundation trenches prior to placing any reinforcement, in order to confirm that adequate depth and bearing has been achieved.

Please call me if you have any queries.

Yours faithfully,



J H Harding, B.E.(Civil) Hons, M.I.P.E.N.Z, CPEng, IntPE(NZ)
Director
Jim Harding Consulting Engineer Limited

Limitations:

- *This report is prepared solely for the benefit of our client and their professional advisors with respect to the design of foundations for the dwelling proposed to be erected on this site. No liability is accepted by Jim Harding Consulting Engineer Ltd in respect of its use for any other purpose or by any other person or entity.*
- *The above test results relate to shallow investigations only, and no assessment or information is hereby given or implied regarding the liquefaction potential of this site in any future seismic event. A full geotechnical investigation by an appropriately qualified consultant should be commissioned in order to determine such liquefaction potential if required.*

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendam

JIM HARDING

CONSULTING ENGINEER LIMITED

B.E.(CIVIL) HONS. M.I.P.E.N.Z. CPENG, INTPE(NZ)

P.O. Box 41-033
 Ferrymead
 Christchurch 8247
 Phone (03) 326-3132
 Mobile 027-2269-126
 jimhardingnz@gmail.com

Bore Logs at :- Lot 27 Mandeville Park, Ohoka**20/07/2012****for :- McNicholl / Glithero****Job Number :****212177**

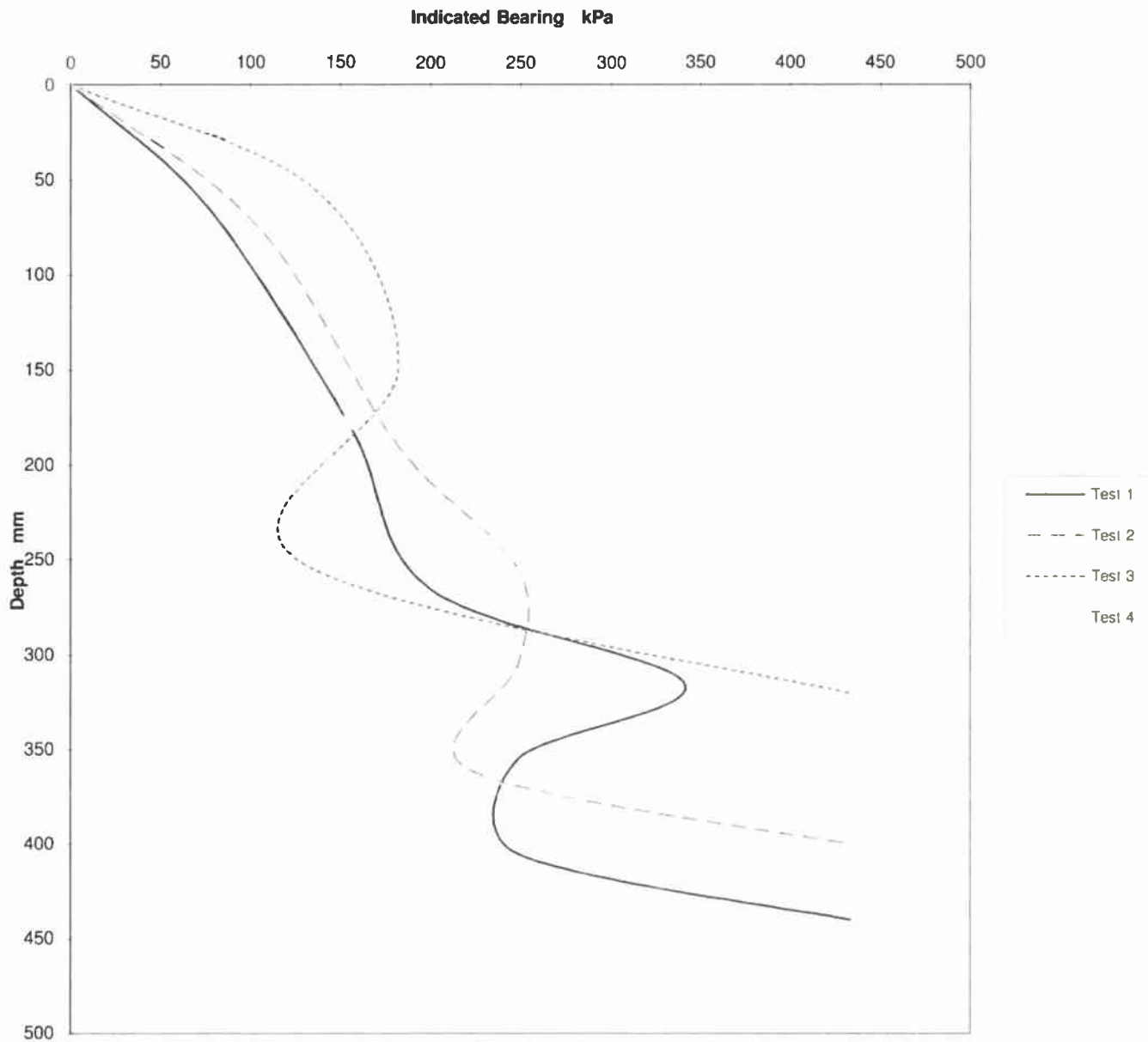
Depth	Log 1	Log 2	Log 3	Log 4
Surface				
100	gravelly	gravelly	gravelly	gravelly
200	topsoil	topsoil	topsoil	topsoil
300				yellow brown
400			yellow brown	silty sandy
500	terminated @	terminated @	silty sandy	Gravel
600	300	250	Gravel	
700	due to	due to		
800	gravel	gravel	terminated @	terminated @
900			350	400
1000			due to	due to
1100			gravel	gravel
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				

JIM HARDING

CONSULTING ENGINEER LIMITED

B.E.(CIVIL) HONS. M.I.P.E.N.Z. CPENG. INTPE(NZ)

P.O. Box 41-033
Ferryroad
Christchurch 8247
Phone (03) 326-3132
Mobile 027-2269-126
jimhardingnz@gmail.com

Soil Test at :- Lot 27 Mandeville Park, Ohoka**20/07/2012****for :- McNicholl / Glithero****Job Number :****212177****Scala Penetrometer Results**

Consent Issued BC122095

THE OWNER OF THIS
DRAWING IS THE
PROPERTY OF JENNIAN
HOMES CANTERBURY
LTD 2095

All construction to comply
with NZ Building code/
Approved Documents and
means of Compliance, Inc
NZS 3804 2011

All Dimensions and Levels
are to be checked by
contractor before
commencement of
work. Contractor to report
any discrepancy.

RESOURCE CONSENTS
PIM required to determine
any Resource Consent
issues

Site Plan
Paths and driveways not
included in building consent
All site works and
landscaping not included in
building consent

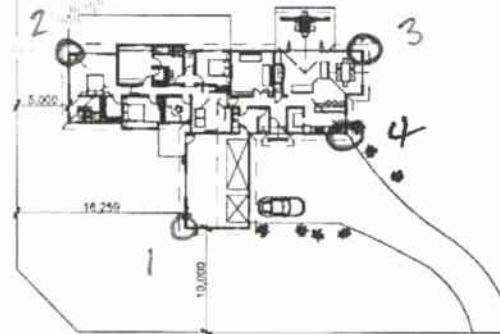
**FINAL PLANS ARE
SUBJECT TO FINAL
SECTION SIZE AND SITE
LEVELS**

**HAZARD MANAGEMENT
TEMPORARY SITE
FENCING**
If a work-site is not
completely enclosed, and
unauthorised entry by
children is likely, it is
acceptable for specific
hazards to be fenced only
when workers are absent
from the immediate vicinity.

Where the potential hazard
at a work-site makes a
safety barrier necessary, a
barrier complying with Table
1 is an acceptable solution.

Site fences and hoardings

Fences and hoardings shall
extend at least 2.0 m in
height from ground level on
the side accessible to the
public.



Mandeville Park

LOT no 27
Area 5470m

212177

SITE PLAN APPROXIMATE ONLY - NO READABLE TITLE PLAN PROVIDED AT TIME OF DESIGN

Jennian
HOMES

Your personality Our expertise

JENNIAN HOMES CANTERBURY LTD
PO BOX 78006-CHRISTCHURCH
PHONE 03-336-5818
FAX 03-336-5814

SITE PLAN

DRAWN BY

Sketch: BP

Pricing: -

Contract: -

Scale:

1:500

Date:

30/03/2012

Job Number:

03

Revision:

S7

**McNICHOLL &
GLITHERO**
27 Mandeville Park Drive
Rangiora
Waimakariri

PRODUCER STATEMENT - DESIGN (PS1)

**Project : McNicholl/Glithero
House**Date **24 September 2012**
Job Number **212177**Issue **A**

Issued by: **James H. Harding**
To: **Jennian Homes Canterbury (2012) Ltd**
In respect of: **180 x 75 steel channel gable rafter, and 190 x 90 SG8 ridge beam at portico, and associated studs and fixings. Rafters, side lintels to portico and lintel to W11 by others and are not covered by this certificate.**
At: **27 Mandeville Park Drive, Rangiora**
Legal description: Lot DP

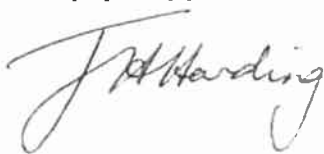
Jim Harding Consulting Engineer Limited has been engaged by: **Jennian Homes Canterbury (2012) Ltd** to provide structural engineering design services in respect of the requirements of **clause B1** of the Building Regulations 1992 for parts of the building work as specified above only. The design has been prepared in accordance with **B1/VM1** of the compliance documents issued by the Department of Building and Housing and the work is described on the following documents according to which the building is to be constructed:

Document	Title	Number	Date
Drawings by Jennian Homes	McNicholl	11-210	12/09/2012

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$200,000.00, I believe on reasonable grounds that subject to the limitations listed below, the drawings according to which the building is proposed to be constructed comply with the relevant provisions of the building code.

Design assumptions and limitations of this certificate:

- Ground conditions as per soil report by Jim Harding Consulting Engineer Ltd dated 24 July 2012
- Over-all stability or suitability of the site is excluded.
- The drawings have not been checked for compliance with non-specific design codes such as NZS 3604 and NZS 4229
- All proprietary products are to meet the performance specification requirements.



J.H. Harding
B.E.(Civil) Hons. M.I.P.E.N.Z. (64678) CPEng IntPE(NZ)
Director
Jim Harding Consulting Engineer Limited

Inspections are to be carried out by the Territorial Authority or Independent Building Certifier

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendam

Mc Nicholl / Glithero

212177.

24/9/12

Portico roof structure

$$\begin{aligned} \text{Default snow (SLS)} &= 0.40 \text{ kPa} \\ \text{Light roof} &\frac{0.40}{0.80} \text{ kPa} \end{aligned}$$

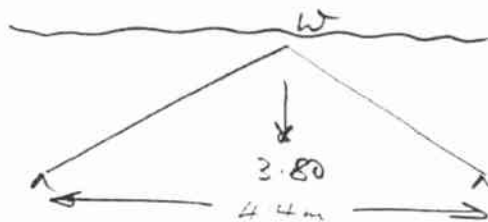
Ridge beam $L = 3000$.

$$w = 0.80 \times 44/2 = 1.76.$$

$$\Rightarrow 190 \times 90 \quad A = 6.01.$$

$$f = 3.66. \quad \text{OK}$$

$$R = 1.76 \times 3.6^2/2/3 = 3.80$$



$$w \neq 0.80 \times 1.6^2/2/0.9 = 1.14$$

180 L 75

$$A = 4.96.$$

$$f = 44.20 \quad \text{OK}$$

$$R = 4.41 \rightarrow \text{double stud OK.}$$

Consent Issued BC122095
MiTek New Zealand Limited**MITEK FABRICATOR DESIGN STATEMENT**

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 Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

MITEK 20/20® TRUSS DESIGN DATA

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.

Details**Roof Truss**

Timber Group: MSG8 DDP H1.2
Material: Galv Iron .5mm
Dead Load: 0.210 kPa
Restraints: 900 mm centres
Live Load: Q_{ur} = 0.250 kPa
Q_c = 1.100 kN

Importance Level: 2

Pitch: 25.000 deg
Ceiling Material: Rondo screwed to BC
Dead Load: 0.200 kPa
Restraints: 600 mm centres
Live Load: Q_c = 1.400 kN

Design Working Life: 50 years

Nominal Overhang: 600 mm
Wind Area: High (44.0 m/s)
Pressure Coeff: C_{pe} = varies; C_{pi} = -0.30, 0.20
Snow Location: at 100 m
Open Ground Load: 0.900 kPa
Basic Roof Load: 0.441 kPa

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 job 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, Fxx = 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)
J5	1	7980	25.000	900	J5A	1	1730	25.000	900	T2A	1	7490	25.000	900
J6	1	1717	25.000	900	J6A	1	1717	25.000	900	T3	2	7080	25.000	900
J7	1	3284	18.249	900	*R1	1	1013	25.000	900	T4	7	6200	25.000	900
*R1	1	1013	25.000	900	*R2	4	891	25.000	900	T5	1	6200	25.000	900
*R2	4	891	25.000	900	*R3	1	1363	25.000	900	T6	4	2432	25.000	900
*R3	1	1363	25.000	900	*R3A	1	1363	25.000	900	T7	1	4290	-25.000	900
*R4	1	846	25.000	900	*R4A	1	846	25.000	900	T8	1	4290	25.000	900
*R4A	1	846	25.000	900	*R5	1	1408	25.000	900	T8A	2	4290	25.000	900
*R5	1	1408	25.000	900	*R6	1	989	25.000	900	T8B	1	4290	25.000	900
*R6	1	989	25.000	900	*R7	1	7400	25.000	900	T9	1	789	18.249	900
*R7	1	7400	25.000	900	*R8	12	1455	0.000	731	TG1	1	8090	25.000	900
*R8	12	1455	0.000	731	*R9	1	5490	25.000	900	TG2	1	7080	25.000	900
*R9	1	5490	25.000	900	*R10	10	1455	0.000	675	V1	1	965	25.000	900
*R10	10	1455	0.000	675	*R11	1	2285	0.000	900	V2	1	2178	25.000	900
*R11	1	2285	0.000	900	*R12	1	3185	0.000	900	V3	1	1278	25.000	900
*R12	1	3185	0.000	900	T1	1	8090	25.000	900	V4	1	800	25.000	900
T1	1	8090	25.000	900	T1A	3	8090	25.000	900	V5	1	1955	25.000	900
T1A	3	8090	25.000	900	T1B	4	8090	25.000	900	V6	1	1055	25.000	900
T1B	4	8090	25.000	900	T2	1	7490	25.000	900	V7	1	4410	25.000	900
T2	1	7490	25.000	900						V8	1	2610	25.000	900
										V9	1	810	24.999	900
										V10	1	667	25.000	900

Total quantity: 112

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
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Regulations 1992, Clause 3
122095 19/11/2012 brendam

AS BUILT TRUSS LAYOUT
REQUIRED - This must be received by the Building Unit AT
LEAST 10 WORKING DAYS PRIOR to the Structure
Pre-Roof Pre-Wrap inspection.

Truss "As-Built" designs may be sent to
Buildinginfo@wmk.govt.nz

computer design input has been carried out by:

Name of Computer Operator:

Brent Yellowlees

Qualifications and Title:

Truss Detailer

Signed:

CARTERS

A Division of Carter Holt Harvey

Dated: Monday, 6 August 2012

TRUSS BEARINGS EXCEEDING 10KN REPORT - Ultimate
Limit State Loads

ek* Truss List
and: ? = input only, ✖ = failed design, Ø = non certified, Unmarked trusses = designed successfully

ical Trusses	Qty	Span (mm)	Joint	Bearing Reactions (kN)	
				Down	Uplift
	1	6200	I	12 668	9 444
	1	8090	B	10 084	7 263

SUPERSEDED

WAIMAKARIRI DISTRICT COUNCIL
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Buildinginfo@wmk.govt.nz

**PRODUCER STATEMENT for MiTek 20/20[®] TRUSS DESIGN - Version 4.6**ISSUED BY: **MiTek New Zealand Limited**: **Christchurch Manufacturing**RESPECT OF: **MiTek[®] Truss Designs**

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendam

This producer statement covers the MiTek 20/20[®] truss design and the structural performance of the GANG-NAIL[®] connector for the job reference **CD084431** 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 fully accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Certification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution to satisfy the requirements of Clause B1 of the New Zealand Building Code.

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

- All proprietary products meeting their performance specification requirements
- The provision of adequate roof bracing and overall building stability
- Correct selection and placement of GANG-NAIL connector plates
- Correct input of Truss Design Data as shown in the Fabricator Design Statement for this job
- The design being undertaken by the accredited fabricator under the terms of the software licence

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: Monday, 6 August 2012

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

**AS BUILT TRUSS LAYOUT
REQUIRED - This must be received by the Building Unit AT
LEAST 10 WORKING DAYS PRIOR to the Structure
Pre-Roof Pre-Wrap inspection.**

Truss "As-Built" designs may be sent to
Buildinginfo@wmk.govt.nz

BUILDING CONSENT LAYOUT

Consent Issued BC122095

CARTERS

MANUFACTURING

21 Broughs Rd
Christchurch
Ph (03) 359 2731

JOB No **CD084431**

Client: Jennian Homes

Job Name: McNicol

Address: 27 Madeville Park Drive
Rangiora

Consent #:

Pitch: 25.000

Roof Material: Galv Iron .5mm

Soffit Overhang: 600

Wind Area: High

Snow Load: 0.441 (Factored)

Trusses And Rafters At 900 Centres
Unless Stated Otherwise.

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

DRAWN BY Brent Yellowlees

DATE 6 Aug,2012 PAGE 1 of 2

FIXINGS

A=47x90 JH

B=47x120 JH

D=47x190 JH

E=95x165 JH



Joist Hanger

C=CT200 (Pair)

M=Multigrip (Pair)

N=Nail On Plate

K=CPC 40 (Pair)

P=CPC 80 (Pair)

X=N21 Cleat (Pair)

CT 200



Multi Grips



Multi Grips



Nail on plate



CPC

**All other Truss
fixings must be
Two wire dogs
Unless indicated
as above.**

NOTE

Please contact your local CARTERS
Manufacturing Branch for any queries
regarding this layout.

This truss layout is for consent purposes
only and must be followed by an
"As Built" layout and supporting documents
at the time of manufacture



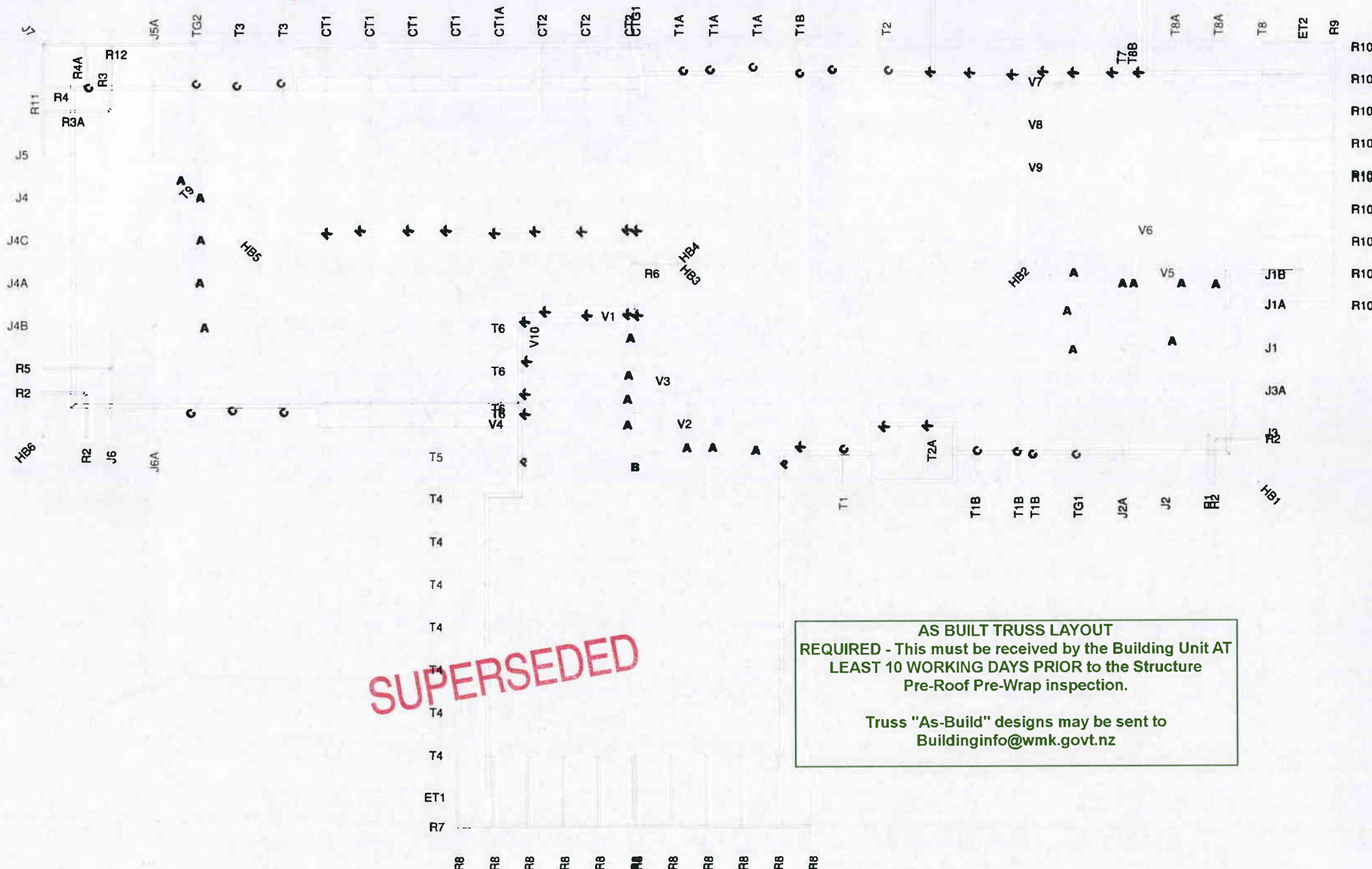
See Page 2 for Dimensions
and Point Loads.

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendanm

SUPERSEDED

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BUILDING CONSENT LAYOUT

Consent Issued BC122095

CARTERS
MANUFACTURING

21 Broughs Rd
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JOB No **CD084431**

Client: Jennian Homes
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Address: 27 Madeville Park Drive
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Consent #:

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Roof Material: Galv Iron .5mm
Soffit Overhang: 600
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Snow Load: 0.441 (Factored)

Trusses And Rafters At 900 Centres
Unless Stated Otherwise.

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

DRAWN BY Brent Yellowlees

DATE 6 Aug,2012 PAGE 2 of 2

These lintels have been sized using
one of the following:

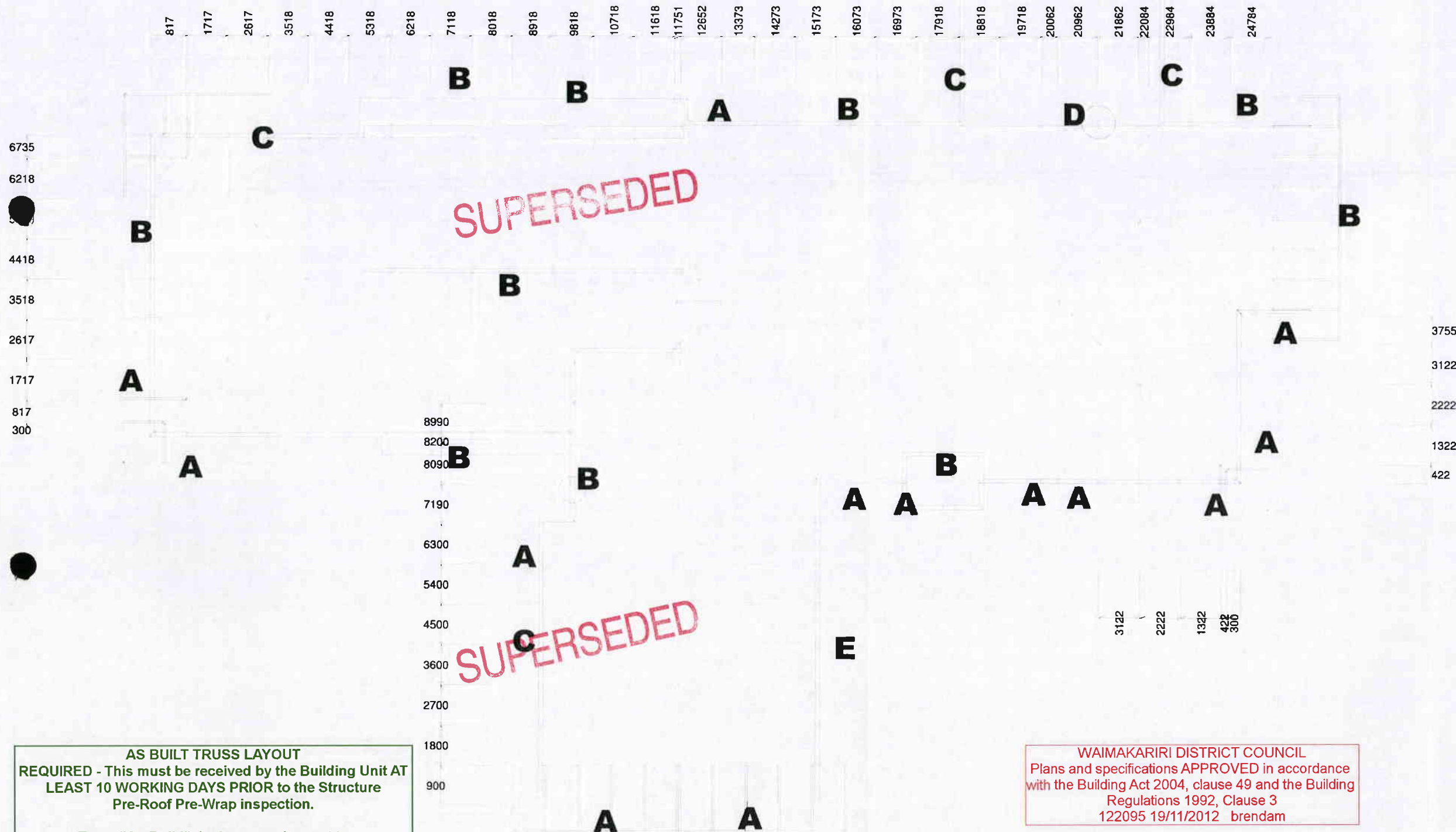
The GANGLAM 04/2008 and
FLITCH BEAM 12/2007
selection manuals from MiTek NZ Ltd.

hyONE and hy90 lintels have been sized
using designIT v4 NZ software
(incl. sub versions) or selection manuals,
hy90 Edition 1, and hyONE April 2008 as
provided by CHH Woodproducts.

Unless otherwise stated the timber grade
for all lintels is MSG8. Lintels not shown
are to be selected as per NZS3604 2011.

All walls shown on this layout are
considered to be load bearing.

LINTEL	SIZE	GRADE
A	2/90 x 45	SG8
B	150 x 90	hy90
C	240 x 90	hy90
D	300 x 90	hy90
E	300 x 90	hyONE



NOTIFICATION OF POINT LOADED LINTELS AND POINT LOADS ON
INTERNAL WALLS WHERE THE DOWNLOAD IS HIGHER THAN 10kN
OR THE UPWARD LOAD IS GREATER THAN 12kN
Note: If no point loads indicated, loading does not exceed above.

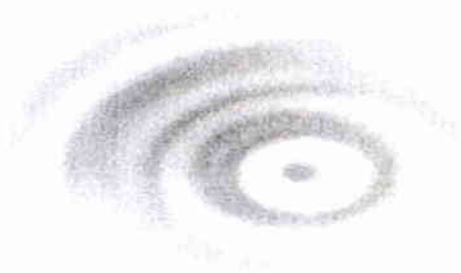


See Page 1 for
Truss Layout and
Fixings



OWNER OPERATION MANUAL

CLEARWATER Z54 DELUXE

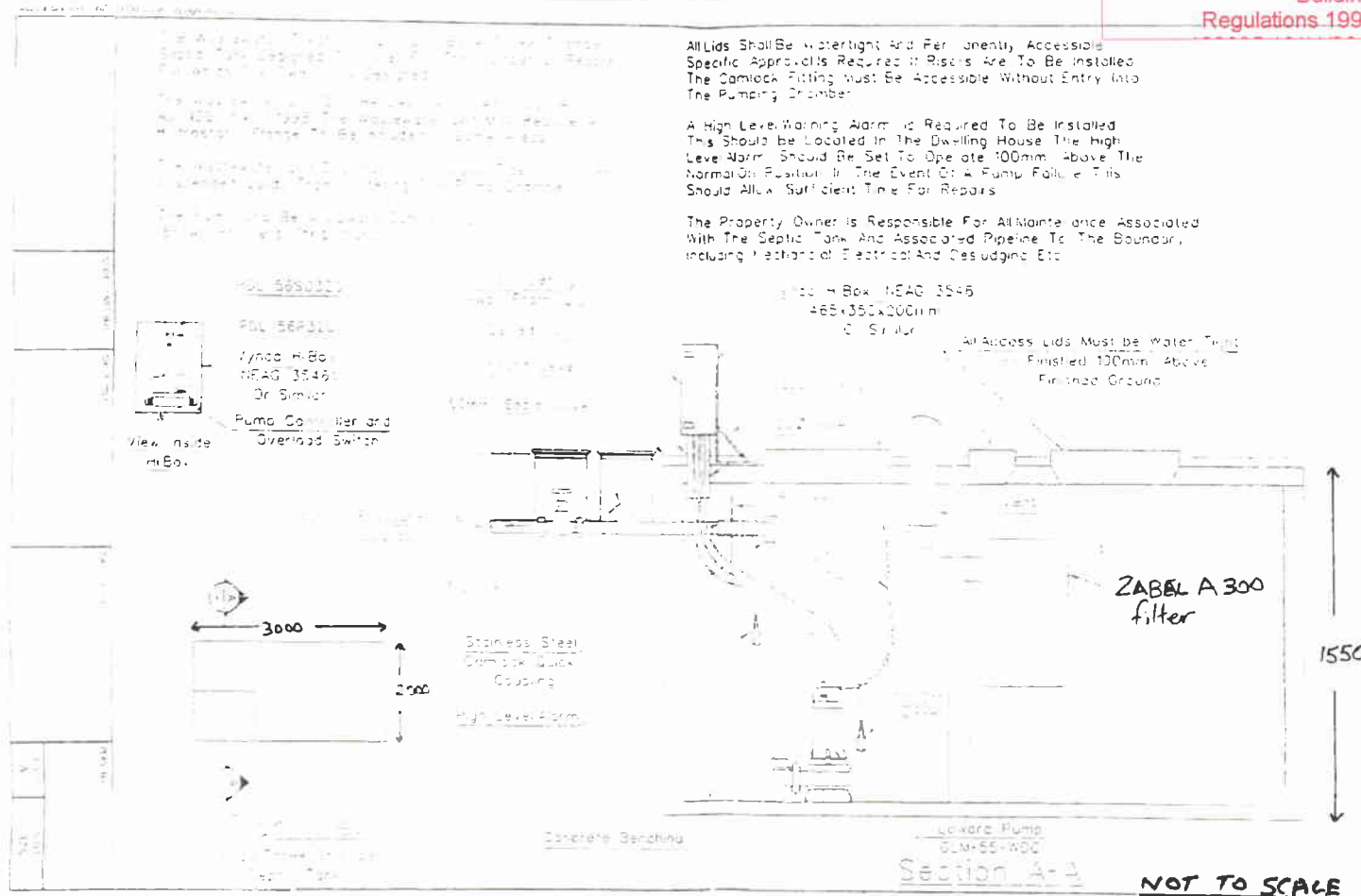


WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
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122095 19/11/2012 brendam

Processed and Approved for validation by agent.
122095 11/6/2012 Steve Dale



WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in
accordance
with the Building Act 2004, clause 49 and the
Building
Regulations 1992, Clause 3



OASIS CLEARWATER Z54 DELUXE AS PER WAIMAKARIRI DC specifications

We urge you to fully read this Manual. The contents are important to your safety and the operation of the Clearwater Z54 Deluxe Treatment System.

Keep this Manual with other important household manuals for future reference.

If you have questions regarding the safety and operation of your Clearwater Z54 Deluxe Treatment System, contact your Local Authorised Service Technician.

- Do not attempt to service components of the system yourself, call your Accredited Service Technician.
- Only Authorised Service Personnel are to remove covers on the Treatment System.

TABLE OF CONTENTS

SECTION 1.	CLEARWATER Z54 DELUXE SYSTEM OPERATION
SECTION 2.	INTRODUCING PRODUCTS INTO THE SYSTEM
SECTION 3.	SYSTEM MAINTENANCE, MONITORING AND SERVICING
SECTION 4.	TROUBLE SHOOTING - PROCESS FAILURE
SECTION 5.	LIMITED WARRANTY
SECTION 6.	INSTALLATION AND EXCAVATION DETAILS
SECTION 7.	ELECTRICAL REQUIREMENTS
SECTION 8.	SYSTEM MAINTENANCE - CANTERBURY AREA

INTRODUCTION

The System normally comprises 2 or 3 separate chambers (gravity or pumped system).

The System comprises a pre-treatment chamber (of 3,560 litres) gravity feeding to a secondary treatment chamber (1,180 litres) incorporating a Zabel A100/300 filter.

If a pump is incorporated into the System, the pump well has a capacity of 700 litres. Various pumps can be fitted to the system depending on duty requirements.

The system may also be fitted with an electrical isolator switch and high water level audible alarm, mounted on a post on the system, in the event of system malfunction.

INTRODUCING PRODUCTS INTO THE SYSTEM

Introducing harmful products into the system may reduce the efficiency of the system or stop the treatment process by destroying the bacteria. These products that reduce the efficiency or stop the treatment process can be grouped into two groups, prohibited substances and limited-use substances. While the wastewater treatment system will process most waste produced by the average household, the following information will maximise the system's efficiency and reduce the time period between primary chamber pump-outs.

NOTICE: *Introducing harmful or damaging chemicals into your Clearwater Z54 Deluxe System may void the Warranty.*

A. Prohibited Substances

Prohibited substances are those substances which when present in even small amounts will prevent the system from providing wastewater treatment. Substances that will not dissolve may clog and possibly damage the pump unit. Do NOT introduce the following prohibited substances into your Clearwater Z54 Deluxe System.

- Plastic or rubber products, petroleum products such as motor oil, paint, paint thinner, petrol and solvents.
- Non-biodegradable products, such as sanitary napkins, condoms and disposable napkins.
- Toxic substances such as pesticides, strong disinfectants and large amounts of strong caustic drain cleaners.
- Large amounts of paper products such as paper towels and synthetic fibre-reinforced products advertised as having "wet strength".
- Animal fats, such as bacon grease or lard (normal cleaning of pots and pans is acceptable).

Chemicals

The following chemicals are prohibited substances and should not be poured into the Treatment System:

- Herbicides
- Pesticides
- Paint thinner
- Motor oil

Have you read the Septic Tank Ten Commandments?
(enclosed with your system information)

B. Limited-use Substances

Limited-use substances in large concentration will reduce or stop the treatment process. These same substances in smaller concentrations will have no harmful effect on the treatment process. You may use the following substances without harming your Clearwater Z54 Deluxe Treatment System if you use the substance according to the manufacturer's directions, use the substances sparingly, and do not introduce concentrated doses into the system:

- Bio-degradable laundry powders
- Laundry bleach
- Detergents with bleach
- Household cleaners containing sodium bactericides such as
 - Pine oil (disinfectant used in general purpose liquid cleaners)
 - N-alkyl dichlorobenzyl ammonium chloride (disinfectant used in detergents and spray cleaners)
 - Sodium hydroxide (lye chemical used in drain openers and cleaners)
 - Sodium dichlor-s-triazinetrione (powdered bleach used in scouring powders and automatic dishwasher detergents)
 - Ortho-phenylphenol (bactericide used in tub and toilet bowl cleaners)

Waste Food

Some food waste, whether or not it is run through a waste grinder will not be treated by the system, but will remain in solid form and fall to the bottom of the septic tank.

Therefore, you should consider not using a waste grinder system, or disposing of these food items through the Clearwater Z54 Deluxe System:

- Animal bones
- Melon rinds
- Corn cobs
- Pips and seeds
- Eggshells
- Any other non-edible food waste

C. Acceptable Substances

Substances that are considered to be typical domestic wastewater are human waste, bath and dish water and edible food waste.

The following substances may be used regularly without harming your Clearwater Z54 Deluxe Treatment System:

- Laundry detergents without bleach
- Dishwashing detergents without bleach
- Toilet paper
- Household cleaners containing sodium bicarbonate, sodium carbonate and sodium borate.

SECTION 3**SYSTEM MAINTENANCE, MONITORING & SERVICING**

The Clearwater Z54 Deluxe is available as either a gravity fed or dosed pumped system. The owner should determine the status of the system, substances introduced into the system, and the frequency of required pump-out as determined by the service provider.

Your Clearwater Z54 Deluxe System can be furnished with an annual service policy to ensure proper operation of the system.

Primary and Secondary Chamber:

Periodically, waste will need to be removed from both chambers using normal pump-out procedures.

Zabel A100/300 Filter:

The system is complete with a Zabel bacteriological filter which performs two primary functions in a septic tank installation. It retains and filters 75% of all suspended solids in the tank and treats the wastewater by lowering the BOD₅ more than 50% (no other product on the market can achieve these results).

Dosed Pumping System:

A dosed pumping system is used to give a proportioned controlled flow to the engineered designed disposal field, to allow for even distribution over the entire field. Submersible effluent pumps operate in harsh acidic conditions and should be checked on a regular basis for satisfactory operation.

System Capacity:

The system is rated for a maximum of 8-10 persons or 1,800 litres per day. As with any system it is important the system is not hydraulically overloaded as this will interfere with the organic breakdown of the treatment process.

Visual:

Wastewater backup is characterised by wastewater flowing back into the house or slow movement of wastewater in the drains. This may indicate a problem with your wastewater treatment system. Identify where the backup is occurring within your home's plumbing system. If no material is blocking the drain, contact your Service Technician or local supplier.

SECTION 4**TROUBLE SHOOTING-PROCESS FAILURE**

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Audible alarm on control panel is ringing.	The pump has failed, or is blocked.	Remove pump from system & determine if inlet is blocked or complete pump failure has occurred.
Wastewater is backing up into the home sewer piping.	There is an obstruction in the home sewer piping.	Check the piping lead to the system visually or with drain cleaning equipment for an obstruction and correct.
	There is an obstruction in the discharge line from the system.	Check the effluent piping and lateral field piping visually or with drain cleaning equipment for an obstruction, and correct.
	The lateral field pump has failed.	Check the operation of the lateral field pump per the manufacturer's specifications.
	The flow rate to the system is too high.	Check the maximum flow rate to the system to see that it is within normal limits.
	The tank requires cleaning and/or a pumpout is required.	Check the sludge depth in both chambers of the tank to see if it is below required levels.
	Zabel filter has blocked.	Remove Zabel filter from system and clean as necessary.

LIMITED WARRANTY

Oasis Clearwater Systems Ltd warrants each Clearwater Z54 Deluxe Treatment System to be free from defects in material and workmanship for a period as follows:-

- | | | |
|----|-------------------------------------|---------------------|
| a) | concrete structure | = 10 years |
| b) | electrical & mechanical componentry | = 12 months |
| c) | Zabel filter | = lifetime warranty |

from the date of sale to the ultimate consumer when properly registered with Oasis Clearwater Systems Ltd. Oasis Clearwater System's sole obligation under this warranty is as follows: - Oasis Clearwater Systems Ltd shall fulfill this warranty by repairing or exchanging any component part, F.O.B. factory, that shows evidence of defects, provided said component part has been paid for, warrantee has notified Oasis Clearwater Systems of the defect complained of and the component is returned through an authorised Distributor, transportation paid. There is no informal dispute settlement available under this LIMITED WARRANTY.

The warranty does not allow for labour or travel.

The warranty does not cover Oasis Clearwater Treatment plants and related components that have flooded, by external means, or that have been disassembled by unauthorised persons, improperly installed, subject to external damage or damage due to altered or improper wiring or overload protection.

Other than the mechanical and structural working of the plant itself, Oasis Clearwater Systems Ltd is not responsible for the in-field operation of a plant. The proper operation of this or any other individual wastewater plant depends upon proper organic and hydraulic loading of the plant. We cannot control the loading and thereby cannot control the amount of harmful substances that may be discharged into the plant. Only the users of a plant can control what enters the unit. Therefore, we provide a comprehensive user's manual that outlines substances that should be kept out of the plant.

This LIMITED WARRANTY extends to the ultimate consumer of the product. As herein "ultimate consumer" is defined as the purchaser who first had the plant installed, or in the case of a system designed for non-permanent installation, the purchaser who first uses the system. It is the purchaser's or any sub-vendee's obligation to make known to any other consumer, the terms and conditions of this warranty.

This warranty is a LIMITED WARRANTY and no claim of any nature shall be made against Oasis Clearwater Systems Ltd unless and until the ultimate consumer, or his legal representative, notifies Oasis Clearwater Systems in writing of the defect complained of and delivers the product and/or defective part(s) freight prepaid, to Oasis Clearwater Systems Ltd or an authorised service agent.

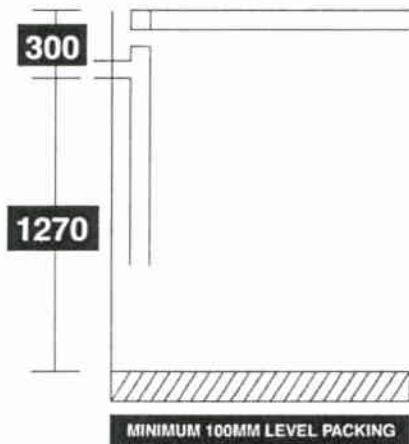
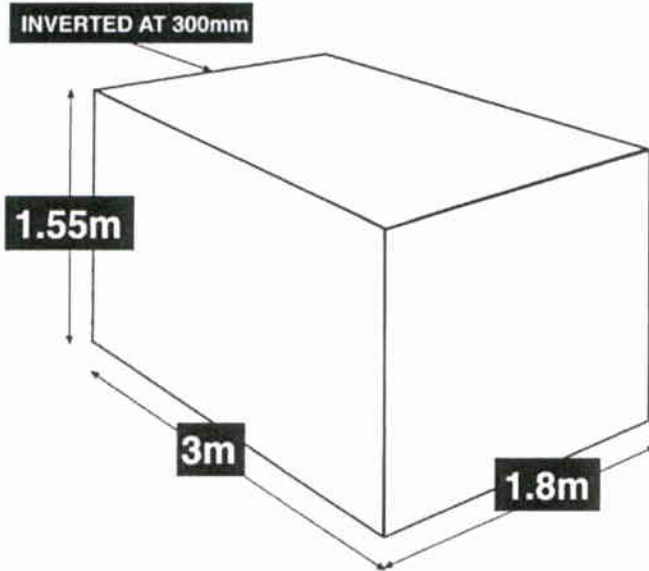
Oasis Clearwater Systems Ltd reserves the right to revise, change or modify the construction and design of the Clearwater Z54 Deluxe Treatment System, or any component part or parts thereof, without incurring any obligation to make such changes or modifications in equipment previously sold. Oasis Clearwater Systems Ltd also reserves the right, in making replacements of component parts under this warranty, to furnish a component part which, in its judgement is equivalent to the part replaced.

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INSTALLATION AND EXCAVATION DETAILS**Excavation Dimensions Clearwater Z54 Deluxe Unit**
4 metres x 2.5 metres x 1.5 metres

(Less optional extension turrets)



ELECTRICAL REQUIREMENTS**Clearwater Z54 Deluxe Site Wiring**

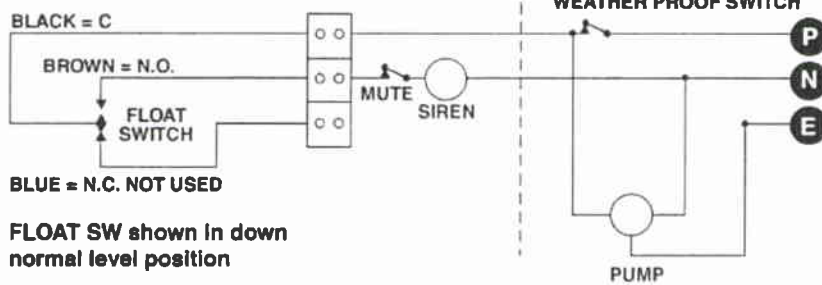
Provide a 240 V.A.C. single phase power supply to the post mounted weatherproof switch at the unit. Connect the high level alarm float switch to the connector inside the alarm enclosure.

FLOAT SWITCH BLACK	"COMMON"	To incoming phase
FLOAT SWITCH BROWN	"NORMALLY OPEN"	To middle connector
FLOAT SWITCH BLUE	"NORMALLY CLOSED"	To spare connector

NOTE: Blue "normally closed" cable is NOT used.

Connect Brown pump cable to load side of weatherproof switch (with cable to alarm) and terminate neutrals and earth wires.

WIRING WEATHERPROOF SWITCH TO ALARM IS COMPLETED BEFORE UNIT IS DELIVERED TO SITE.

ALARM ENCLOSURE

SECTION 8**SYSTEM MAINTENANCE, MONITORING & SERVICE**

Within the greater Canterbury area, Oasis Clearwater Systems offer an annual service and maintenance contract to ensure your system functions correctly.

Service procedure includes the following: -

1. Visual inspection of system to ensure correct biological function of system.
2. Septic and secondary chamber checked and biological breakdown of sewage analysed for correct operation of system. Client notified of correct timing for septic pump-out.
3. Zabel bacteriological filter cleaned and repositioned as necessary.
4. If pump fitted, unit removed, screen removed, impeller checked and unit fully cleaned of debris/build-up.
5. Field service report presented to owner and council verifying work carried out.



OWNER OPERATION MANUAL

**OASIS SERIES Z54
WASTEWATER TREATMENT SYSTEM**

Consent Issued BC122095



USER MANUAL

INSTALLATION INSTRUCTIONS

WARRANTY REGISTER

GREENGLO MAINS PRESSURE INTEGRATED WATER HEATER
SINGLE COIL SERIES & DOUBLE COIL SERIES
GREENGLO MAX

Customer

Congratulations for choosing a GreenGlo integrated water heater

We recommend you read page 1 to 5 of this manual.

It may save you time and trouble later.

Please register the product warranty as per page 20 of this manual

The other pages of the manual are intended for the installer.

For a further assistance or information contact our service desk

☎ 0800 447 336

✉ info@greenglo.co.nz

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendanm

GreenGlo are purposely-built heavy duty mains pressure cylinders. Installation of GreenGlo could be different than other tanks.

GreenGlo water heaters must be installed by a registered plumber and in accordance with these installation instructions, NZ.3500.4 National plumbing regulations; municipal building codes other relevant statutory regulations.

Observation of these instructions and the associated component instructions is most important and failure to do so could void the benefits of warranty.

The information contained in this manual, and all other information or advice provided by GreenGlo Limited in connection with the purchase, installation use and service of GreenGlo water heater is given in good faith. GreenGlo Limited will not be liable for any person for any inaccuracy or omission in the information arising through the fault of GreenGlo Limited directly or indirectly.

A pressure-limiting valve of 500kPa max rating must be fitted. Failure to install a pressure limiting valve where required will void the warranty.

SAFETY

Scalding occurs at 50°C. This appliance is capable of providing hot water above this temperature. All installers must advise customers of the potential hazard of scalding in accordance with the relevant National standards including NZS3500.4.

Young children should not play with the appliance.

A combination Temperature Pressure Relief valve with a maximum rating of 850kPa must be fitted.

Water may drip from the discharge pipe of this valve.

This pipe must be left open to the atmosphere.

For more information, please refer to the Regular Care section on page 5 of this manual.

Also fitted to the water heater is a special auto reset thermostat.

These safety devices must not be tampered with or removed from the appliance under any circumstances.

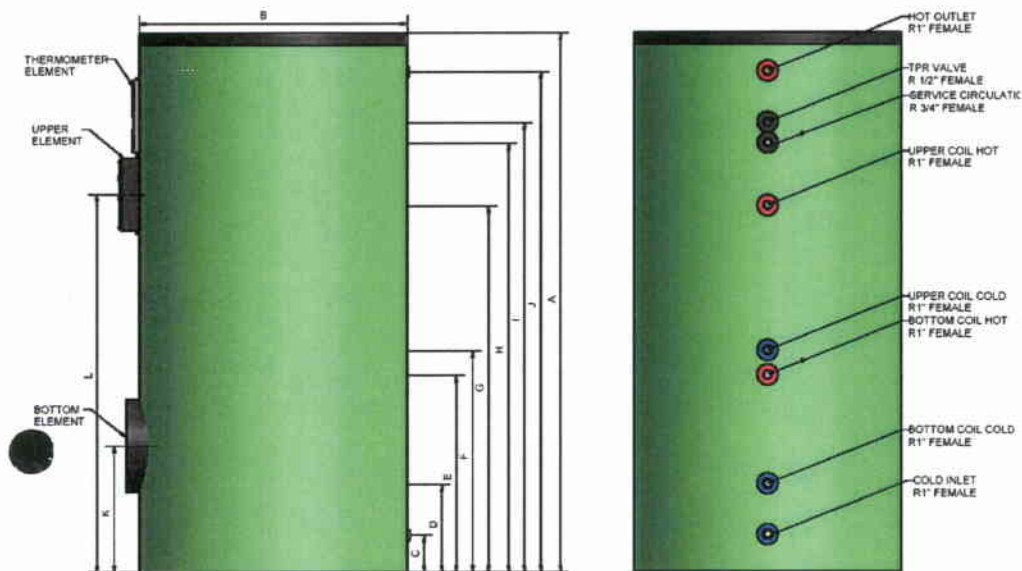
Use a separate circuit breaker for each of the electrical heating elements

1. GreenGlo & GreenGlo Max is a high technology storage tank, backed up by new manufacturing methods offering quality of goods to consumers.
2. The main goal of producing GreenGlo water heaters is heating and storing potable hot water in a main pressure storage tank using electricity. GreenGlo also offers optional heating equipment such as solar, gas and wetback. Potable hot water is stored in the main water storage tank separately from the heating fluids in the coils.
3. The heating fluid, which is heated in the heat source, is circulated between the heat source and cylinder's coil. The warmed fluid takes its heat from the heat source and transmits to the water heater.
4. GreenGlo cylinders inner surface is enamelled. The process used is a double enamelling process that coats the inside surface of the cylinder.
5. GreenGlo cylinders are protected by a magnesium anode rod in order to prevent cathode corrosion. The magnesium anode rod ought to be checked and replaced if required, every 36 months by a certified plumber, and can be done by following this manual page 16.
6. GreenGlo exterior surface is covered by 40 kg/m³ and 50 mm polyurethane insulation (except 800D and 1000D) in order to diminish the loss of the heat. The GreenGlo 800D and 1000D insulation is removable. This convenience allows easy delivery and access through narrow doorways. **Do not remove covers** unless essential and only after receiving specific instructions from GreenGlo service desk
7. GreenGlo is an indoor tank and shall be install in a well vented space to prevent condensation
8. There is a choice of double or single or double coil GreenGlo depending on the application needed. I.E. if the cylinder will be heated with a wetback or a solar system, GreenGlo single coil water heater would be appropriate. On the other hand, if the cylinder will be heated with both wetback and a solar system, GreenGlo double coil would be appropriate.
9. GreenGlo water heaters have been produced to suit a wide range of applications and installations and are complying with NZS4606
In this manual we present the most common applications, however if you require advice on any other application, please contact our service desk on 0800 447 336 or info@greenglo.co.nz

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PRODUCT INFORMATION

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Note: 800D & 1000D foam insulation is removable
Do not remove cover unless essential
Contact GreenGlo service desk before removal of cover
GreenGlo models have a soft blanket cover for extra insulation

GreenGlo Max

Dimensions may change without notice	180S	300S	180D	300D	400D
	Single Coil S Series		Double Coil D Series		
Volume (litres)	180	300	180	300	400
A – Height (mm)	1100	1800	1100	1800	1850
B – Diameter (mm)	575	575	575	575	630

Outdoor models are available



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PRODUCT INFORMATION

General product information

Maximum working pressure 800kPa
Maximum water temperature 90°C
Maximum coils working pressure 800kPa
Maximum heat exchange temperature 95°C
Enamelled steel automatically welded
50 mm polyurethane in accordance to NZS4692.1 and NZS4692.2
Indoor use only

Note : The product must not be exposed direct sunlight, rain, etc. Uninsulated pipework exposed to outdoor decrease heater performance & may increased energy consumption.

Specific product information

Dimensions may change without notice	180S	300S	180D	300D	300DS	400D	500D	800D	1000D
	Single Coil		Double Coil						
	S Series		D Series						
Volume (litres)	180	300	180	300	300	400	500	800	1,000
A – Height (mm)	1650	1780	1650	1780	1240	1580	1860	1750	2090
B – Diameter (mm)	520	615	520	615	755	755	755	1060	1060
C – Cold Inlet	180	80	180	80	95	75	60	395	395
Bottom Coil Cold	280	350	280	350	355	385	235	495	495
E – Bottom Coil Hot	500	655	500	655	565	595	690	870	920
F – Upper Coil Cold	N/A	N/A	570	755	655	690	780	965	1020
G – Upper Coil Hot	N/A	N/A	855	1210	865	1040	1320	1190	1510
H – Service Circulation	740	920	740	920	730	790	1010	710	760
I – TPR Valve	1430	1570	1430	1570	940	1300	1580	1270	1610
J – Hot Outlet	1585	1720	1585	1720	1100	1490	1765	1365	1715
K – Bottom Element	240	290	240	290	300	335	315	385	385
L – Upper Element	N/A	N/A	935	1285	N/A	1060	1395	1260	1580
Element Rating (kW)	3.0	3.0	2 x 2.0	2 x 2.0	3.0	2.0	3.0	4.8	4.8
O – Ports Thread	1" F	1" F	1" F	1" F	1" F	1" F	1" F	2" F	2" F
Tank Thickness (mm)	3	3	3	3	3	3	3	4	4
Angle of ports	45°R	45°R	45°R	45°R	45°R	45°R	45°R	90°R	90°R
Max energy Bottom coil (kW)	9.0	17.5	9.0	17.5	20.0	24.6	39.3	35.0	37.2
Max energy upper coil (kW)	N/A	N/A	13.6	26.2	30.0	39.3	54.0	70.0	89.3
Weight (kg)	90	112	103	127	128	198	229	293	326

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WATER QUALITY

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GreenGlo water heaters have been manufactured to deal with most local body water supplies. Desired water quality levels:

pH Level	between 6.5 and 8.5
Chlorides:	up to 200 ppm
Total Dissolved Solids (TDS)	up to 1000 mg/L
Saturation Index	between -0.8 and +0.8

If your water quality or the heating liquids are outside the above range, you should fit appropriate water filtration.

Caution:

If water TDS is above 600 mg/L, there is a possibility of hydrogen gas accumulating in the top of the water heater during long periods of no use.

If the water heater has not been used for more than 2 weeks:

- Open the hot water tap and let water flow for 1 minute.
- Hydrogen gas is flammable; therefore make sure that there is no smoking, sparks or naked flames near the tap.
- Do not operate any hot water appliance such as a washing machine or a dishwasher prior to the above procedure.

REGULAR CARE

Six Monthly:

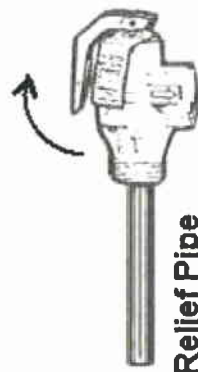
Near the top of the water heater you will find the TPR Valve (Temperature Pressure Relief Valve). Raise the lower lever and gently release some water into the relief pipe.

Note:

- If water does not flow down the relief pipe, or if water does not stop flowing once you released the lever, contact your plumber
- It is normal for the valve to release small amount of water during heating cycles
- Never block the relief drain pipe

Five yearly maintenance:

A qualified plumber should check and if needed replace the sacrificial anode in the water heater as per pages 16 & 17. Consider also replacement of the TPR valve, and clean coils of the cylinder via the clearing door if needed.



Delivering and mounting the GreenGlo cylinder

- The product should be kept away from sharp tools during loading or delivering and ports should be protected.
- The product should not be left or placed where it's exposed directly to weather such as direct sunlight, rain snow etc.
- Chose a dry and well vented space. Access moisture may cause tank condensation and may void the warranty.
- Mount the bottom of the tank clear of the floor. Usage of a drain tray is highly recommended
- If the product is installed on the floor, the floor must be dry and moisture-proof. Consider a drainage tray when required.
- If possible leave headroom of half water heater length so the anode can be inspected or replaced. Remember you may have to remove the entire water heater later for servicing as per pages 16 & 17.
- Cylinder must be strapped and mounted in accordance to NZS3500.4
- GreenGlo Limited does not accept any responsibility, if the product is physically damaged or operates inefficiently due to wrong handling
- The product must be carried vertically – if in doubt, **fasten** the bolts of the upper and lower dome prior to installation

Basic Plumbing connection of the Water heater

- The size of the GreenGlo tank needs to be chosen carefully in order to maintain the hot water supply demand.
- Start with the Basic Diagram of page 7 before conducting any specific application connection
- Fit the cold inlet valves prior to commissioning the cylinder
- Ensure that the TPR Valve is fitted and that the service circulation is **plugged off** or connected prior to filling up the cylinder with water
- Lag all hot water pipes coming out of the water heater

Plumbing Connection of additional applications

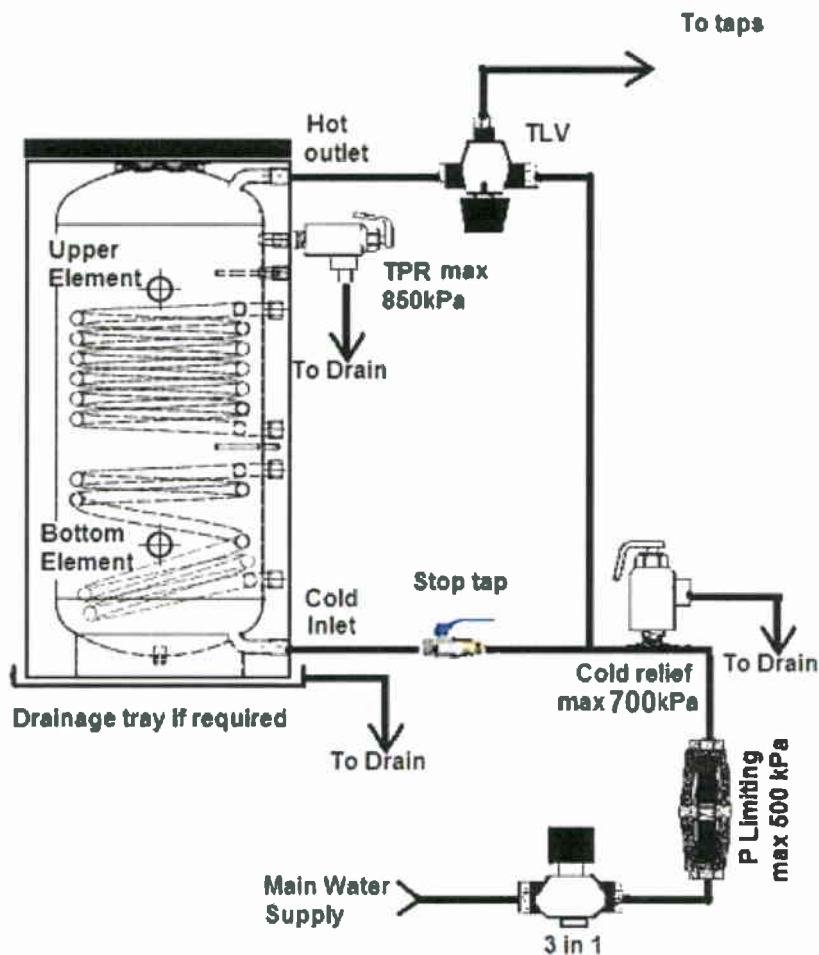
- Simply follow the diagrams and the notes of page 8 to 12
- If you are in doubt or attempting to install an application outside the below diagrams, please contact GreenGlo service desk for advice.

IMPORTANT NOTE:

When using brass fitting, use **PTFE** tape or a **dialectic connector** between the brass fitting and the port thread to prevent electrolysis.
Hemp is only allowed if Heldite is used

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GreenGlo basic plumbing connection diagram 11.2012



Important Notes:

Valves are not supplied with the water heater

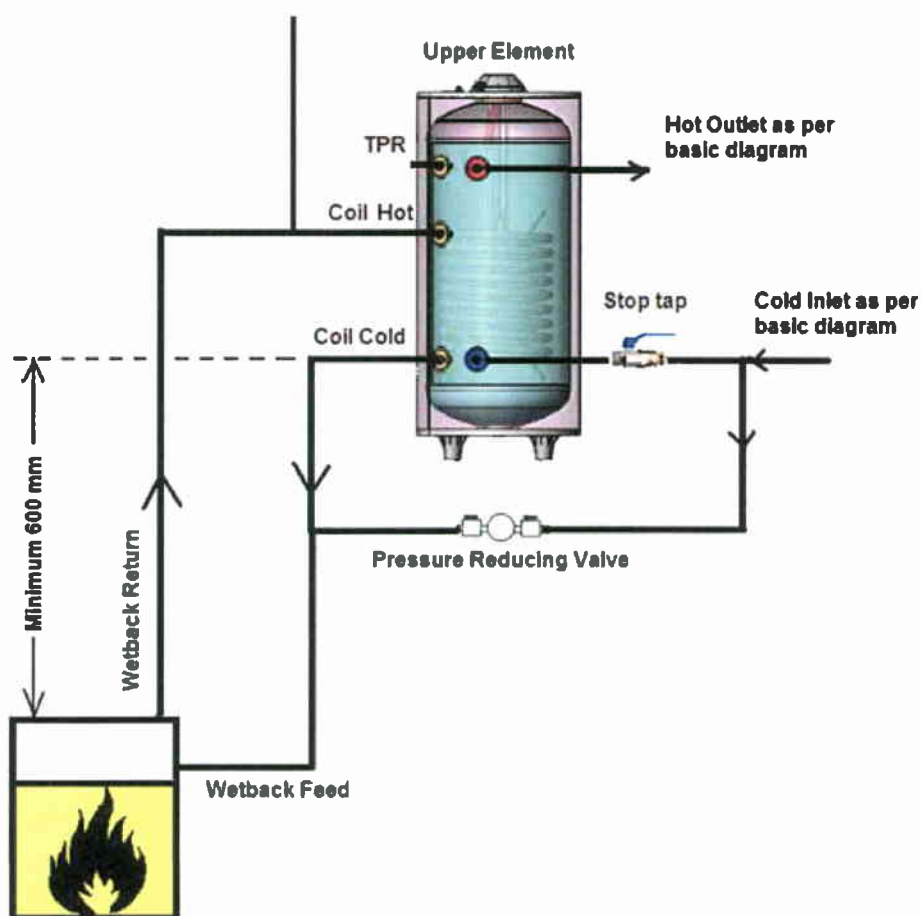
The above diagram describes valves for a mains pressure arrangement;

however the cylinder could also be fitted to a low pressure system.

GreenGlo tanks are equipped with a service circulation port.

Use this port for **ring main** or other external applications.

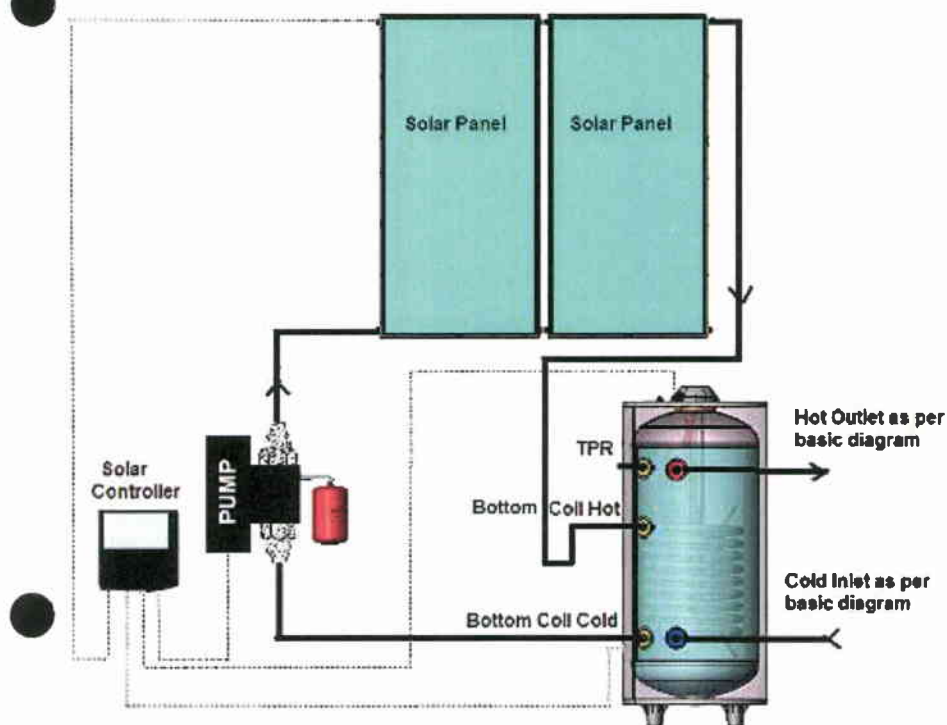
Consent Issued BC122095 Building Consent 122095
GreenGlo wetback plumbing connection diagram 2012



Important Notes:

1. No valves or restrictions are allowed on the wetback loop
2. When installing Wetback and Solar using GreenGlo D Series, connect wetback to upper coil and solar to bottom coil. Wetback should be installed to the bottom coil with all other multiple connections
3. Wetback output **shall not** be greater than 1kW per 100 litres storage.
4. **Add 100ml** of Fernox F1 or similar to the static water in the coil

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 GreenGlo Solar plumbing connection diagram 11.2012



Important Notes:

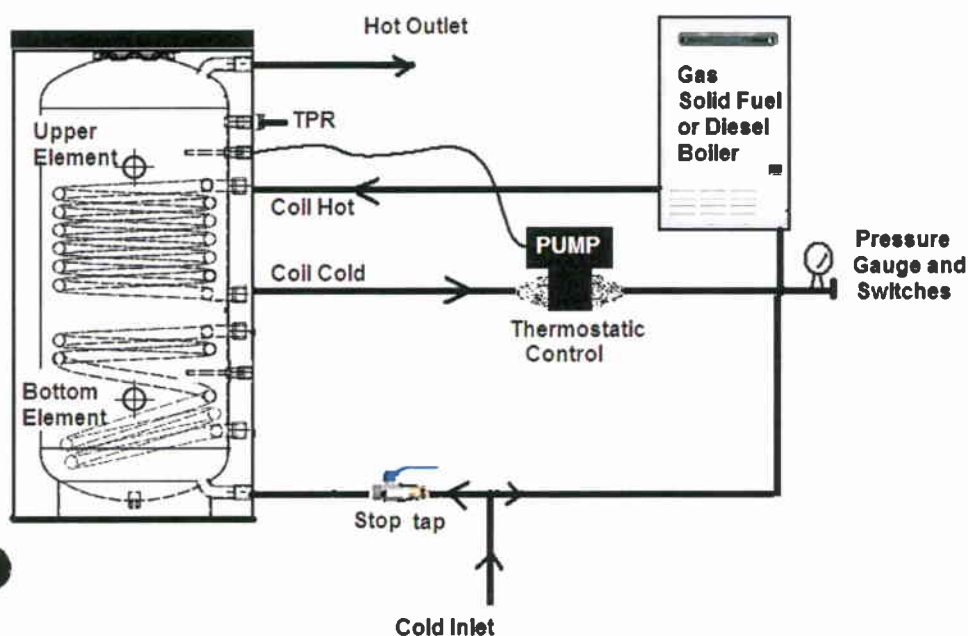
1. The diagram shows generic drawings of connections to and from GreenGlo cylinder. Follow the specific instructions of the solar panel supplier for the actual detailed arrangement, components and valves.
2. When using GreenGlo D series, solar collectors should be installed to the bottom coil - boiler, wetback or heaters should be installed to upper coil.
3. It is highly recommended running the solar system via the GreenGlo coil on a close loop arrangement. Open loop solar is also possible using the Service Circulation port for the solar return instead of the Coil Hot port, and branching off the Cold Inlet instead of using the Coil Cold port.
4. When connecting commercial solar systems, ensure that the energy going through the solar coil is lower than the max kW rating of the coil as per page 4. Excess energy above the coils rating will void the warranty.

Warning: Open loop solar carries frost risks to the panels if antifreeze is not used

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GreenGlo Gas/Solid Fuel/Diesel plumbing connection diagram



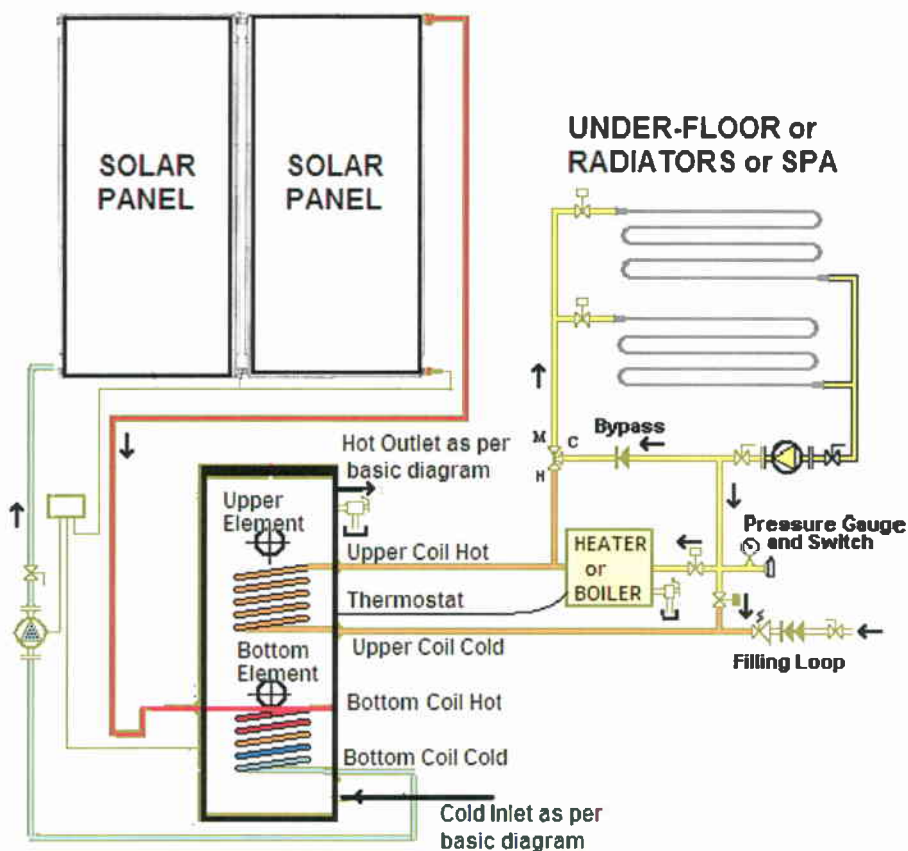
Important Notes:

1. The diagram shows generic drawings of connections to and from GreenGlo cylinder. Follow the specific instructions of the heater / boiler supplier for the actual detailed arrangement, components and valves.
2. The heater / boiler must have an integrated relief valve
3. The energy input of the boiler must be smaller than the max kW rating of the coil.
4. Excess energy above the coils rating will void the warranty.
5. The above diagram will maximize hot water flow rate of water.
6. Instantaneous water heaters should be installed after hot water outlet for temperature top up, in cases where high water flow is not required.
7. **Add 100ml** of Fernox F1 or similar to the static water in the coil

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**GreenGlo Solar ~~plus Heater/Boiler~~ ~~plus Underfloor Heating /~~
Radiator / SPA - plumbing connection diagram**

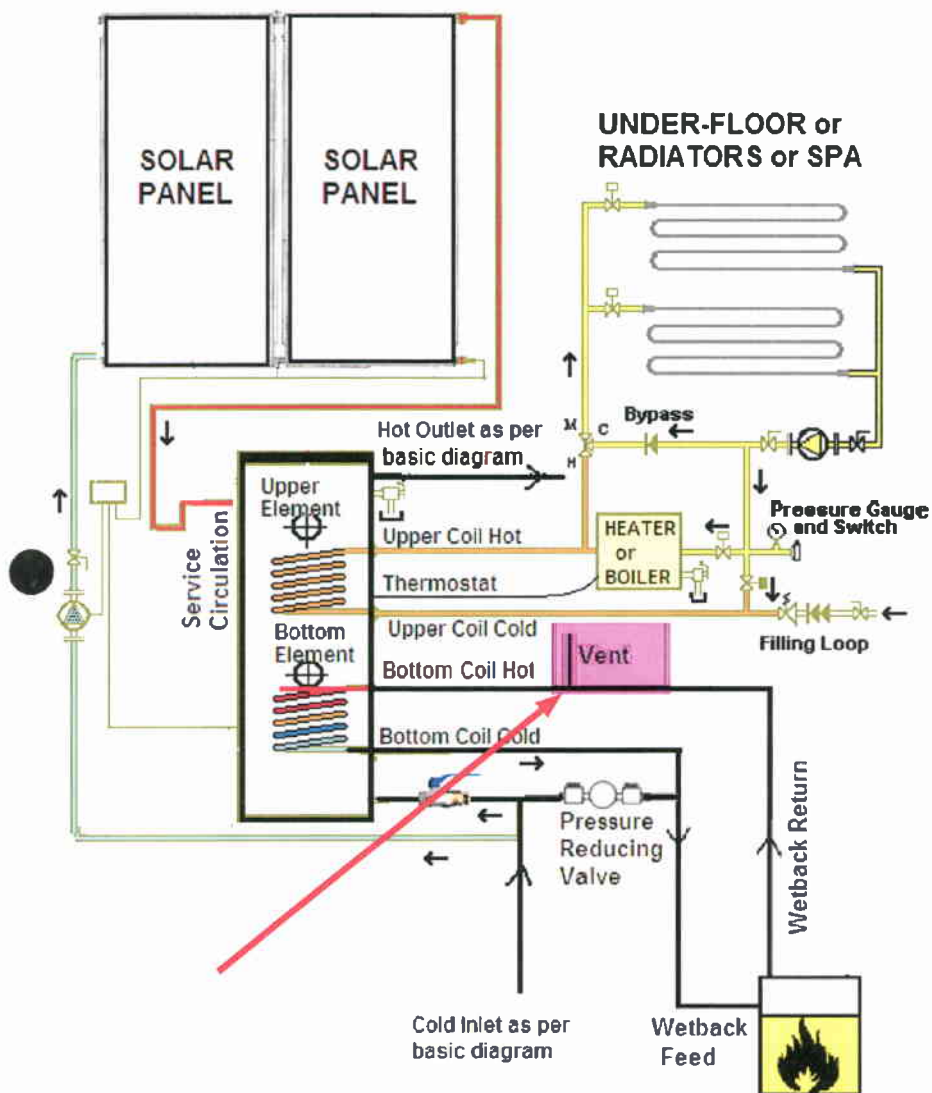


Important Notes:

1. Applicable for GreenGlo D series only
2. The diagram shows generic drawings of connections to and from GreenGlo cylinder. Follow the specific instructions for the heater / boiler supplier, the Solar Panels supplier and the Underfloor / Radiators or SPA supplier for the actual detailed arrangement, components and valves.
3. The heater / boiler must have an integrated relief valve
4. **Add 100ml** of Fernox F1 or similar to the static water in the boiler coil
5. The energy input of the boiler must be smaller than the max kW rating of the coil. Excess energy above the coils rating will void the warranty.

More options are available

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 GreenGlo Solar ~~plus Wetback plus Heater/Boiler~~ ~~plus~~ ~~plus~~
 Underfloor Heating / Radiator / SPA - plumbing diagram



Refer to the notes of page 11

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COMMISSIONING

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Building Consent 122095
Received 06.11.2012

VERY IMPORTANT:

Prior to turning on the power supply and prior to turning on any heating application such as solar, wetback or a heater, the cylinder MUST BE FILLED UP WITH WATER

- Open a hot water tap, making sure that all other hot water taps are shut down
- Open the inlet tap fully to fill up cylinder
- Open each hot water tap till water flows freely
- Check all pipes for leaks
- Switch on the elements and set the timer/controller (if one is installed)
- Attend to any other external heating applications

DRAINING THE WATER HEATER

- Turn off the power supply to the elements
- Turn off all external heating applications
- Turn off cold inlet supply at the 3 in 1 valve or at the meter
- Open a hot water tap to drain the pipework
- Disconnect the hot water outlet union
- Open to atmosphere Cold Water Expansion Valve to let water flow via the drain pipe

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ELECTRICAL CONNECTION

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NOTE: Power supply must be OFF until water heater filled with water
All electrical work must be carried out by a qualified person (per AS/NZS3000).
All water heaters are manufactured for 230VAC, 50HZ single phase.
GreenGlo 800D 1000D elements also capable to operate on a 3-phase 400VAC
A flexible 20mm conduit is required for the electrical cable to the water heater

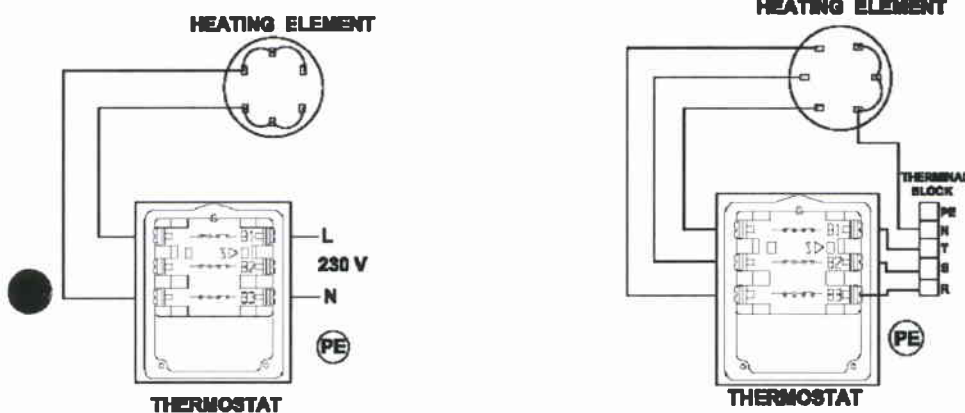
Booster Elements and Thermostats setting:

Adjust the thermostat temperature to the customer requirements.

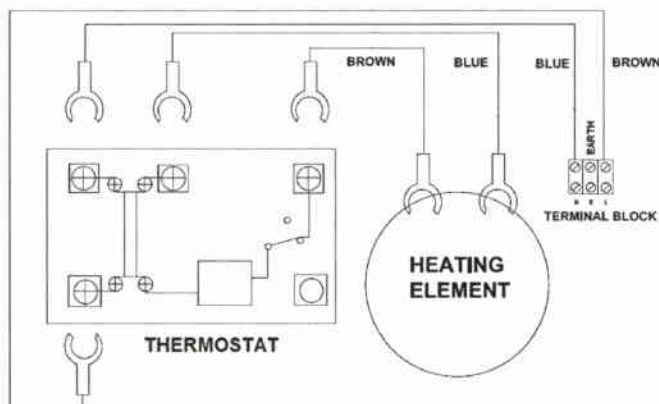
The booster elements and the thermostats are single phase factory pre-wired.

800D & 1000D on Single phase

800D & 1000D on Three phase



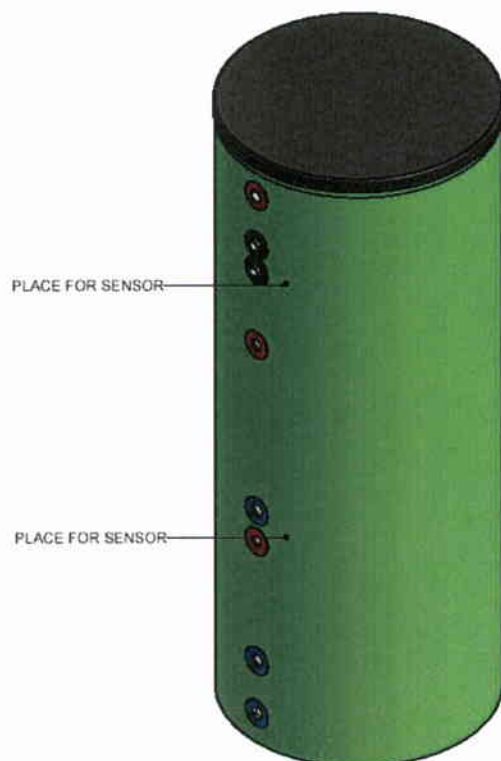
GreenGlo 180S to 500D pre-wired diagram



The lower element can be connected to the **Off Peak electricity supply**.

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SENSORS CONNECTION

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Received 06.11.2012



Sensors sense the temperatures when the cylinder is connected to heating applications, and transfer the reading to the controllers, such as 3 way valve, pumps and other electronic controllers.

Sensor pockets are located in the most appropriate level for heat distribution in the cylinder. Sensor holders must be used and supplied by the electronic control unit supplier. The holders attach the sensor to the surface which prevents the sensors from falling down from the pocket.

Make sure that probes are pushed all the way into the sensor tubes.

Use a thermal paste.

Secure the probe cable

Locate sensors above the electrical elements when required

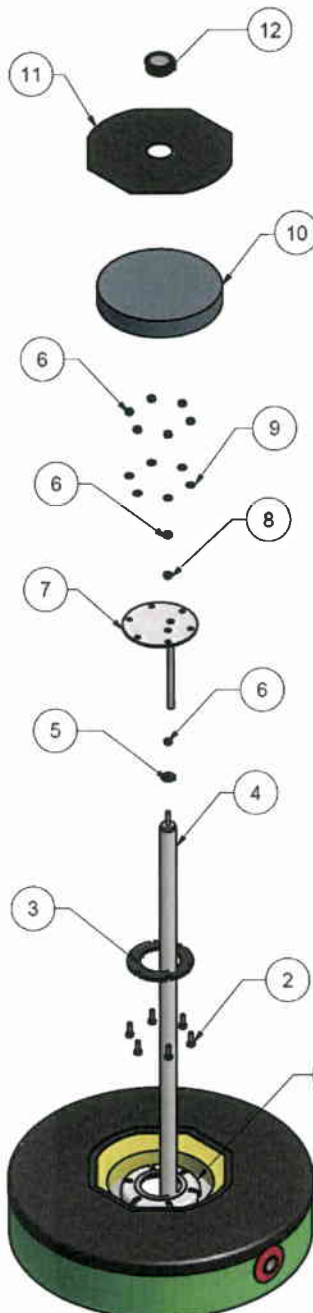
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dated 06.11.2012

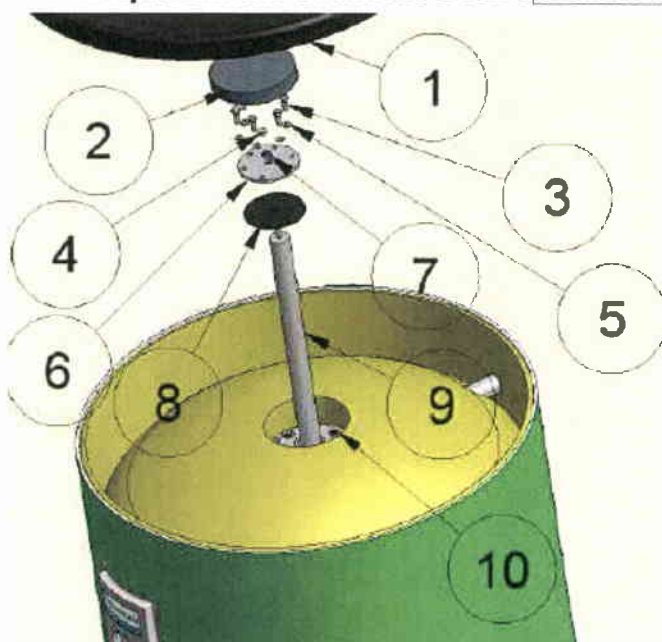
REGULAR CARE – SERVICE PERSON

Anode Replacement GreenGlo 180S, 180D, 300S, 300D



1. Disconnect the power supply to the water heater
2. Drain approximately 5 to 10 lt. from cylinder as per page 13 instructions.
3. Unscrew service cap (11) gently
4. Take out the soft foam insulation (10) and disassemble anode ground cable from flanges cap (7).
5. Disassemble the flanges (7) and then remove the flanges gasket (3).
6. Open the nut that is on the flanges (6) and attach it to the anode rod.
7. Remove old anode rod (4) over flanges and insulation gasket (5) and the washer (8).
8. Assemble new anode rod from the side of enamelled flanges (7); with a new insulation gasket (5) with a new washer (8) on the other side, and fasten the anode nut (6) over anode rod.
9. Return flange gasket (3) to position. Replace gasket if needed
10. Locate flange exactly central side of the cylinder flange. Fasten nuts in a cross tightening order as per page 18. Don't leave out nut flakes (6) – it needs to be directly opposite flange slots (1) as shown.
11. Conduct a pressure test and check for any leaks or sweat
12. Assemble insulation; place the tail of thermometer couple in the pocket, which is on the flange. Locate the service cap on the bush of top cap.

Anode Replacement Greenglo 300DS to 1000D



6. Disconnect the power supply to the water heater.
7. Drain approximately 5 to 10 lt. from cylinder as per page 13 instructions.
8. 800D & 1000D: Drain entire water from cylinder as per page 13.
9. Remove cylinder top cap (1)
10. Take out insulation carefully and disassemble anode ground cable from flanges cap (6) then from flanges (10).
11. Disassemble the flanges (6) and (3) by removing the nuts.
12. Remove the flanges gasket (8).
13. Disassemble the flanges nut (4) and attached the anode rod (9).
14. Remove old anode rod (9) over flanges and keep the anode isolation bush and anode gasket (8).
15. Assemble new anode rod from the side of enamelled flanges (7) and leave isolated bush (5) on the other side, and install nut over anode behind the beam gear side.
16. Locate flange gasket through inlet of the cylinder. Replace gasket if needed
17. Locate flange exactly central side of the cylinder flange. Fasten nuts in a cross tightening order per page 18. Don't leave out nut flakes (5) – it needs to be opposite flange number (1) as shown.
18. Close the service cap on the bush of top cap.

Consent Issued BC122095 Cylinder Coils Cleaning via Clearing Door

Building Consent 122095
06.11.2012

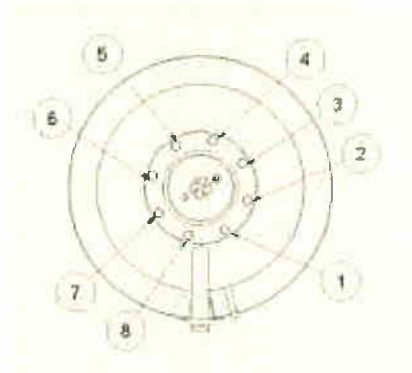
Access door is located on the cylinder top for GreenGlo 180S to 300D models.
Access door is located on the cylinder side for GreenGlo 300DS to 1000D.
GreenGlo access door dimensions are designed to the European standards.

Over the years, cylinder coils become covered with lime and other mineral deposit depending upon water quality. After a while, heat transfer will become difficult and the cylinder's efficiency reduces due to the deposits. Therefore, clearing the coils should be periodically done thru the access door.

1. Disconnect the power supply to the water heater
2. Drain entire water from cylinder as per page 13 instructions.
3. Remove nuts of access door and remove service door
4. Gently water blast coils removing the mineral deposits
5. Return access door ensuring that gasket is in place. Replace gasket if required
6. It is **essential** to tighten up access door nuts in the order shown below:

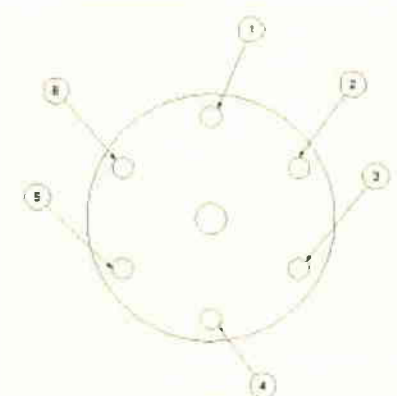
GreenGlo S Series, 180D, 300D

Order: 1-5, 3-7, 2-6 torque: 17Nm



GreenGlo 300DS to 1000D

Order: 1-4, 6-3, 2-5 torque: 8Nm



7. Fill up and pressurise water heater and check for leaks
8. Place a maintenance sticker on the water heater

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WARRANTY

Building Consent 122095
Received 06.11.2012

GreenGlo Limited will repair or if necessary replace a defective water heater or parts failure due to faulty manufacturing as per the following schedule:

Component	Installation	Warranty period	Coverage
All	All types of standard installations	First 12 months	Repair or replace 100% water heater and components free including labour at GreenGlo discretion
Internal heat exchanger	Domestic standard installations	Year 2 to 7	Repair or replace 100% water heater free. Owner responsible for installation and labour costs SUBJECT TO 5 YEARS SERVICE
Internal heat exchanger	Commercial and other standard installations	Year 2 & 3	Repair or replace 100% water heater free. Owner responsible for installation and labour costs
		Year 4 & 5	Repair or replace 50% of water heater value. Owner responsible for installation and labour costs

Durability

GreenGlo water heaters meet the requirements of NZS4606 given that:

1. Installed and maintained by a qualified person and according to the building code and this manual
2. Not damaged in any way
3. Water quality according to page 5 of this manual
4. Max kW Rating of all heater connections as per page 4 of this manual

Change of Ownership

This warranty extends beyond the original purchaser of the water heater.

Standard Installation

Standard installation includes all connections as per this manual and any other connections that may be approved by GreenGlo service desk.

The tank shall be accessible and easy to remove

122095

Consent Issued BC122095 Building Consent 122095
Received 06.11.2012

WARRANTY REGISTRATION

Warranty registration is highly important, as it confirms installation date and the type of installation to ensure that you enjoy the full benefits of the product warranty.

Registration **Option 1:** go to www.greenglo.co.nz under warranty register

Registration **Option 2:** Call our service desk on 0800 447 336

Registration **Option 3:** Fax the below form to 09 353 1445

Registration **Option 4:** Send the below form to
Solar Group Limited
PO Box 35588
Browns Bay, Auckland

Name: _____

Address: _____

Phone: _____

email: _____

Name of Installer: _____

Main Application: _____

e.g.. Wetback, Solar, Gas, etc

Domestic usage? Yes / No – if no specify: _____

GreenGlo Water Heater Model: _____

Product Serial Number: _____

Notes: _____



Consent Issued BC122095
REGULAR CARE LOGON

Installation Date:

6 months: TPR Valve check date:

12 months TPR Valve check date:

18 months TPR Valve check date:

2 years TPR Valve check date:

30 months TPR Valve check:

3 years service by: _____ date: ____/____/____

42 months TPR Valve check date:

4 years TPR Valve check date:

54 months TPR Valve check:

5 years service by: _____ date: ____/____/____

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19. Warranty Exclusions:

GreenGlo warranty will not cover the following situations:

1. Failure because of misuse, damage or neglect
2. Product is not installed or serviced in accordance with this manual or the NZ building code
3. Damage caused by an act of God
4. Water quality outside the range of page 5 of this manual
5. Connection of any associated heater with a max kW Rating higher than the coil capacity as per page 4 of this manual
6. Installation of tanks in moisture environment
7. Use of water temperature or pressure, or coil temperature or pressure, outside the restrictions of page 4 of this manual
8. Water hammer or negative pressure occurring in water pipework
9. Neglect to protect the coils with anti corrosive

Note:

- GreenGlo Limited is not liable for any sequential damages such as walls, carpets, furniture etc.
- Replacement parts provided under this warranty does not carry a new warranty. The unexpired warranty remains effective.
- GreenGlo Limited is only liable for the water heater and will not assume directly or indirectly any other obligations in connection with the product
- GreenGlo Limited does not cover access labour replacement costs of GreenGlo tanks installed: 30KM outside main centre, weekend charges, labour due to difficult access to tank
- You may have other rights in addition to this warranty under the Consumer Guarantee Act

Consent Issued BC122095

Building Consent 122095
Received 06.11.2012

Installer / Service Provider details



greenglo.co.nz

MESH SPECIFICATIONS

Xtra-Ductile
-500E

Specify and use with confidence.

Stock Code: SE 615-500STD

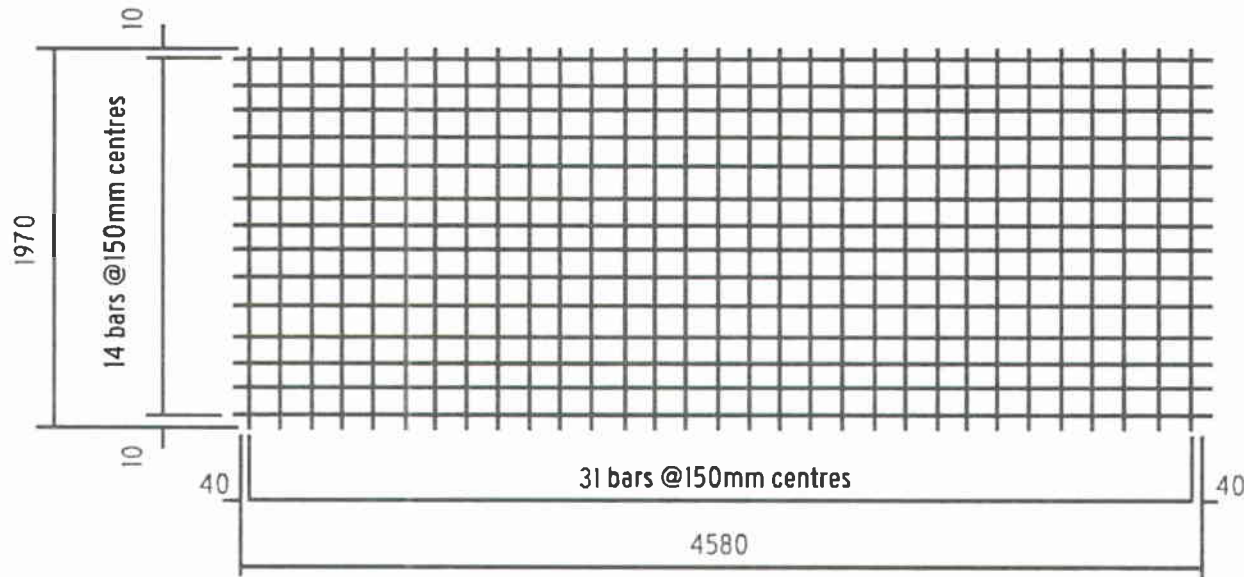
Product Description: SE 615-500 XTRA-DUCTILE MESH (4.58M X 1.97M)

Yield Stress: ≥ 500 MPA

Uniform Elongation: $\geq 10\%$

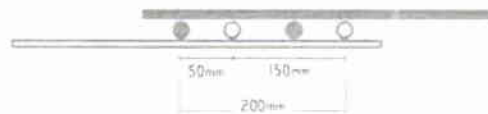
Weight per SQM: 2.490 kg/m²

Nett Cover: 7.525m²

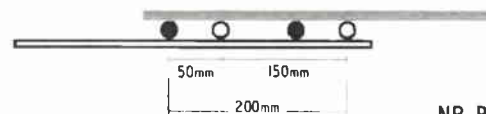


NB: Diagrams not to scale

LAPPING ON ENDS



LAPPING ON SIDES



NB: Based on NZS3101

	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 mm ² /m	
GROSS SHEET AREA	9.02 m ²	
CUBIC PER SHEET	0.1 m ³	
NO. OF SHEETS PER PACK	25	
PACK WEIGHT	584.41 kg	
PACK CUBIC	2.48 m ³	

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

EUROSTEEL
WE'RE RAISING THE BAR

www.eurocorp.co.nz

Standard Features of a Prestige Frameless Glass Shower

Showers are custom made - For a perfect fit.
 10 year guarantee on workmanship and materials*- For peace of mind
 30 years of experience - Practical no nonsense advice.
 Highest quality finish - We only accept the best
 Premium fittings. - Forged brass with polished chrome finish.
 Only toughened safety glass to NZ Standard 4223. - for your protection
 Fully trained installation technicians.
 Fast Lead time to installation - Less waiting time
 All sealants used are sanitary grade - Inhibiting mould discolouration.
 Optional clear splash strip under door. - For Improved water containment.
 After sales service is second to none.

SPECIFICATIONS

Wall and Floor channels	Aluminium Alloy 6063 T5 polished and anodized.
Hinges	Forged solid brass with polished chrome finish
Handles	Double "D" handle 250mm polished chrome
Toughened Safety Glass	Toughened to the NZ Standard NZ4223
Glass Thickness	Usually 10mm but other thicknesses available

Optional extras: **

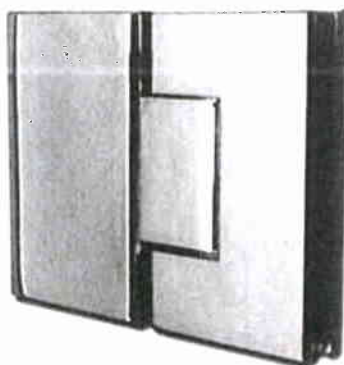
Handles:	A range of different handles are available
Protective Glass Coating	We can apply a protective coating to the glass prior to installation if required to improve cleaning
Ultra Clear Glass	We can supply Starphire 'White' glass if requested.
Tinted Glass	Many different coloured tints are available
Mirrors	We can supply and install frameless mirrors, glue or screw fixed.

* This guarantee does not cover damage through neglect or misuse

** Additional charges may apply



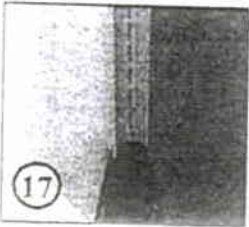
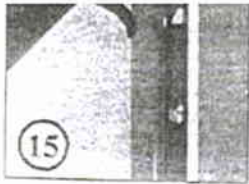
Standard Chrome 'D' Handle



Premium 180° Chrome Hinge

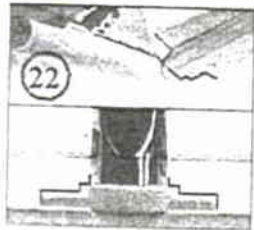


PF250 Frameless Glass Shelf



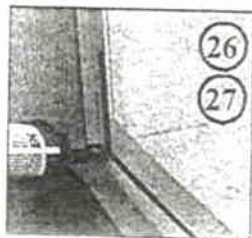
- 15 True up the enclosure using a spirit level. Ensure that the maximum position line is not visible on any of the aluminum joinery. (This is a vertical line on both the door assembly and return panel)
- 16 Test the door for operation. Realign if necessary. The door magnet should be in contact with the jamb magnet over its entire length.
- 17 After achieving alignment, from the inside, drill four 3 mm holes equally spaced down the screw indicator line on the return starter. A drilling mark is visible on all starter channels and corner posts to ensure correct position of screws in relation to other components.
- 18 Fix with 12mm stainless steel screws supplied. Cover all screws with plastic caps supplied.
- 19 Repeat the above procedure for the corner post and remaining door starter. Remove setting blocks from door sill on completion and re-check entire enclosure using spirit level.

FITTING SEALS



- 20 Remove the pivot seal from the rear edge of the glass door. (This will be replaced shortly)
- 21 Fit both Door Drip seals (long and short) to lower edge of glass door. Ensure the short angle blade faces towards the inside of shower.
- 22 Mark both seals around the pivot block, forming two steps over the profile of the block as indicated by the photo. Cut both seals as indicated. The seal should just clear the pivot block profile when the door closes.
- 23 Starting at pivot block end of seal, refit both door splash seals and check profile cut matches pivot block.
- 24 Refit the door pivot seal (removed earlier) to the rear edge of the door. Start above the door splash seals and working up.
- 25 Close door and check door splash seals are parallel to sill.

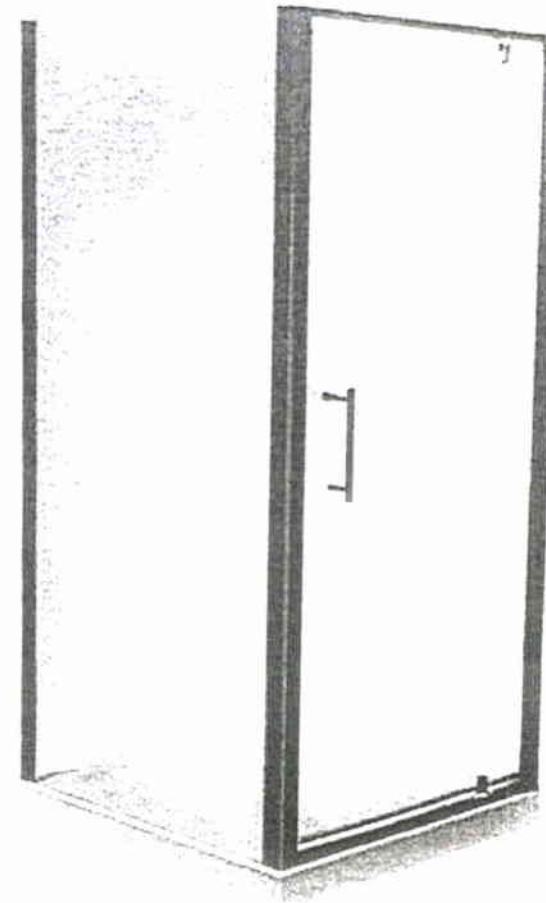
SEALING ENCLOSURE



- 26 Apply a small bead of silicone where ever the shower enclosure meets the tray. (The use of masking tape on the tray and glass ensures a neat finish.) Silicone is only applied to the OUTSIDE of the shower.
 - 27 Apply a small bead of silicone at each joint of the enclosure extending at least 100mm vertically from the tray.
- Allow silicone to cure for a minimum of 24 hours prior to use.

Door & Return

SEMI-FRAMELESS SHOWER ENCLOSURE INSTALLATION



**BEFORE INSTALLATION
CHECK THAT YOUR SHOWER
ENCLOSURE SYSTEM IS UNDAMAGED**

- 1 Electric or Cordless Drill
- 2 No.1 Square Drive screwdriver or screwdriver bit
- 3 Spirit Level
- 4 Soft Pencil
- 5 3.0mm Twist Drill Bit
- 6 Tape measure
- 7 Caulking gun
- 8 Sharp knife
- 9 Hacksaw with fine tooth blade (18 TPI)
- 10 Masking Tape

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BATHROOMS

Construction & Warranty

Athena Bathrooms (the "Company") warrants that products or product components manufactured and distributed by the Company ("Products"):

- meet or exceed the standard requirements of the New Zealand Building Code; and
- will be free from inherent defects in materials and workmanship for the extended warranty period applicable to the Product.

The Company will provide a replacement product or replacement part (or the nearest equivalent) free of charge where an Product is covered by this warranty. Any remedial works will not be covered by Athena Bathrooms.

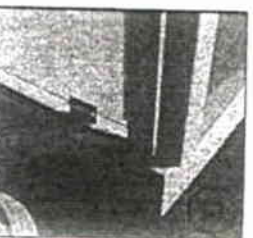
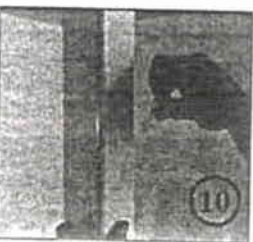
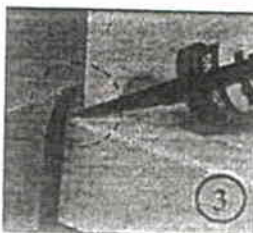
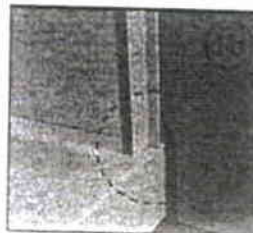
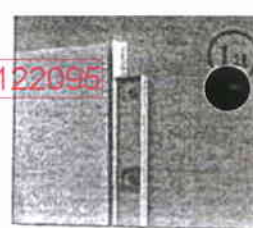
This warranty is transferable provided proof of purchase details are passed on to the new owner.

This warranty will not apply where the Products have been improperly installed, have been misused, proof of purchase cannot be provided or where the warranty claim has not been notified to the Company within three months of the problem first appearing.

Warranty claims should be sent to:

Athena Bathrooms
Private Bag 40902
Glenfield
Auckland

Consent Issued BC122095



GLASS RETURN

122095

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1. To one side, position the return starter, ensuring the flange overlays the edge of the lining. Check that the starter is plumb (1a). When fitted correctly the starter will be flush with the front edge of the tray (1b).
2. Drill three equally spaced holes down the length of the return starter and into the wall using a 3mm twist drill.
3. Apply silicone sealant where the tray and lining join, continuing 5mm in from edge of the lining. Ensure the end of the liner is sealed to tray.
4. Apply a continuous full length bead of silicone to the rear of the return starter.
5. Screw the return starter to the wall using the 30mm stainless steel screws provided. If there are no studs to fix to, then wall anchoring devices must be used. (Not supplied). Re-check for plumb.
6. Repeat the above procedure for the second return starter.
7. Slide the pre-assembled glass return into the return starter.

GLASS DOOR

8. Decide whether door is to be hinged on the left or right. (The door will always open outwards)
 9. Fit the corner post to the return starter
 10. During assembly use the clear adhesive tapes provided to temporarily hold the enclosure components together.
 11. Position the return panel so the corner post is near the edge of the tray. This will aid door installation.
 12. Fit the door assembly into the door starter, slide in fully.
 13. Align the door with the corner post and slide across into corner post.
- Do not remove the setting block from the sill of the door.
14. The door handle can now be attached. Ensure rubber washers are used either side of the glass. The larger internal knob can be attached either to the top or bottom of the handle

Shower Tray

Installation Instructions

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To achieve optimum results when installing your Athena shower it is important that the tray and walls of the shower are level and plumb respectively.

A Useful Guide

For every millimetre the tray is out of level, adjustment of the enclosure will be reduced by 2mm.

e.g. if the tray is 5mm out of level there may be no adjustment left to accommodate out of plumb walls.

1. Check the floor is level (1a.) and the walls are plumb (1b.) and square.
2. Athena showers have been designed for walls lined with **NEW** 10mm Gib Board or similar plaster wallboards that are **NOT** Gib stopped or painted.
3. Alcove (3 wall) shower trays should be installed prior to lining the wall with Gib Board or similar.
Standard shower trays (2 wall) may be installed before or after lining the walls as above.
4. Pre-lined Walls only: Place the tray on the floor against the Gib. Scribe a pencil line on the Gib 5mm above of the tray. (4.) Remove and cut out area marked to form tray recess.
5. Place the tray on the floor against the bottom plate of the framing, recessed into Gib if fitted. (5.)

6. Ensure the tray is level in all directions. (6a. Alcove : 6b. 2 Wall)

Important: Under no circumstances should 'Packers' be placed under the tray. *The underside of the tray must be fully supported.*

Concrete floors can be leveled using a leveling compound available from most flooring outlets.

Wooden floors can be sanded or use leveling compounds as for concrete floors.

7. Mark the position of the waste, remove the tray and cut the floor to allow for the waste. (7.)

Hole cut out for waste must not exceed 170mm square

Concrete floors must be back filled with concrete (or similar solid fill material) around the waste area or where any additional cuts in the concrete have been made.

8. The tray is supplied with a clear protective film to prevent surface damage. Remove the film from the anti spill (raised lip around rear edges of the tray) and waste areas only leaving the film intact on the remainder of the tray. This will protect the surface until installation is complete.

9. Install the lower body section of the easy clean waste. (if there is no access to the pipe work after the tray has been installed (e.g concrete floor) the waste must be installed to the pipe work first and the tray mounted over the top.

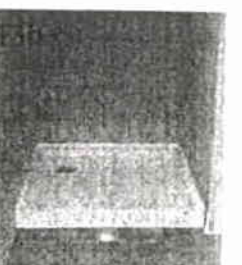
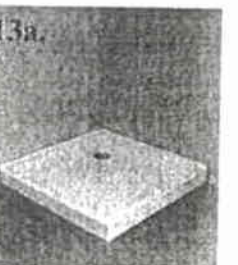
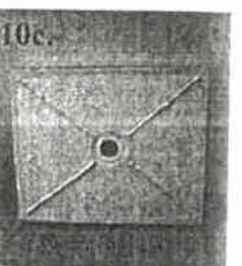
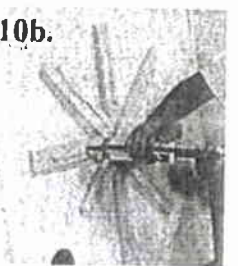
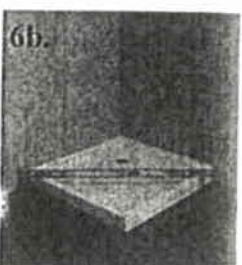
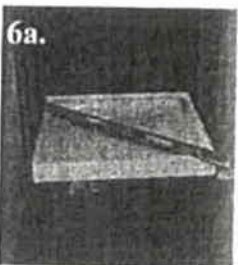
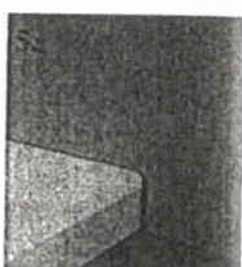
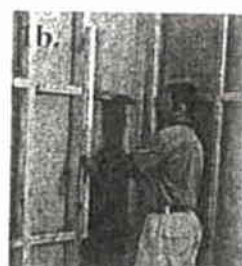
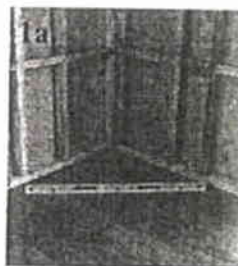
10. Apply diagonal beads of **Showerbond** adhesive to the underside of the tray. (See photos 10a, 10b & 10c for applicable adhesive pattern)

11. Place the tray in its final position.

12. Install the easy clean waste as per the instructions provided.
(Should be fitted by a qualified plumber)

13. Unlined walls can now be lined with **NEW** Gib Board or similar plaster wallboards. (13a. Installed 2 Wall : 13b Installed Alcove)

It is recommended not to stand on the tray until the Showerbond has cured (approx 24hrs).



Call 0800 ATHENA for all Enquires

senosan[®] antibac



Square Wall Liner

Installation Instructions

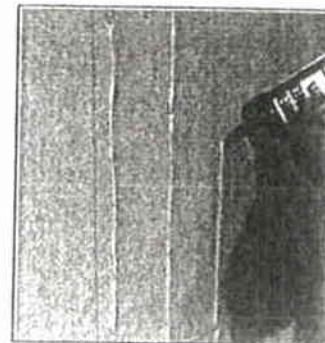
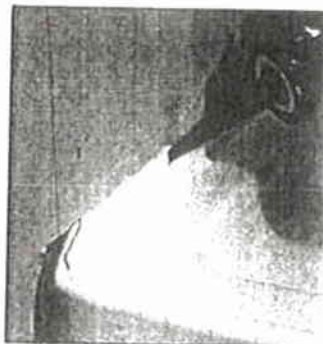
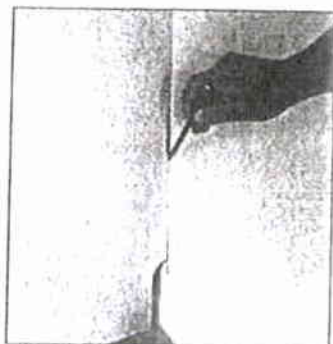
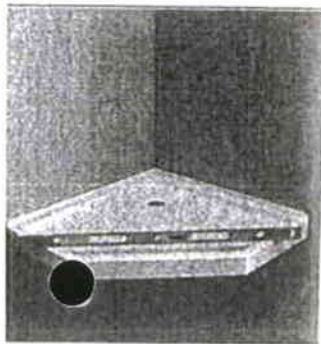
Consent Issued BC122095

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BATHROOMS

BEFORE INSTALLATION CHECK THAT YOUR ATHENA SQUARE LINER IS UNDAMAGED

- Check to ensure the shower tray has been installed in accordance with Athena Tray Installation Instructions.
- Your Athena Shower has been designed for walls lined with new Gib board or equivalent wallboards. **DO NOT** Gib stop or paint the area behind the wall liner prior to installation.
- Ensure that any plumbing outlets are situated as not to obstruct the door when opened.
(The trailing edge of Pivot doors swing into the shower area)



1. Trial fit wall lining by offering it into rear corner of tray. When correctly fitted the vertical edge of the liner will be sitting 3-10mm inside from the front edge of the tray. **The liner should sit square and flat to the tray surface.**
2. Scribe a line around the perimeter of the wall lining.
3. Carefully measure and cut out the wall liner for tap-ware.

Cutting and Drilling Instructions

- Hacksaw or Jigsaw with a minimum of 18 teeth per inch.
- Holes up to 12mm in diameter can be drilled with standard twist drill with a reduced cutting angle.
- Holes larger than 12mm diameter can be cut using a holes saw.
- Edges can be finished with medium grit sandpaper or planed with a hand plane.

Ensure wallboard and lining surfaces are free from dirt, dust and any other contaminants.

Apply a **continuous bead** of silicone sealant 10mm in diameter along the length of the upper inside edge of the anti spill. **Keep sealant as high as possible to eliminate it squeezing out under liner when fitted.**

Apply the wall adhesive in vertical lines 100mm apart, staying 10mm in from the marked outline of the wall liner. **Installation of liner must be complete within 15min to avoid premature curing of adhesive.**

Place wall lining into position and press firmly onto adhesive over entire surface. **Bracing is not required.**

Peel off protective film from lining and fit tap-ware. **DO NOT remove the trays protective masking yet.**

Seal the top edge of the wall liner with Selley's "No More Gaps" or a similar sealant.

The installation of the enclosure may begin immediately or as required.

**BRANZ Appraised**

Appraisal No.668 [2009]

BRANZ AppraisalsTechnical Assessments of products
for building and construction**BRANZ****APPRAISAL****No. 668 (2009)****REDGARD® INTERNAL
WATERPROOFING AND
CRACK PREVENTION
MEMBRANE**

Global Tile Ltd

PO Box 12504

Penrose

Auckland 1642

Tel: 09 6340712

Fax: 09 6342736

Web: www.globaltile.co.nz**BRANZ**BRANZ Limited
Private Bag 50 908

Porirua City

New Zealand

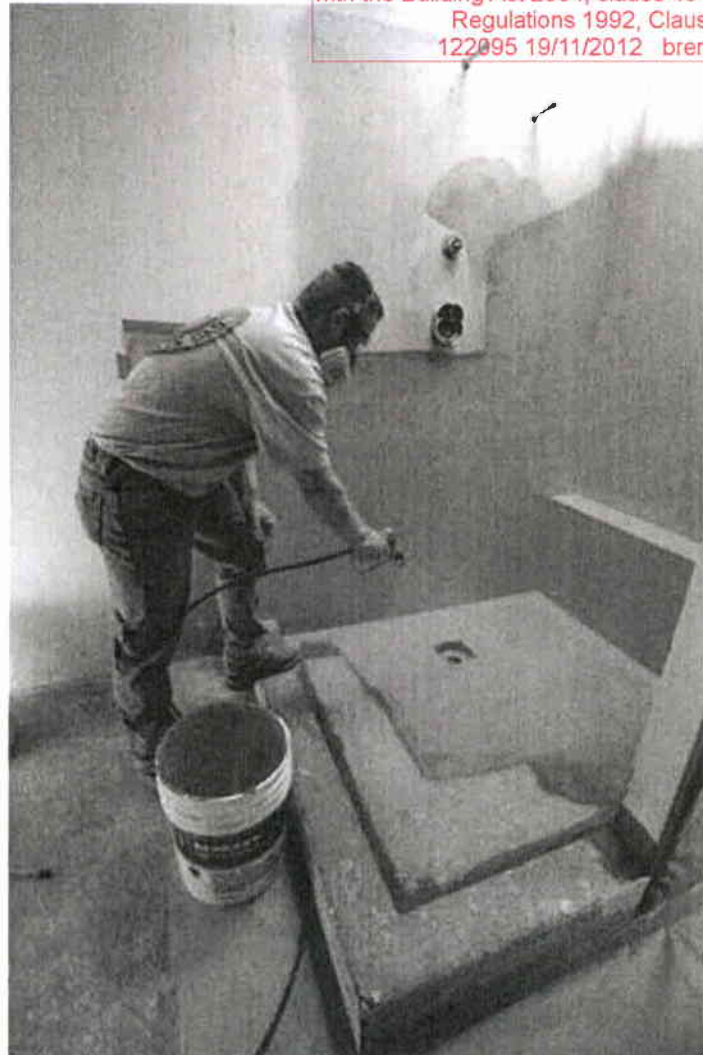
Tel: +64 4 237 1170

Fax: +64 4 237 1171

www.branz.co.nz

1.1 RedGard® Waterproofing and Crack Prevention Membrane is a single part liquid-applied waterproofing membrane for use under ceramic or stone tile finishes in internal wet areas.

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendan



Processed and Approved for validation by agent.
122095 11/6/2012 Steve Dale

2.1 RedGard® Waterproofing and Crack Prevention Membrane has been appraised for use as a waterproofing membrane for internal wet areas of buildings, within the following scope:

- on floor substrates of concrete, compressed fibre cement sheet and fibre cement sheet tile underlay, and on wall substrates of concrete, concrete masonry, wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
- when protected from physical damage by ceramic or stone tile finishes; and,
- where floors are designed and constructed such that deflections do not exceed 1/360th of the span.

2.2 The use of RedGard® Waterproofing and Crack Prevention Membrane on concrete slabs where hydrostatic or vapour pressure is present is outside the scope of this Appraisal.

2.3 Building structural movement and control joints in the substrate must be carried through to the tile finish. The design and construction of the substrate and movement and control joints are specific to each building, and therefore the responsibility of the building designer and building contractor and are outside the scope of this Appraisal.

2.4 Ceramic or stone tile finishes are outside the scope of this Appraisal.

2.5 The membrane must be installed by Global Tile Ltd trained and approved applicators.

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, RedGard® Waterproofing and Crack Prevention Membrane if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years. RedGard® Waterproofing and Crack Prevention Membrane meets this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating RedGard® Waterproofing and Crack Prevention Membrane will meet this requirement. See Paragraphs 11.1- 11.6.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. RedGard® Waterproofing and Crack Prevention Membrane meets this requirement and will not present a health hazard to people.

This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

4.1 Materials supplied by Global Tile Ltd are as follows:

RedGard® Waterproofing and Crack Prevention Membrane

- A ready to use, styrene-butadiene rubber co-polymer based, elastomeric, waterproofing and crack prevention membrane for exterior and interior applications. It is supplied as a pink liquid in 3.78 or 13.2 litre containers.

Custom Waterproofing and Anti Fracture Mesh

- A high strength, polymer coated, alkali resistant fibreglass mesh tape for reinforcing any changes of plane, corners, around drains and over minor substrate cracks. It is supplied as a 150 mm wide x 45.72 m long roll.

Handling and Storage

5.1 All materials must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions. The membrane products have a shelf life of 12 months from date of manufacture in the original unopened packaging. Once opened, the products must be used within 3 months.

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the RedGard® Waterproofing and Crack Prevention Membrane. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

General

7.1 RedGard® Waterproofing and Crack Prevention Membrane is for use in buildings where an impervious waterproof membrane is required to floors and walls to prevent damage to building elements and adjoining areas.

7.2 The membrane must be protected from physical damage by the application of ceramic or stone tile finishes.

7.3 Movement and control joints may be required depending on the shape and size of the building or room, and the tile finish specified. Design guidelines can be found in the BRANZ "Good Practice Guide Tiling".

7.4 Timber framing systems must comply with NZS 3604, or where specific engineering design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604, or comply with the serviceability criteria of AS/NZS 1170. Timber framing systems supporting the substrates must be constructed such that deflections do not exceed 1/360th of the span. Where NZS 3604 is used, the allowable joist spans given in Table 7.1 shall be reduced by 20%. In all cases framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported.

7.5 RedGard® Waterproofing and Crack Prevention Membrane must not be used to bridge or cover over existing expansion, control, construction, cold or saw cut joints.

Substrates

Fibre Cement Compressed Sheet/Fibre Cement Sheet Tile Underlay

8.1 Fibre cement compressed sheet and tiling underlay must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use as a wet area substrate. Fibre cement sheet tile underlay must be covered by a valid BRANZ Appraisal for use in internal wet areas. Installation must be in accordance with the instructions of the manufacturer.

Concrete and Concrete Masonry

8.2 Concrete and concrete masonry substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101 and NZS 3604 Concrete Slab-On-Ground Floors and Concrete masonry to NZS 4229 and NZS 4230.

Wet Area Wall Linings

8.3 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588, and be covered by a valid BRANZ Appraisal for use in internal wet areas.

8.4 Fibre Cement Sheet must comply with the requirements of AS 2908.2.

Durability

Serviceable Life

9.1 RedGard® Waterproofing and Crack Prevention Membrane, when subjected to normal conditions of environment and use, is expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15-25 years.

Maintenance

10.1 No maintenance of the membranes will be required provided significant substrate movement does not occur and the tile finish remains intact. Regular checks must be made of the tiled areas to ensure they are sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the tiles, grouts and sealants.

10.2 In the event of damage to the membranes, the tiling must be removed and the membrane repaired by removing the damaged portion and applying a patch as for new work.

10.3 Drainage outlets must be maintained to operate effectively, and ceramic or stone tile finishes must be kept clean.

Internal Moisture

11.1 RedGard® Waterproofing and Crack Prevention Membrane is impervious to water and when appropriately designed and installed will avoid the likelihood of water penetrating behind linings or entering concealed spaces.

11.2 RedGard® Waterproofing and Crack Prevention Membrane is suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of Code Compliance for overflow is given in NZBC Acceptable Solution E3/AS1 Paragraph 2.

11.3 Surfaces must be finished with ceramic or stone tile finishes. A means of Code Compliance to NZBC Clause E3.3.3 and E3.3.4 is given in NZBC Acceptable Solution E3/AS1 Paragraph 3.1.1 (b), 3.1.2 (b) and 3.3.1 (b).

11.4 Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1500 mm out from the shower rose. Floor wastes must be provided and the floor must fall to the outlet.

11.5 The waterproofing membrane must completely cover shower bases, and for unenclosed showers it must extend a minimum of 1500 mm out from the shower rose. Further design guidance on waterproofing wet areas, including waterproofing walls and junctions can be obtained from AS 3740, BRANZ "Good Practice Guide Tiling", and flooring and wallboard manufacturers.

11.6 Where water resistant wall finishes such as prefinished sheet materials are used, they must flash over the membrane a minimum of 30mm.

Installation Skill Level Requirement

12.1 Installation of the membrane must be completed by Global Tile Ltd trained and approved applicators that have experience in the application of waterproofing membranes and understand waterproofing principles.

12.2 Installation of substrates must be completed by tradespersons with an understanding of internal wet area construction, in accordance with instructions given within the Global Tile Ltd Technical Literature and this Appraisal.

Preparation of Substrates

13.1 Substrates must be dry, clean and stable before installation commences. With surfaces that are even and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents.

13.2 The relative humidity of the concrete must be 75% or less before membrane application. Concrete substrates can be checked for dryness by using a hygrometer as set out in BRANZ Bulletin No. 424.

13.3 All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface. Junctions of substrate abutments, such as at wall/floor and wall/wall junctions greater than 3 mm must have Custom and Waterproofing Anti Fracture Mesh installed as set out in the Technical Literature.

Membrane Installation

14.1 Installation must not be undertaken where the substrate surface temperature is below 4°C or above 35°C.

14.2 RedGard® Waterproofing and Crack Prevention Membrane must be thoroughly stirred before application.

14.3 The membrane must be applied in a minimum of two coats at the rates set out in the Technical Literature. Subsequent coats must be applied in an opposite direction to the previous coat. The total finished system thickness of the RedGard® Waterproofing and Crack Prevention Membrane must be a minimum of 1.2 mm.

14.4 Application can be made by roller (rough textured), a notched steel trowel or airless sprayer.

14.5 Any changes of plane or cracks where movement may occur must be reinforced with the Custom and Waterproofing Anti Fracture Mesh imbedded in the membrane before a full coat of the membrane is applied. In all other situations, reinforcement provisions as set out in this Appraisal and the Technical Literature apply.

14.6 Clean up may be undertaken with water.

Tiling

15.1 The membrane must be fully cured before tiling; this would generally be indicated by the colour change from pink to red. The cured membrane must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.

15.2 Tiling must be undertaken in accordance with AS 3958.1 and BRANZ "Good Practice Guide Tiling". The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Global Tile Ltd.

Inspections

16.1 Critical areas of inspection are:

- Construction of substrates, including crack control and installation of bond breakers and movement control joints.
- Moisture content of the substrate prior to the application of the membrane.
- Acceptance of the substrate by the membrane installer prior to application of the membrane.
- Installation of the membrane to the manufacturer's instructions, particularly installation to the correct thickness and use of reinforcement.
- Membrane curing and integrity prior to the installation of tiles including protection from mechanical damage during curing and prior to tile installation.

Health and Safety

17.1 Safe use and handling procedures for the membranes are provided in the Technical Literature. The materials must be used in conjunction with the relevant Material Safety Data Sheet.



The following is a summary of the technical investigations carried out:

Tests

18.1 The following testing of RedGard® Waterproofing and Crack Prevention Membrane has been undertaken by various organisations:

- Testing to Acceptance Criteria AC115 Acceptance Criteria for Waterproofing Membranes for Flooring and Shower Liners.
- Testing for seam strength, breaking strength, dimensional stability, resistance to water, resistance to fungi and static head.
- Testing for tensile strength, elongation, water vapour permeance, water swelling, wet adhesion to concrete and tear resistance.

The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

19.1 An assessment was made of the durability of the RedGard® Waterproofing and Crack Prevention Membrane by BRANZ technical experts.

19.2 Site visits have been carried out by BRANZ to assess the practicability of installation and to examine completed installations.

19.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

20.1 The manufacture of the membrane has not been examined by BRANZ, but details regarding the quality and composition of the materials was obtained by BRANZ and found to be satisfactory.

20.2 The quality management system of the membrane's manufacturer has been assessed and found to be satisfactory.

20.3 The quality of manufacture of the membrane is the responsibility of the manufacturer.

20.4 The quality of supply of the membrane system materials to the market is the responsibility of Global Tile Ltd.

20.5 Quality on site is the responsibility of the Global Tile Ltd approved and trained applicators.

20.6 Designers are responsible for the substrate design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of the substrate manufacturer, Global Tile Ltd and this Appraisal.

20.7 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of Global Tile Ltd.

Sources of Information

- AS 2908.2: 2000 Cellulose-cement products - flat sheet.
- AS 3740: 2004 Waterproofing of wet areas within residential buildings.
- AS 3958.1: 1991 Guide to the installation of ceramic tiles.
- AS/NZS 1170: 2002 Structural design actions.
- AS/NZS 4858: 2004 Wet area membranes.
- AS/NZS 2269:1994 Plywood - Structural.
- NZS 3101: 1995 The design of concrete structures.
- NZS 3604: 1999 Timber framed buildings.
- NZS 4229:1999 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230:1990 Code of practice for the design of masonry structures.
- New Zealand Building Code Handbook Department of Building and Housing, Third Edition May 2007.
- The Building Regulations 1992, up to, and including August 2008 Amendment.
- Good Practice Guide Tiling, BRANZ, March 2004.
- Good Practice Guide Membrane Roofing, BRANZ, October 2003.

In the opinion of BRANZ, the RedGard® Internal Waterproofing and Crack Prevention Membrane is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Global Tile Ltd, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. Global Tile Ltd:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
4. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by Global Tile Ltd.
5. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
6. BRANZ provides no certification, guarantee, indemnity or warranty, to Global Tile Ltd or any third party.

For BRANZ

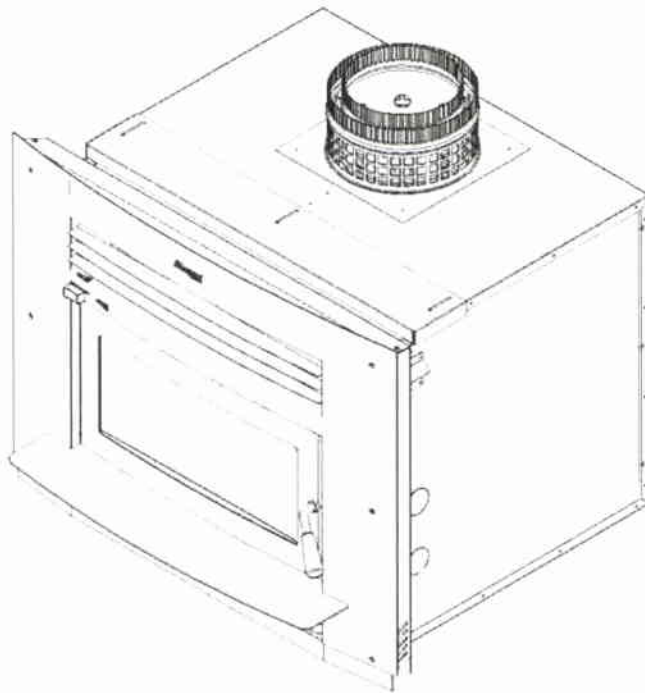
P Burghout
Chief Executive

Date of issue: 21 December 2009



MASPORT I3000 INBUILT FIRE INSTALLATION INSTRUCTIONS

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendam



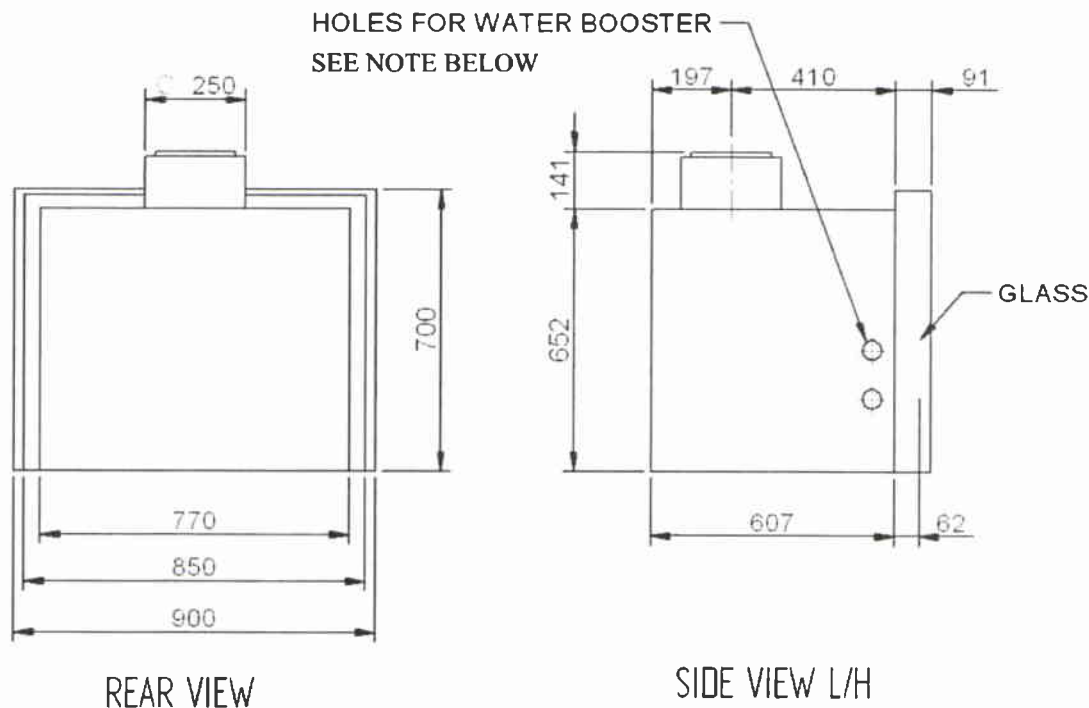
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CONTENTS ZERO CLEARANCE BOX (SHIELDING BOX) KIT

PART NO.	QTY	DESCRIPTION
523031	2	WASHER DIA 6
521635	6	SCREW HEX. 10G X 10mm
521637	8	SCREW HEX. 12G X 25mm
521643	38	SCREW HEX. 8G X 13mm
521076	2	SCREW HEX. M6 X 16mm
593374	1	ADAPTOR SPIGOT RING
993591	1	L/H SIDE PANEL ASSEMBLY
993592	1	R/H SIDE PANEL ASSEMBLY
993594	1	REAR PANEL ASSEMBLY
993590	1	BOTTOM PANEL ASSEMBLY
993595	1	TOP PANEL ASSEMBLY
993593	1	TOP SHIELD ASSEMBLY
993527	1	SUPPORT ANGLE
993550	1	ZERO CLEARANCE INFILL PANEL



DIMENSIONS:**Fig. 1**

NOTE: The water booster can be installed with connections at right side or left side of fire. You need to check with your local council if you are allowed to have a water booster installed in that fire.

INTRODUCTION

In the interest of your safety, most building regulatory Authorities in Australia and New Zealand require any woodfire installation to comply with Installation Standard AS/NZS 2918:2001. They may also have local requirements in addition to those in the Standard. Check with your local Building Authority **before commencing installation** to find if you will require a Permit and whether there are extra requirements. This woodfire has been tested to ensure that it will meet the appropriate safety Standard requirements if these instructions are followed. As the safety and emission performance can be affected by altering the appliance, no modifications are allowed without written permission from the manufacturer.

The model I3000 has been tested to demonstrate compliance with current general emission requirements in Australia and New Zealand, but some areas have stricter limits. So **check before** purchasing or installing the requirements for your area.

WE RECOMMEND THAT THE INSTALLATION OF YOUR MASPORT WOODFIRE BE CARRIED OUT BY A QUALIFIED SPECIALIST INSTALLER.

IF ANY ELECTRICAL WORK IS REQUIRED, IT MUST IT MUST BE CARRIED OUT BY A LICENSED ELECTRICIAN.

IN SOME REGIONS POWER POINTS ARE NOT PERMISSIBLE WITHIN THE FLOOR PROTECTOR AREA, PLEASE CHECK WITH YOUR LOCAL AUTHORITY.

IF THE SUPPLY CORD IS DAMAGED, IT MUST BE REPLACED BY THE MANUFACTURER OR ITS SERVICE AGENT OR A SIMILARY QUALIFIED PERSON IN ORDER TO AVOID ELECTRICAL HAZARD.

WARNING: THE APPLIANCE AND FLUE SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH AS/NZS 2918:2001 AND THE APPROPRIATE REQUIREMENTS OF THE REVELANT BUILDING CODE OR CODES.

WARNING: APPLIANCES INSTALLED IN ACCORDANCE WITH THIS STANDARD SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS 4013 WHERE REQUIRED BY THE REGULATORY AUTHORITY, I.E. THE APPLIANCE SHALL BE IDENTIFIABLE BY A COMPLIANCE PLATE WITH THE MARKING 'TESTED TO AS/NZS 4013'. ANY MODIFICATION OF THE APPLIANCE THAT HAS NOT BEEN APPROVED IN WRITING BY THE TESTING AUTHORITY IS CONSIDERED TO BE IN BREACH OF THE APPROVAL GRANTED FOR COMPLIANCE WITH AS/NZS 4013.

WARNING FOR APPLIANCES WITH WATER HEATING DEVICES: DO NOT CONNECT TO AN UNVENTED HOT WATER SYSTEM. INSTALL IN ACCORDANCE WITH AS 3500.4.1 OR NZS 4603 AND THE APPROPRIATE REQUIREMENTS OF THE REVELANT BUILDING CODE OR CODES.

PLEASE ENSURE THAT ONLY COMPONENTS APPROVED BY GLEN DIMPLEX AUSTRAL-ASIA LTD ARE USED FOR INSTALLATION, as substitutes may adversely affect performance and might nullify compliance with the requirements of AS/NZS 2918:2001.

CAUTION: MIXING OF APPLIANCE OR FLUE SYSTEM COMPONENTS FROM DIFFERENT SOURCES OR MODIFYING THE DIMENSIONAL SPECIFICATION OF COMPONENTS MAY RESULT IN HAZARDOUS CONDITIONS. WHERE SUCH ACTION IS CONSIDERED, THE MANUFACTURER SHOULD BE CONSULTED IN THE FIRST INSTANCE.

CAUTION: CRACKED OR BROKEN COMPONENTS, E.G. GLASS PANELS, MAY RENDER THE INSTALLATION UNSAFE.

NOTE

The following instructions cover the installation of the model I3000 Inbuilt Fire complete with a 'zero clearance' metal shielding box, 'zero clearance' fascia and special 'zero clearance' flue kit.

INSTALLATION REQUIREMENTS

INSTALLATIONS- FLOOR TO CEILING ENCLOSURE:

1. Inspect the house construction at the proposed installation position to verify that the flue casing (250mm diameter, plus 12mm clearance all around) can pass right up through the ceiling space without requiring the removal of essential roof or ceiling support beams. The flue centerline will be 286mm from the rear wall and it must be at least 500mm distant from any side wall. (See Fig. 3).

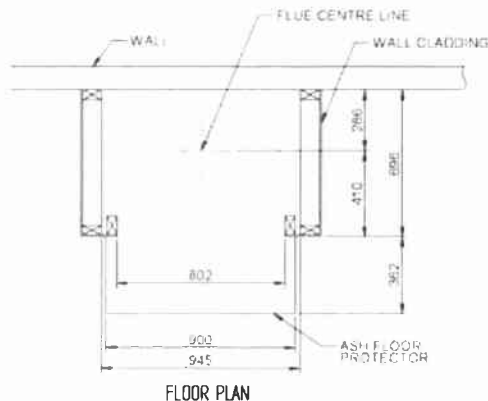


Fig. 2

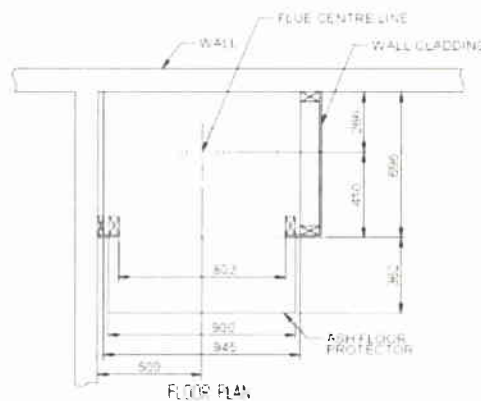


Fig. 3

2. Drop a plumb line from the ceiling to the floor to verify the centerline and cut a hole at least 274mm square through the ceiling on this centerline. If preferred, there may be no ceiling inside the fireplace enclosure. (See step 22).
3. Ensure that there are suitable noggins at either the ceiling or roof level (or both) to provide anchorage for the outer flue casing bracing angles.
4. **Frame up the enclosure** using normal 90x45mm dressed timber, verifying that it will be on the flue centerline. (See Fig. 2). The overall depth should be $(696 - t)$ mm, where 't' is the cladding thickness. The distance between the front uprights must be 802mm (use the supplied metal support angle as a spacer). Fix the metal support angle between the two front uprights at a height of 660mm above the bottom of the shielding (zero clearance) box.
5. For an **'elevated' installation** (See Fig. 8), fix two extra noggins (90x45x802) across the front opening of the enclosure, one at the bottom and the other at the desired 'elevation' height. These extra nogs will carry the front cladding below the heater. Fix two 90x45 bearers running from front to back behind the top extra noggins, positioned 240mm each side of the enclosure centerline to provide support for the shielding box rails. The bearer tops must be flush with the top of the top extra nog. Provide a suitable support at the rear ends of the bearers to carry the weight of the appliance. The shielding box can sit directly on the bearers. No insulation is necessary. The usual three noggins may be fixed at each side of the enclosure. At the front, the lowest wooden nog 'N' must have its lower face at least 1080mm above the top of the floor protector (or 1080mm above the bearers for an elevated installation). Further wooden nogs can be fitted above this one.
6. Fix the cladding to the front of the enclosure, including down each side of the opening. All **front cladding** (including cladding below the heater in elevated installations) which is less than 1104mm above the bottom of the shielding box (or the bearers in elevated installations), must be of heat-proof material such as Hardies TILE & SLATE UNDERLAY, HARDIFLEX or ETERPAN. **Wall surfaces directly above the heater may reach 85 degrees C, so materials such as wallpaper and water based paint may be adversely affected. For durability of finishes and surfaces you should contact the relevant manufacturers for their specifications. Glen Dimplex Australasia Limited accepts no responsibility for the deterioration of surfaces of finishes.**

It is usually convenient to carry the same material right up to the ceiling level. The **side cladding** of the enclosure may be GIB board or any other wall cladding material. **You must** leave the cladding off at least one side until the flue system has been installed.

7. For heat sensitive floors, construct an **ash floor protector** of the shape shown in the Floor Plan above. (see below for concrete floors). The standard ash floor protector is constructed of one layer of 6mm thick Hardies TILE & SLATE UNDERLAY or similar, topped with a layer of tiles or slate. This will give a thickness of approximately 16mm, and the extension from the face of the front cladding must be at least 362mm. The floor protector must be at least 900mm wide. It is desirable to carry the floor protector all the way inside the enclosure to ensure that the bottom of the shielding box does not rest below the top surface of the floor protector. Alternatively you can build a thicker floor protector in front of the fire only. See Fig. 6.
8. Note: For **elevated installations**, the floor protector may be installed after the heater is in position as it does not extend into the enclosure. However, its rear edge must butt up against the face of the heat-proof front cladding below the heater, and the joint at that point must be sealed to prevent the possibility of ember penetration. In this case an ash floor protector is sufficient. Construction requirements for an ash floor protector are: one sheet of 6mm fibre cement board (e.g. Hardies TILE & SLATE UNDERLAY) covered with ceramic tiles or slate.
9. Cement tiles or slate to the top of the floor protector. The part inside the enclosure will not be visible and therefore does not need complete coverage. It is necessary to fix the finishing layer only under the support rails in this area. The visible edges of the floor protector are best finished with wooden trim or tiles after the stove has been installed.
10. Penetrate the roofing material on the flue centerline. Working from the bottom, assemble sections of the **flue and the inner and outer flue casings** and pass them up through the hole in the roof. Remember the flue sections must be fixed together at each joint with at least two rust-proof fasteners, and the crimped ends of the flue casings go to the top. When the flue system is finally in position, the top of the inner casing and the top of the outer casings must be at the same height. If the flue centerline is within 3m from the ridge, the outer casing must end at least 600mm above the ridge. If it is further than 3m from the ridge, the shield must extend at least 900mm above the point of roof penetration. In some cases where there are trees or high buildings in the vicinity, it may be necessary to increase the height to avoid down-draughts. Note that the special adapter spigot ring with holes to ventilate the space between the flue and the inner casing as well as the space between the inner casing and the outer casing has to be attached with 4 screws and locking nuts to the top of the shielding box. Both flue casings (inner & outer) will engage with this special adapter spigot ring. The fitting of the special adapter spigot ring to the top of the shielding box should be done after the shielding box has been pushed into the enclosure.
11. **Assemble** the base, sides, back, top shield assembly and top panel of the **shielding box**. Do not fit the special adaptor spigot ring at this stage. This should be done after the assembly has been pushed into the enclosure (See Fig. 4).
12. Attach the two standoff brackets to the sides of the shielding box panels (if not already fitted).
13. Slide the adjustable top panel of the shielding box into its correct position and secure it by tightening the three screws. The gap between the adjustable panel and the front of the flanges of the side panels should be wide enough to accommodate the front cladding of the enclosure.
14. **Slide the assembly into place in the enclosure**. Centralize it. Attach the special adapter spigot ring to the top panel of the shielding box. Use 4 screws 8g x 13mm.
15. In New Zealand and some parts of Australia, Standards require that the woodfire be secured to prevent shifting in the event of an earthquake. To **provide seismic restraint, fix the shielding box to the floor** (bearers in an elevated installation) with two 6mm masonry anchors (DYNABOLTS) or two 12 gauge screws. Use the two holes in the bottom of the shielding box spaced 670mm apart.
16. Now go to the **firebox cabinet** and remove the two retaining screws and slide out the top section of the firebox cabinet.
17. Attach the two centralizing angles to the side panels of the firebox cabinet, flanges facing forward and outwards. Use two screws provided for each bracket. They may have been already fitted in the factory.

18. Slide the firebox cabinet into the shielding box (the insulating blanket should be fitted to the cabinet prior to that). Centralize it and secure the restraint brackets to the shielding box flanges.
19. **Complete the seismic restraint** of the fire by screwing the base plate of the fire to the bottom of the shielding box with two M6 screws. Use the two holes in the base spaced 525mm apart.
20. Lower the assembled flue and seal and fix it to the flue socket of the heater. Use a **stainless steel screw**. Lower the inner flue casing and engage it with the special adaptor spigot ring, repeat this step with the outer flue casing. See Fig. 9 & 10 for flue and casing lengths.
21. Fit the two flue casing bracing angles at either ceiling or roof level as appropriate. Fix a suitable flashing where the outer casing penetrates the roof.
22. **IMPORTANT: TO AVOID THE RISK OF A FIRE, COVER THE ENTIRE OPEN SPACE SURROUNDING THE OUTER FLUE CASING AT CEILING LEVEL WITH WIRE NETTING WHICH HAS A MESH SMALL ENOUGH TO PREVENT THE ENTRY OF BIRDS OR VERMIN INTO THE ENCLOSURE.** For alternative installation option see step 2.
23. At the top of the flue, fix the flashing cone and fit the cowl in the usual way. There must be a 25mm gap between the top of the two flue casings and the flashing cone, so that the spaces between the flue and inner casing and between the inner and outer casing are properly vented.
24. Re-fit the removable top section of the firebox cabinet and secure it with two screws. Ensure that the insulating blanket is in its proper place.
25. Fix the cladding to the enclosure side(s).
26. Fit the fascia. See page 14.
27. Ensure that the ceiling baffle, secondary air tubes and the side bricks and the rear bricks are in

Item Number	Document Number	Title	Material	Quantity
1	993990	BOOD Z.C. PANEL ASSY BOTTOM		1
2	993991	BOOD Z.C. PANEL ASSY LH		1
3	993992	BOOD Z.C. PANEL ASSY RH		1
4	993994	BOOD Z.C. PANEL ASSY REAR		1
5	993993	BOOD Z.C. TOP SHIELD ASSY		1
6	993995	BOOD Z.C. PANEL ASSY TOP		1
7	593974	FLANGE - SPIGOT ASSY BOOD		1

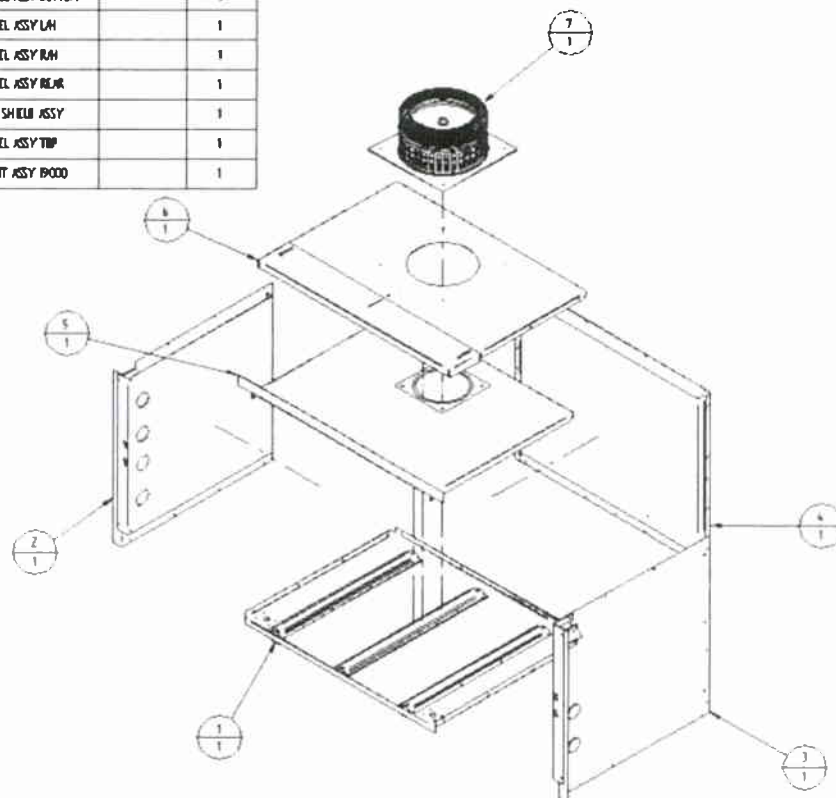


Fig. 4

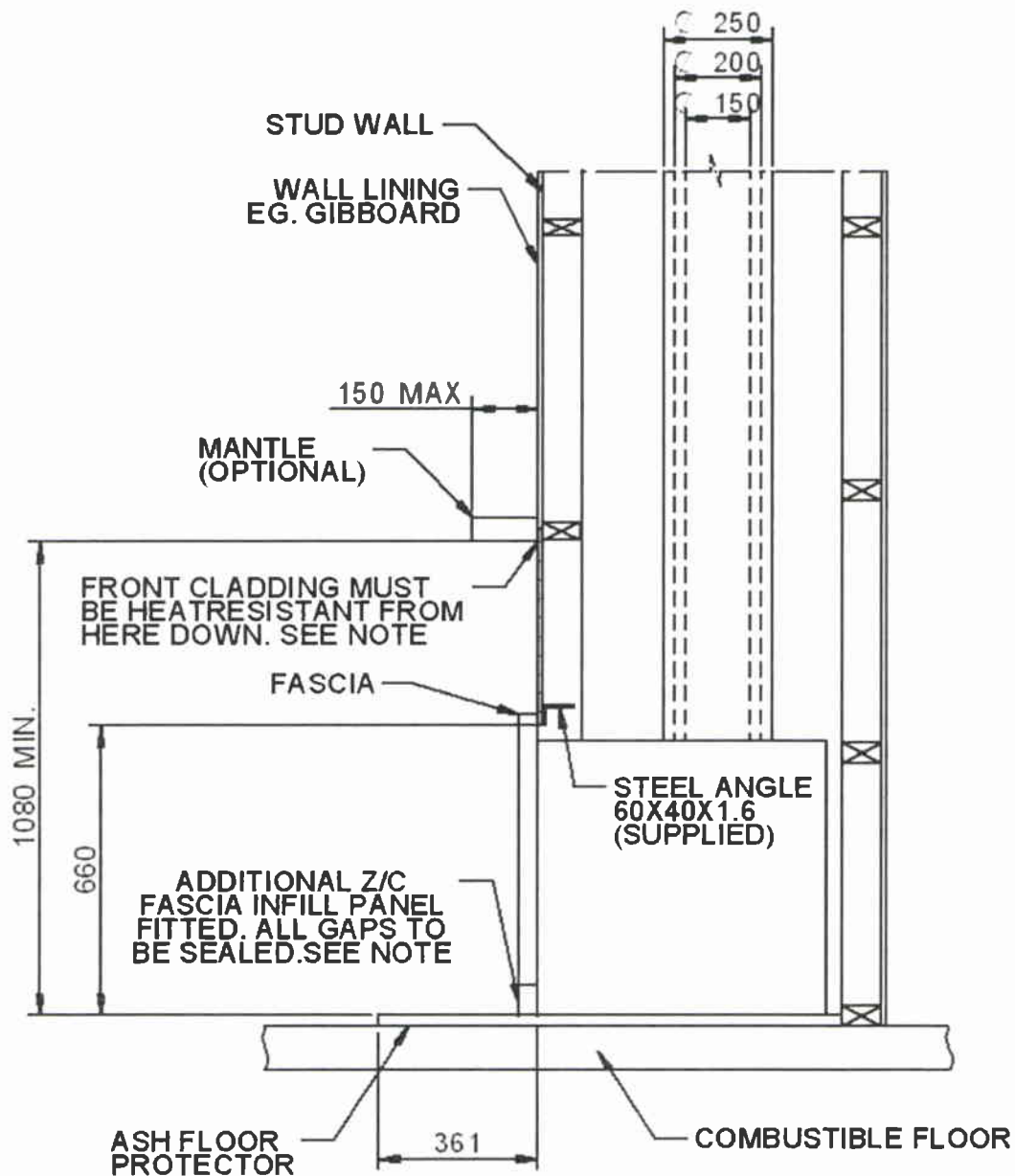


Fig. 5

INSTALLATION ON COMBUSTIBLE FLOOR (ZC FASCIA INFILL PANEL FITTED)

NOTE:

HEATRESISTANT CLADDING: USE NON COMBUSTIBLE CALCIUM SILICATE BOARD LIKE PRO-MATECT 'H', ETERPAN LD OR SUPALUX. **DO NOT** USE PAPER BACKED PLASTERBOARD OR GIB FIRELINE.

SEALING: ALL JOINTS BETWEEN ASH FLOOR PROTECTOR AND ANY FASCIA PANEL MUST BE SEALED TO PREVENT EMBERS AND ASH ENTERING THE GAPS. SEAL ALSO ALL GAPS BETWEEN FASCIA AND WALL.

VERMIN PROOFING: ENSURE THE ENTIRE CAVITY IS ADEQUATELY VERMIN PROOFED.

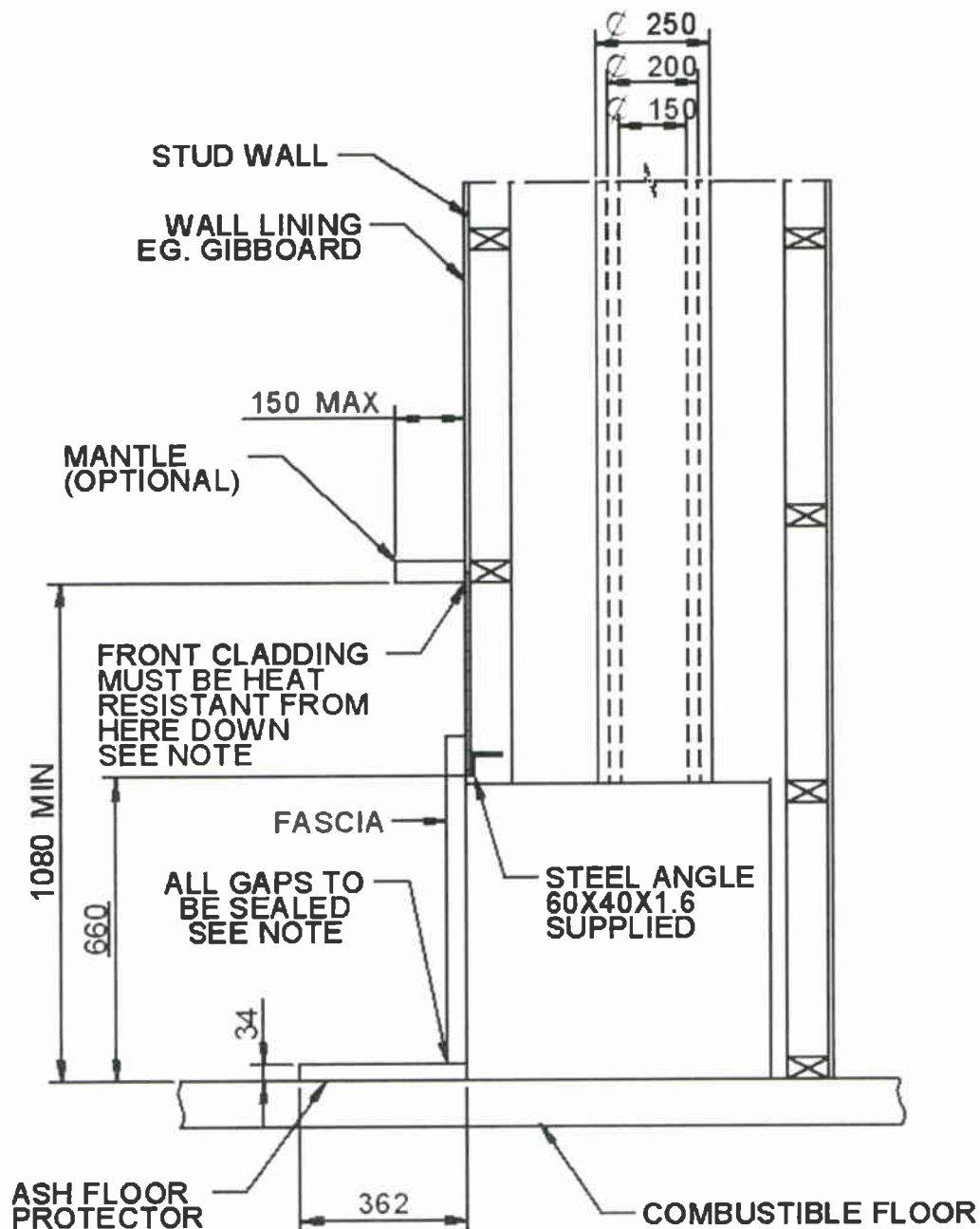


Fig. 6

INSTALLATION ON COMBUSTIBLE FLOOR (WITHOUT ZC FASCIA INFILL PANEL)

NOTE:

HEATRESISTANT CLADDING: USE NON COMBUSTIBLE CALCIUM SILICATE BOARD LIKE PRO-MATECT 'H', ETERPAN LD OR SUPALUX. **DO NOT** USE PAPER BACKED PLASTERBOARD OR GIB FIRELINE.

SEALING: ALL JOINTS BETWEEN ASH FLOOR PROTECTOR AND ANY FASCIA PANEL MUST BE SEALED TO PREVENT EMBERS AND ASH ENTERING THE GAPS. SEAL ALSO ALL GAPS BETWEEN FASCIA AND WALL.

VERMIN PROOFING: ENSURE THE ENTIRE CAVITY IS ADEQUATELY VERMIN PROOFED.

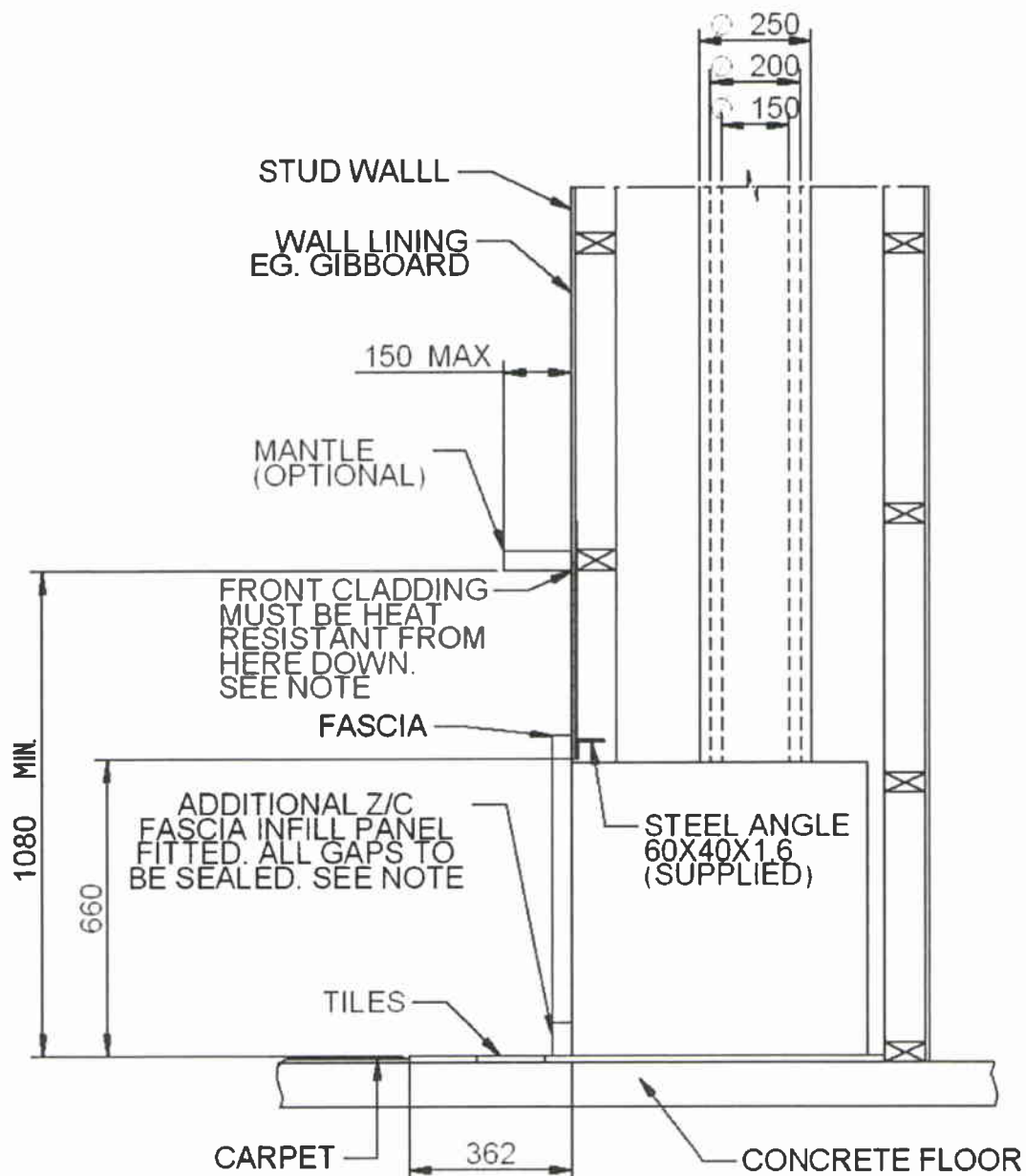


Fig. 7

INSTALLATION ON CONCRETE FLOOR (ZC FASCIA INFILL PANEL FITTED)

NOTE:

HEATRESISTANT CLADDING: USE NON COMBUSTIBLE CALCIUM SILICATE BOARD LIKE PRO-MATECT 'H', ETERPAN LD OR SUPALUX. **DO NOT USE** PAPER BACKED PLASTERBOARD OR GIB FIRELINE.

SEALING: ALL JOINTS BETWEEN ASH FLOOR PROTECTOR AND ANY FASCIA PANEL MUST BE SEALED TO PREVENT EMBERS AND ASH ENTERING THE GAPS. SEAL ALSO ALL GAPS BETWEEN FASCIA AND WALL.

VERMIN PROOFING: ENSURE THE ENTIRE CAVITY IS ADEQUATELY VERMIN PROOFED.

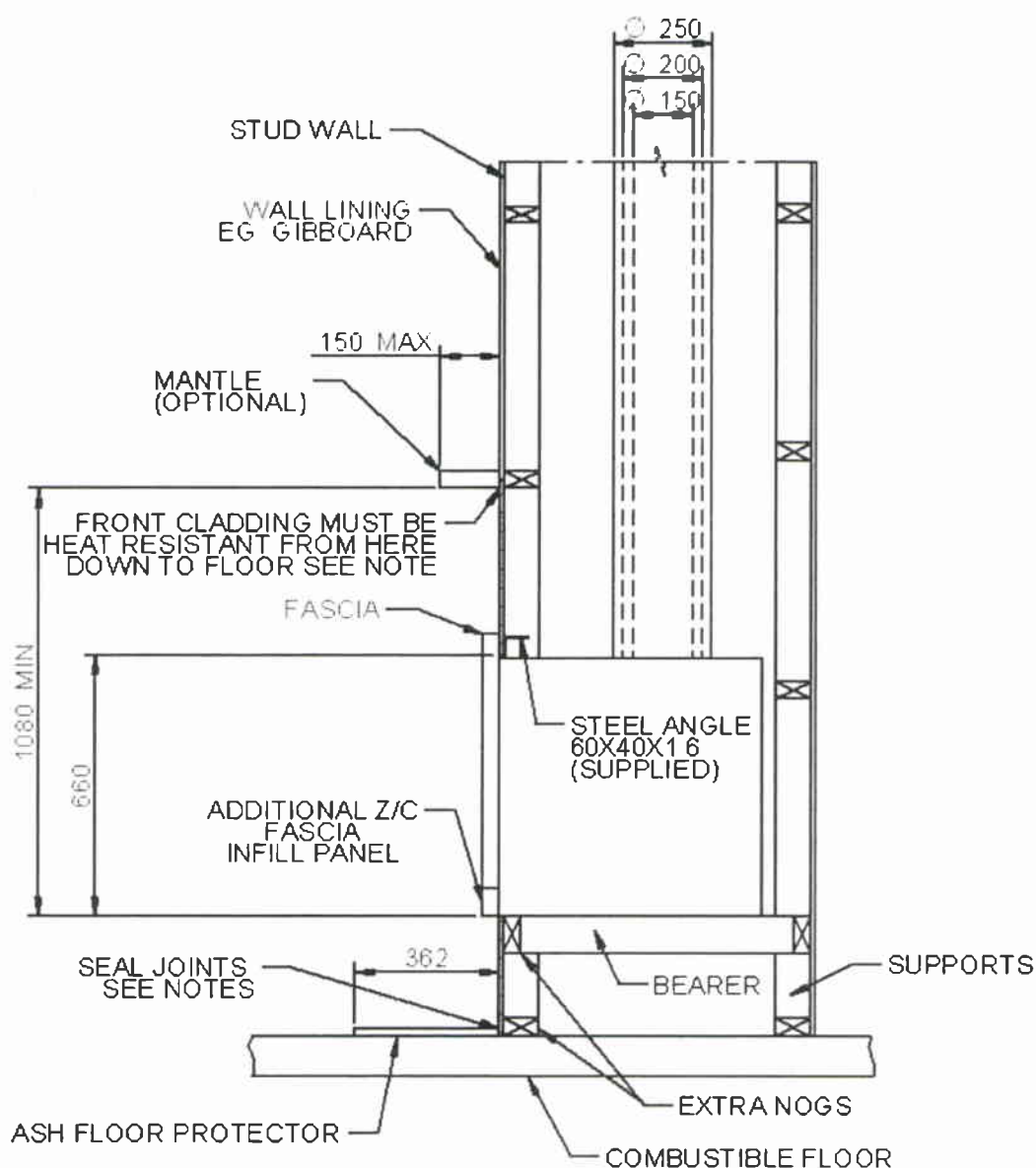


Fig. 8

INSTALLATION – ELEVATED

NOTE:

HEATRESISTANT CLADDING: USE NON COMBUSTIBLE CALCIUM SILICATE BOARD LIKE PROMATECT 'H', ETERPAN LD OR SUPALUX. DO NOT USE PAPER BACKED PLASTERBOARD OR GIB FIRELINE.

SEALING: ALL JOINTS BETWEEN ASH FLOOR PROTECTOR AND ANY FASCIA PANEL MUST BE SEALED TO PREVENT EMBERS AND ASH ENTERING THE GAPS. SEAL ALSO ALL GAPS BETWEEN FASIA AND WALL.

VERMIN PROOFING: ENSURE THE ENTIRE CAVITY IS ADAQTLEY VERMIN PROOVED.

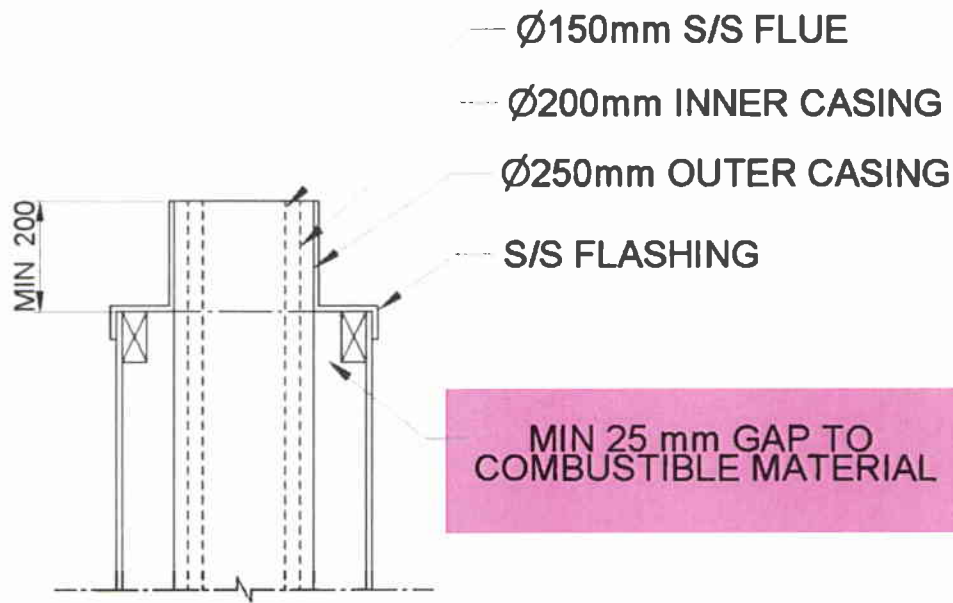


Fig. 9

**HEIGHTS OF FLUE PIPE & CASINGS FOR
SFP COMBINATION COWEL (Fixed Bracket)**

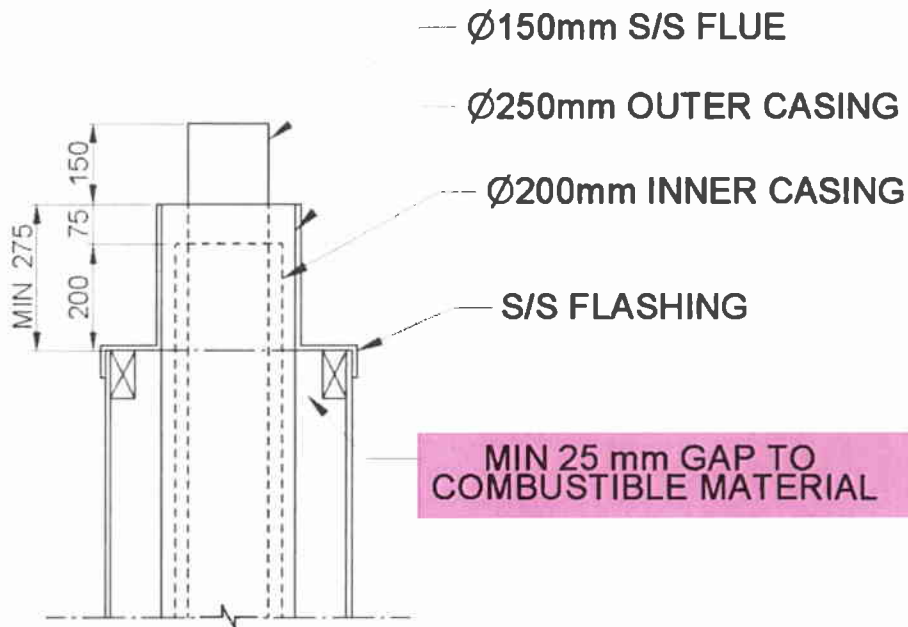


Fig. 10

**HEIGHTS OF FLUE PIPE & CASINGS FOR
SFP STANDARD CASING COVER & SFP TOP FLUE PIPE
SPACER BRACKET**

NOTE:

It is very important that the space between the flue pipe and the inner casing and the space between the inner casing and the outer casing are ventilated at the top.

NOTES FOR VARIATIONS

CONCRETE FLOORS

The above instructions assume that the heater is being installed on a heat sensitive floor such as timber or particle board. Where the floor is not heat sensitive (e.g. concrete), the ash floor protector may be omitted. However, if heat sensitive floor coverings (e.g. carpet) are fitted it will be necessary to keep them at a safe distance. The most practical way to do this is to fix tiles to the floor where the floor protector normally would be. This will make the top of the protector approximately flush with the floor covering. It must extend out to 362mm from the face of the front cladding, and the 900mm width will be sufficient (see Fig. 7). Remember to raise the shielding box by the same amount as the thickness of the tiles on the concrete floor.

BRICK FACED INTERNAL ENCLOSURES

Flue installation and clearance requirements are as detailed above. Brick wall construction will normally require a cast concrete base slab, so this slab could be extended to provide the necessary floor protection.

CAUTION. If your local Building Requirements permit laying the concrete slab on top of a wooden floor, it should be made of lightweight concrete and even then foundation support may be required. In any case, the slab should be poured on top of one layer of 6mm thick fibre cement board (covered with plastic sheet to keep it dry).

The top surface can be finished with bricks or tiles etc. In all cases the floor protector dimensions must be as previously shown.

EXTERNAL INSTALLATIONS

In the case where the enclosure is to be erected outside the house, the shielding and flue installation details above will still apply. It is important to remember that the aperture in the wall of the house will need to be sufficient high to permit the installation of heat resistant paneling around the heater to at least 1080mm above the bottom of the shielding box rails. Suitable foundations will be required to support the weight of the enclosure and the heater and weatherproofing of the entire assembly will be necessary.

INSTALLING THE FASCIA

Unpack fascia and ash shelf.

Remove door from fire. Open door and lift door until the top pivot disengages and then lower the door to free the bottom of the hinge.

Now you should fit the Z/C fascia infill panel to the bottom panel of the fire cabinet with 3 only black 8 gauge screws unless you have a 34mm thick floor protector as shown in fig. 6, then this panel is not needed. This infill panel is shipped with the Z/C enclosure, not with the fascia.

Move fascia to the front of fire and gently slide the assembly inwards. Secure with 4 screws to the cabinet. The screws are positioned either side of the door opening.

Attach the plastic knob to the air slide buy pushing it hard over the metal tab.

Fit the ash shelf to the fire by inserting two screws from the inside of the firebox into the ash shelf. Make sure the screws are tight. Also take care not to scratch any fascia panels.

Fit the door. Hook the bottom pivot over the lower end of the hinge pin and lift the door up until the top pivot drops over the top end of the hinge pin.

Check the installation.

Hand over the owner's manual to the owner of the fire.



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Free Standing 4.2 Flue Kit

This Flue Kit must be installed by a suitably qualified tradesperson or a solid fuel heater installer. This Flue Kit complies with AS/NZS 2918: 2001.

* This kit may require additional components to complete installation.

Roof & Ceiling Installation

Spigot of cowl to float free inside stainless flue to allow for expansion during fire operation.

Secure cowl brackets to outside of galv. liner.

Trim flue and liner to obtain correct chimney height.

Spider bracket clamped to flue to space galv. liner.

Flashing to weatherproof around liner where it exits the roof.

Crimp on liner to face upwards.

Crimple on flue to face downwards.

25mm (min) air gap between liner and any timber.

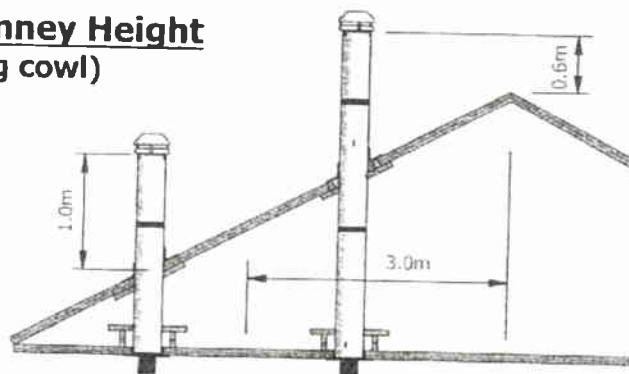
Galv. liner is fixed to the mounting rails by rivets or screws.

Spider bracket clamped to flue to space galv. liner.

Special ceiling plates are available for sloping ceilings.

Build a timber frame to support the flue assembly in the ceiling.

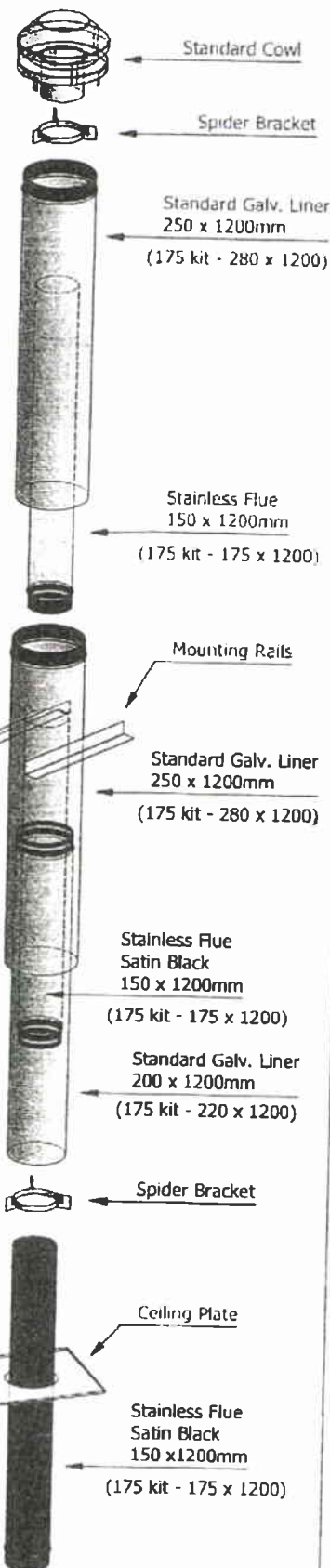
Minimum Chimney Height (excluding cowl)



Notes:

#1 ~ Refer to your heater manufacturers recommendations for flue heights.

#2 ~ Depending on local circumstances, taller chimneys may be required for satisfactory performance. Check with your local building authority.



Assembly List



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Design Navigator H1 Compliance Report

Project Summary

H1 Report created by: Dsigna Concepts
Project Name: McNicholl & Glithero
Client: McNicholl & Glithero
Lot No: 27
Comment:
Project Id: 39395
Report Date: 05/11/2012

Compliance Result

This building complies with H1 via the following methods :

- the Calculation Method in NZS4218:2004 (Sept 2008 R-values)

H1 Compliance Details

NZS4218:2004 Calculation Method Compliance

The use of the Calculation Method is permitted.

In order to comply the Actual Heat Loss must be the same or smaller than the Reference Heat Loss AND all component R-values must be the same or larger than 60% of the R-values in the '60% Rule' table below. This design complies with the NZS4218:2004 Calculation Method.

HeatLoss:

Reference building	Proposed building
480	449

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Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendan

Minimum R-values ("60% rule"):

	Permitted Minimum	Proposed Minimum	
Floor:	0.8	1.54	✓
Non-solid Walls:	1.2	2.15	✓
Glazing in Non-solid Walls:	0.15	0.26	✓
Roof:	2	3.35	✓
Skylights:	0.2	0.26	✓

The Reference building has the following areas and R-values.

		Non-solid	Solid Timber	Other Solid
		100.0	0.0%	0.0%
Floor:	Area: 201.5 m ² R-values:	1.3	1.3	1.5
Walls excl. glazing:	Area: 119.5 m ² R-values:	2	1.4	1.2
Glazing (up to 30%):	Area: 51.6 m ² R-values:	0.26	0.26	0.26
Glazing (surplus of 30%):	Area: 1 m ² R-values:	0.34	0.34	0.34
Roof:	Area: 200.5 m ² R-values:	3.3	3.5	3.5
Skylights:	Area: 1 m ² R-values:	0.34	0.34	0.34

Heat Loss:

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480

502

495

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For mixed constructions the heat loss of the reference building is calculated as the sum of the heat losses for each type of wall construction multiplied by the fraction of the wall area of each type. This approach is based on clause 4.2.6 of NZS4218:2009 because NZS4218:2004 has no clear guidance on mixed constructions. Note that all other requirements (window area (30%) and skylight area (1.2m²) threshold for Schedule Method, maximum R-value tradeoff (40%), etc.) are still using NZS4218:2004 including the 2007 H1 amendments because this is the Acceptable Solution for Clause H1.

Compliance with Clause E3

This building complies with the R-value targets in NZBC Clause E3.

<i>Component</i>	<i>Minimum R-value</i>	<i>Project R-value</i>
Framed wall constructions with cavities	1.5	2.15
Single skin masonry wall without a cavity	0.6	
Solid timber wall no less than 60 mm thick	0.6	
Roof or ceilings	1.5	3.35

Design Details

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Building Dimensions

Floor Area	<u>201.5</u>
Gross Wall Area	<u>171.9</u>
Net Wall Area	<u>119.3</u>
Wall (North) Area	<u>16.9</u>
Wall (East, South and West) Area	<u>102.4</u>
Gross Roof Area	<u>201.5</u>
Net Roof Area	<u>200.5</u>
Glazing Area	<u>53.6</u>
Window (North) Area	<u>7.3</u>
Window (East, South and West) Area	<u>45.3</u>
Skylight Area	<u>1</u>

Glazing Area Percentages

Total Glazing Percentage	<u>31.2%</u>
East, South and West Window Percentage	<u>30.6%</u>
Total over 30%	<u>yes</u>
East, South and West over 30%	<u>yes</u>
Total over 50%	<u>no</u>

Information required for BPI calculation

Living Floor Area	<u>0</u>	Note: This includes also internal floors.
Average Room Height	<u>0</u>	
Thermal Mass Level	<u>Light weight</u>	<u>Suspended timber floor with timber framed walls or a heavily carpeted slab floor with timber framed walls.</u>

Climate

Location	<u>Christchurch</u>
Climate Zone	<u>3</u>

Heat Loss Details

	ID	Orient.	Width	Height	Gross Area	Net Area	R-value*	Heat Loss	Shad. Coeff.**	Solid Wall***
<u>Floors</u>										
Floor 1	Floor				201.5	201.5	1.54	130.8		
<u>Walls</u>										
Wall 1	W	N	1.5	2.4	3.6	1.1	2.31	0.5		C
Window 1-1	wo1		1.2	2.1		2.5	0.26	9.6	0.00	
Wall 2	W	W	4.1	2.4	9.8	6.4	2.15	3.0		C
Window 2-1	w02		1.6	2.1		3.4	0.26	12.9	0.00	
Wall 3	W	N	0.4	2.4	1.0	1.0	2.15	0.4		C
Wall 4	W	W	5.1	2.4	12.4	11.4	2.31	4.9		C
Window 4-1	wo3		0.7	1.4		1.0	0.26	3.8	0.00	
Wall 5	W	N	6.8	2.4	16.3	11.4	2.31	5.0		C
Window 5-1	wo4		0.7	2.1		1.5	0.26	5.7	0.00	
Window 5-2	wo4		1.6	2.1		3.4	0.26	12.9	0.00	
Wall 6	W	E	4.6	2.4	11.2	5.5	2.31	2.4		C
Window 6-1	w06		2.7	2.1		5.7	0.26	21.8	0.00	
Wall 7	W	N	0.8	2.4	1.9	1.9	2.15	0.9		C
Wall 8	W	E	7.3	2.4	17.4	11.0	2.15	5.1		C
Window 8-1	wo7		2.0	2.1		4.2	0.26	16.2	0.00	
Window 8-2	wo8		1.6	1.4		2.2	0.26	8.6	0.00	
Wall 9	W	S	0.5	2.4	1.2	1.2	2.15	0.6		C
Wall 10	W	E	13.8	2.4	33.2	19.5	2.31	8.4		C
Window 10-1	wo9		0.7	0.7		0.5	0.26	1.9	0.00	
Window 10-2	w10		1.6	1.4		2.2	0.26	8.6	0.00	
Window 10-3	w011		3.6	2.1		7.6	0.26	29.1	0.00	
Window 10-4	w012		1.6	2.1		3.4	0.26	12.9	0.00	
Wall 11	W	S	4.3	2.4	10.3	5.3	2.31	2.3		C
Window 11-1	wo13		2.4	2.1		5.0	0.26	19.4	0.00	
Wall 12	W	W	1.6	2.4	3.8	1.9	2.31	0.8		C
Window 12-1	w014		0.9	2.1		1.9	0.26	7.3	0.00	
Wall 13	W	S	3.8	2.4	9.1	7.2	2.31	3.1		C
Window 13-1	w015		0.9	2.1		1.9	0.26	7.3	0.00	
Wall 14	W	W	5.8	2.4	13.8	11.6	2.31	5.0		C
Window 14-1	w016		0.8	1.1		0.9	0.26	3.4	0.00	
Window 14-2	w017		0.8	1.1		0.9	0.26	3.4	0.00	
Window 14-3	w018		0.7	0.7		0.5	0.26	1.9	0.00	
Wall 15	W	N	0.6	2.4	1.4	1.4	2.31	0.6		C
Wall 16	W	W	1.6	2.4	3.8	0.7	2.31	0.3		C
Window 16-1	w019		1.5	2.1		3.1	0.26	11.9	0.00	
Wall 17	W	S	0.6	2.4	1.4	1.4	2.31	0.6		C
Wall 18	W	W	1.9	2.4	4.6	3.7	2.31	1.6		C
Window 18-1	w020		0.7	0.7		0.5	0.26	1.9	0.00	
Window 18-2	w021		0.7	0.7		0.5	0.26	1.9	0.00	
Wall 19	W	S	0.9	2.4	2.1	2.1	2.31	0.9		C
Wall 20	W	W	5.6	2.4	13.4	13.4	2.15	6.3		C

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ID	Orient.	Width	Height	Gross Area	Net Area	R-value*	Heat Loss	Shad. Coeff.**	Solid Wall***
<u>Roofs</u>									
Roof 1				201.5	200.5	3.35	59.9		
Skylight 1-1		1.4	0.7		1.0	0.26	3.8	0.00	
<u>Total Heat Loss</u>							449.4		

* Any slab floor regardless of its dimensions can be assumed to have an R-value of at least R-1.3 (H1/VM1 and H1/AS1, Replacement Table 1, Note (4)).

** The Shading Coefficient is only required for BPI calculations.

*** C: Cavity Construction (any construction that is not solid), T: Solid Timber, S: Other Solid Construction (Note that the use of solid timber and other solid construction types is discretionary, i.e. solid timber walls and other solid walls can be treated as if they are non-solid (NZS4218:2004 section 3.1.4.).)

Floor Construction Details

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Received 06.11.2012

1: Slab floor

internal surface 0.09	
Flooring	none (Example: polished surface of a concrete floor)
R-value: 0	
Insulation value of the slab/floor	
Slab floor area [m²]:	201.5
Perimeter length [m]:	70.3
External wall thickness [mm]:	90 
Soil conductivity [W/m °C]:	1.2 
Underslab insulation:	none 
Piles Footings:	Number: Penetration Diameter: mm
Slab edge insulation:	none 
R-value: 1.45	
Construction R-value:	1.54 m²K/W.

Wall Construction Details

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Received 06.11.2012

1: Timber frame with vented cavity and insulated cladding

external surface 0.03	
Cladding	50mm aerated concrete
R-value: 0.36	
Insulation	
15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08	
Air Barrier	Building paper
R-value: 0.01	
Timber Frame & Cavity 90mm, studs @ 600mm, dwangs @ 800mm	
Frame Area: 15.1%	Cavity Area: 84.9%
Timber Frame	Pink®Batts® Ultra R2.6 Wall
R-value: 0.75	2.6
still Airgap	
none	
R-value: 0	
Wall Lining	Gypsum plasterboard 10mm
R-value: 0.04	
internal surface 0.09	
Construction R-value: 2.31 m²K/W.	

2: Timber frame with vented cavity and insulated cladding

external surface 0.03	
Cladding	Linea weatherboard
R-value: 0.04	
Insulation	
15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08	
Air Barrier	Building paper
R-value: 0.01	
Timber Frame & Cavity 90mm, studs @ 600mm, dwangs @ 800mm	
Frame Area: 15.1%	Cavity Area: 84.9%
Timber Frame	Pink®Batts® Ultra R2.6 Wall
R-value: 0.75	2.6
still Airgap	
none	
R-value: 0	
Wall Lining	Gypsum plasterboard 10mm
R-value: 0.04	
internal surface 0.09	
Construction R-value: 2.15 m²K/W.	

3: Timber frame (direct fixed cladding)

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Received 06.11.2012

external surface 0.03	
Cladding	Gypsum plasterboard 10mm into still air (garage, etc.) <i>R-value: 0.1</i>
Air Barrier	none <i>R-value: 0</i>
Timber Frame & Cavity 90mm, studs @ 600mm, dwangs @ 800mm	
Frame Area: 15.1%	Cavity Area: 84.9%
Timber Frame <i>R-value: 0.75</i>	Pink®Batts® Ultra R2.6 Wall 2.6
	still Airgap none <i>R-value: 0</i>
Wall Lining	Gypsum plasterboard 10mm <i>R-value: 0.04</i>
internal surface 0.09	
Construction R-value: 2.15 m²K/W.	

Roof Construction Details

Consent Issued BC122095

Building Consent 122095
Received 06.11.2012

1: Timber framed roof, direct fixed or battened flat ceiling

external surface 0.03	
Roofing	Corrugate iron with building paper
R-value: 0.01	
Roof space (still air) 0.11	
Insulation 	
Timber Frame & Cavity	94mm rafters or joists @ 900mm, battens (covered with insulation)
Frame Area: 5%	Cavity Area: 95%
Trusses and dwangs	Pink®Batts® R3.6 Ceiling
R-value: 0.78	3.6
Ceiling Lining	Gypsum plasterboard 13mm
R-value: 0.06	
internal surface 0.09	
Recessed downlights	
Ceiling area [m²]:	201.5
Number of downlights:	
Clearance from lamp holder side [m]:	
Construction R-value:	3.35 m²K/W.



This tool was created by [Design Navigator Ltd](#).



Design Navigator H1 Compliance Report

Project Summary

H1 Report created by: Design Concepts
Project Name: McNicholl & Gilthero
Client: McNicholl & Gilthero
Lot No: 27
Comment:
Project Id: 39395
Report Date: 27/07/2012

Compliance Result

● This building complies with H1 via the following methods :

- the Calculation Method in NZS4218:2004 (Sept 2008 R-values)

Jennian

HOMES

Your personality Our expertise

RESIDENTIAL HOUSE SPECIFICATION

McNICHOLL
27 Manderville Park Drive
Rangiora
Waimakariri

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ELECTRICIAN

PAINTER

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
122095 19/11/2012 brendam

PRELIMINARY AND GENERAL

1. PRELIMINARY

Specification of the work to be done and the materials to be used for completion of the contract annexed here to.

This specification is to be read in conjunction with the accompanying drawings and any other drawing which may be issued during the Contract. The Contractor shall provide the Contract which is to be completed by all parties before the commencement of any work on the site. Any additions, omissions or variations to the Contract shall be notified in writing and signed by both parties. The owners are to ensure that all boundary marker pegs are in place and exposed for inspection.

2. SCOPE OF THE PROJECT

This specification describes the standard of workmanship and the work to be done the plant, materials and labour to be supplied for the construction of the building shown in the attached approved building consent plans. The scope includes all other work described in this Specification, and on the Approved Building Consent Plans or in the Conditions of Contract.

In particular, the Contractor is expected to be familiar with the site and the current New Zealand Building Code requirements and all current clauses of N.Z.S. 3604 applicable to the contract.

3. CONTRACT DOCUMENTS

The contract documents shall consist of:

- (a) Plan Drawings
- (b) quotation
- (c) The Contract Agreement
- (d) The Terms and Conditions of Contract
- (e) This Specification

4. NEW ZEALAND STANDARDS

All NZS Specifications/Code of Practices quoted within this Specification shall be considered to be part of this Specification, in particular NZS 3604:1999 or the most current version of this document at the time of construction. 2011

5. NEW ZEALAND BUILDING CODE

Specification references made to BIA Approved Documents, which are made up of the appropriate Building Code clause with the addition of Acceptable Solutions that are a means of compliance, shall be considered to be part of this Specification.

The following is a list of Approved Documents referred to in this Specification. There may be other Approved Documents that need to be complied with but which are not required parts of this specification.

B1/AS1 & VM1 Structure – General
B1/AS4 Structure – Foundations

B2/AS1 Durability
B2/VM1 Durability
C1/AS1 Outbreak of Fire
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C3/AS1 spread of fire
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F4/AS1 Safety from Falling
F5/AS1 Construction and Demolition Hazards
G1/AS1 Personal Hygiene
G2/AS1 Laundering
G3/AS1 Food Preparation/Storage and Utensil Washing
G4/AS1 Ventilation
G6/AS1 Airborne and Impact Sound
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G13/AS2 VM2 Foul Water – Drainage
H1/AS1 Energy Efficiency

6. BUILDING CONSENTS

The Contractor shall comply with the New Zealand Building Code and the requirements of the Territorial Authority. The Contractor shall apply for and obtain a Project Information Memorandum for the project and all necessary Building Consents. All fees applicable for the above items must be paid to the Territorial Authority.

The Contractor shall apply within the time specified by the Territorial Authority for all necessary Territorial Authority inspections as are required during the course of the works and shall comply with all directions given by Territorial Authority inspectors.

7. HEALTH AND SAFETY IN EMPLOYMENT ACT 1992 AND CONSTRUCTION SAFETY

The provision of the Health and Safety in Employment Act 1992 and regulations and the BIA Approved Documents NZBC F5/AS1 Construction and Demolition Hazards are deemed to be part of this Contract.

8. PROVIDE AND FIX

The words "provide" and "fix" shall be construed to mean "provide and fix" where mentioned separately unless otherwise mentioned.

9. INTERPRETATION

Work or materials shown on the approved building consent plans or specified and not shown, must be supplied as though both shown and specified.

Materials shown but not specified must be of the kind commonly employed for the service they are intended to perform.

All figured dimensions shall be taken in preference to scaled dimensions.

The Contractor shall be held responsible for the setting out of work and he shall make good at his own expense any errors that occur through his lack of checking for faulty workmanship.

10. SITE

The levels shown on the approved building consent plans are approximately correct but extras will be allowed on the basis of incorrect levels shown.

The working area made available to the Contractor including that required for storage of materials and location of sheds and plant will be limited to the property under the control of the Owner or as otherwise indicated on the approved building consent plans.

Any further requirements deemed necessary by the Contractor shall be arranged by him at his own cost and inability to make any such arrangements shall not relieve the Contractor of his responsibility to carry out the work specified.

The Contractor shall inform the Owner of any such arrangements made.

11. STABILITY

The Contractor shall carefully brace and support all parts of his work against damage by wind and protect from the elements as necessary during construction.

12. PROTECTION OF PROPERTY

The Contractor shall protect adjoining properties during the Contract and shall make good all damage at his own expense.

13. INSURANCE/INDEMNITIES

The Contractor shall have in force for the duration of the Contract Works (including the maintenance period):

- (a) An insurance policy covering the full amount of the contract sum to cover loss or damage through fire, theft or any other claims arising out of the construction maintenance of the contract works.
- (b) Any liability incurred by the Owner in respect to injuries to persons, or damage to property (including neighbouring property) which may arise out of the construction, or maintenance of the contract works.

All policies shall remain in force until the building is taken over by the Owner.

14. MATERIALS

Materials are to be new unless otherwise stated, the best quality of their respective kinds, and complying with the relevant BIA Approved Documents, New Zealand Standards and Regulations.

Any materials herein specified that are not procurable at the time that they are required, thus tending to retard the progress of the Contract, may be substituted with other similar materials, providing that the substituted materials conform to the New Zealand Building Code BIA Approved Documents, New Zealand Standards and Regulations and have equivalent Durability in terms of NZBC B2/AS1 and NZS 3604:1999 or the current equivalent and to also have the formal approval of the Owner.

Supply all materials, labour, services, temporary works, equipment and plant for the proper excavation and completion of the works.

The Contractor shall make suitable arrangements for Principal Supplied Materials in their handling, storage and installation.

15. DURABILITY VERIFICATION

The requirements for durability of specific building elements required by the New Zealand Building Code are set out in Table 1 of Acceptable Solution B2/AS1 and also in NZS 3604:1999 Section 4.

In supplying products, components or materials (henceforth termed "products") for incorporation into the contract works, the Contractor shall be deemed to have either:

- (a) Obtained a current CODEMARK Accreditation Certificate for the products involved; or
- (b) Obtained an Appraisal Statement from a reputable Technical Assessment organisation (such as B.R.A.N.Z.) for the products involved to the effect that the products, when installed to the manufacturer's instructions, will meet the performance requirements of the NZBC Approved Documents Acceptable Solution B2/AS1 in respect of durability for the specified life of the element as stated in B2/AS1 Table 1.

Where such certificates or statements are not available, the Contractor shall be deemed to have verified, to his/her satisfaction that the products involved will satisfy NZBC B2 Durability by proof of performance in use, using one or more methods set out in the verification methods, taking account of:

- (i) Service History;
- (ii) Laboratory Testing.

As set out in Method B2/VM1, tests which relate to the particular application of the product to the satisfaction of the contract works.

At the end of the project, the Contractor shall supply to the Owner/Architect a Producer Statement to the effect that all materials incorporated satisfy the above requirements.

16. WORKMANSHIP

All work shall be carried out in accordance with good New Zealand trade practice and to the relevant codes, in strict conformity with the approved building consent plans and specifications and to the satisfaction of the Owner. All work is to be level, plumb, and true to line and face. Only experienced and competent workpeople shall be utilised on the Contract.

All defective or damaged work shall be removed and made good to the satisfaction of the Owner.

17. DAMAGE/NUISANCE

Each trade shall take care to prevent damage or disfigurement of the work of other trades and will be responsible for the cost of restoring the same.

The Contractor shall take all reasonable precautions to prevent damage and nuisance from water, fire, smoke, vehicles, dust, rubbish, noise and any other causes resulting from

construction works. Comply with the requirements of the Territorial Authority and relevant Acts and Standards.

18. CLEANING

The Contractor, at the conclusion of the Contract, shall have all ceilings, walls, and woodwork carefully dusted and wiped down, windows washed inside and out, and glass free from scratches, floors brushed and wiped down and all services operating and any mechanical parts in good working order.

19. GUARANTEES

Guarantees stating the period and any special obligation may be called for in any work section of this Specification. The general terms of such guarantees are covered by the Conditions of Contract but in no case shall the terms or conditions accepted negate the minimum remedies available under common law as if no guarantee had been offered or accepted.

EXCAVATOR

1. PRELIMINARY AND GENERAL

Note where Preliminary and General Clauses apply to this trade.

2. ALLOWANCE IN TENDERING

Allow for foundation depths shown on approved building consent plans.

3. SETTING OUT

Set out the work as shown or implied on the approved building consent plans. Check accuracy in terms of position, level and square.

4. CLEAR SITE

Remove vegetation, trees, roots and maximum 150mm of topsoil within the area to be covered by the works. Do not remove any other trees without the Owner's consent. Deposit topsoil in a pile and placed as directed by the main Contractor to avoid covering with subsoil subsequently excavated.

5. LEVELLING AND BULK EXCAVATION

Excavate for all site levelling, foundation walls and/or pipes, underground services and subsoil drains etc. to correct levels, to firm bearing.

6. FOUNDATION TRENCHES

Take out trenches straight, level and to proper width and keep free of water and loose material. Concrete shall not be placed until excavations approved. If other than under item 2 of this section, trenches are dug too deeply then such excess depth shall be filled with concrete, as specified for foundation, at the Contractor's expense.

7. HARDFILL

Use only approved fill not less than 100mm thick and well compacted under concrete ground floors and where otherwise specified.

8. BUILDING DRAINAGE

See Drainlayer's Section.

9. BACKFILL AND TOPSOIL

Backfill and consolidate well in .100mm layers to foundation walls, pile footings and service trenches. Do not damage any waterproof coatings protecting foundation walls from ground water entry.

CONCRETE AND REINFORCING

1. PRELIMINARY AND GENERAL

Note all clauses under the Preliminary and General section of this specification, which shall apply to this section of the work.

2. EXTENT OF WORK

Concrete shall be ordinary grade, complying with NZS 3109:1997, with minimum compressive strength of 20Mpa after 28 days or as specified in NZS 3604:2011, Section 4, clause 4.8. Rod reinforcement shall be deformed bars with a minimum yield stress of 275Mpa, clean and free of loose rust or other coatings.

3. FORMWORK

Formwork shall be so constructed that the concrete thickness and shapes required are obtained as detailed without removal causing damage. Times of removal of formwork, methods of construction and pouring and curing of concrete shall be as set down in NZS 3109:1997.

4. FOUNDATION WALLS

Foundation footings, walls and reinforcing shall be to the sizes shown on the approved building consent plans and in accordance with Section 6, Table 6.4 and 6.5 of NZS 3604:2011. Reinforcing steel shall be lapped at least 40 rod diameters for deformed bars in concrete. All reinforcing steel to be of class E Ductility Steel to NZS4671, also refer to B1 / AS1 updates 19th May 2011

5. CONCRETE SLAB FLOOR CONSTRUCTION

Concrete slab floors shall be as specified on the approved building consent plans and in accordance with NZS 3604:2011, Section 7 or the most current version/equivalent at the time of construction.

6. DAMP PROOF COURSE

Under all concrete floor slabs lay 0.25mm thick black polythene sheet or approved equivalent product, with joints lapped not less than .150mm and sealed with a self adhesive tape to the manufacturer's specification. Any damage done to the vapour barrier during provision of the under slab, or in slab services shall also be made good before placing concrete.

7. COMPLETION

Leave all clean and tidy at finish and make good any defective work.

ROCKCOTE INTEGRA RENDER EXTERIOR

1. PRELIMINARY AND GENERAL

Read and note all clauses under the Preliminary and General section of this specification where they apply to this trade.

2. SCOPE

This Specification deals with Rockcote Integra cavity Plus Render System applied over a 50mm Integra panel substrate. The system incorporates the installation of a 20mm drainage cavity and pre-coloured acrylic texture finish.

3. APPLICATION

Rockcote Integra Cavity plus Render System - consisting of 50mm thick Integra AAC Panel screwed to steel battens which are fixed to timber framing. Coated with a Rockcote PM100 Polymer modified cement-based plaster reinforced with a weave mesh, sealed with Rockcote Render Prime finished with Resene X200 Acrylic reinforced waterproof membrane and Rockcote Armour, acrylic based protective finish coloured to choice

4. COMPLIANCE

The substrate for this Rockcote Renderspec has had all the appropriate inspections carried out by a BCA representative and that it complies with the NZBC requirements.

WEATHERBOARD

1. PRELIMINARY AND GENERAL

Read and note all clauses under the Preliminary and General section of this specification where they apply to this trade.

2. SCOPE

This specification covers the use of James Hardie Weatherboard for buildings that fall within the scope of NZS 3604 and NZBC Acceptable Solution 'E2/AS1', paragraph 1.1. This specification covers the use of James Hardie Weatherboards in both direct fixed and cavity construction methods. Please refer to 'E2/AS1' for further information regarding the selection of construction method for claddings.

3. APPLICATION

James Hardie Weatherboards are made of fibre cement and are pre-primed. They are categorised as a lightweight cladding product as per NZS 3604. James Hardie Weatherboards are manufactured in different profiles ranging between smooth and patterned finishes.

4. COMPLIANCE

James Hardie Weatherboards comply with section 9.5.2 of 'E2/AS1'. Information contained in this document regarding the installation of James Hardie Weatherboards are aligned with 'E2/AS1' of New Zealand Building Code (NZBC).

CARPENTER

1. PRELIMINARY AND GENERAL

Read and note all clauses of the Preliminary and General section of this specification which apply to all works of this section.

2. EXTENT OF WORK

The work of this section shall include all labour, materials, equipment necessary to carry out and complete the carpentry as shown, or as required by this specification. Together with any other items or work reasonably inferred as part of this section.

3. ATTENDANCE AND PROTECTION

Attend upon all other trades providing all blockings, fixings, trims and nogging as necessary for the full completion of their respective works and make good after all trades.

4. MATERIALS AND WORKMANSHIP

All materials shall be the best of their respective class and type specified. Any materials, which in the opinion of the Territorial Authority are not up to standard, are to be removed immediately from the site. All work shall be carried out in a workman like manner in accordance with best trade practice and as/or where especially specified.

Any work that is intended for the proper completion of the building shall be included.

All work shall comply with the relevant NZS requirements, in particular NZS 3604:1999.

5. TIMBER

All timber shall conform to NZS 3602:2003 " Code of Practice for Specifying Timber and wood-based products for use in building". Timber used shall have the appropriate treatment for their use with the approved preservative process in plants licensed by the Timber Preservation Authority.

6. DAMP PROOFING

All timber is to be protected from dampness with 3-ply bituminous felt or other approved damp proofing material when in contact with concrete or brickwork, except as provided for use under clause 2.3.3 Of NZS 3604:2011

7. PRIMING

All exterior finishing timber, all timber in contact with concrete blockwork and all external faces, rebates, etc. of all doors, windows, frames and all woodwork of sashes, shall be primed before fixing unless otherwise specified.

8. FASTENING AND FABRICATION

The Contractor should especially note that all aspects of fastening and fabrication of framing members and wood-based products in this contract shall accord with the appropriate clauses/appendices of NZS 3604:1999.

9. BUILDING PAPER

Fix breather type building paper to all exterior walls in accordance with NZS 3604:1999.

10. GENERAL FRAMING

All framing to be as per plan details, and in accordance NZS 3604:1999. All studs to be at 600mm centres unless otherwise noted on the approved building consent plans. Provide two rows of nogs/dwangs to full height of each wall unless otherwise stated on the approved building consent plans.

11. BRACING

Provide all wall bracing as shown on the approved building consent plans and attached wall bracing calculation and in accordance NZS 3604:1999 and manufacturer's specifications. Provide all necessary roof bracing in accordance with NZS 3604:1999 and the approved building consent plans.

12. ROOF CONSTRUCTION

- (a) Construct roof framing by the method indicated on the approved building consent plans and in accordance with NZS 3604:1999 Section 10.
- (b) Trussed Roofs
The approved building consent plans show clearly the type, pitch, span, spacing and overhangs of roof trusses and details of roof cladding that shall comply with Sections 10 and 11 of NZS 3604:1999. Trusses shall carry the name of the assembly factory.
- (c) Framed Roofs
Roofs shall be framed up as shown in the approved building consent plans and in accordance with NZS 3604:1999 Section 10.
- (d) Purlins, Eaves and Gable Ends
Construct and furnish as specified and shown on the approved building consent plans and in accordance with NZS 3604:1999 Section 10.

13. FASCIA BOARDS, ETC.

Fix fascia, barge, frieze boards, etc. to suit roofing selected and to best trade practice and in accordance with the approved plans and relevant New Zealand standards.

14. POST AND BEAM

Construct and secure as specified in NZS 3604:1999 unless otherwise stated.

15. CEILING FRAMING

- (a) Dwanging of ceilings is not permitted unless otherwise stated/shown.
- (b) Strap the underside of joists or roof members using 75x40mm timber or proprietary steel battens as per plan maximum centres for Gibraltar board.

ROOFER

1. PRELIMINARY AND GENERAL

Read and note all clauses under the Preliminary and General section this specification where they apply to this trade.

2. SCOPE

Comprises of all roof coverings, sealants, accessories and related items necessary to complete the work indicated on the approved building consent drawings and as further specified

3. ROOFING

Provide underlay as required by NZS 3604:2011 Section 11 and Table 11.1 and fixed in accordance with underlay manufacturer's recommendations.

4. ROOF CLADDING MATERIALS AND COMPONENTS

1. Refer to the approved plans and the Schedule of Components for the type of roof to be used.
2. Materials selected shall be set out and fixed by approved fixers and all shall accord with the manufacturer's specification and in all cases with other New Zealand standards as appropriate.
3. Aluminium metal tiles shall comply with AS/NZS 1734, shall have a base metal thickness (BMT) of 0.7 mm minimum and be minimum 5000 series.

1. GUARANTEES

On completion of all roofing, thoroughly clean down and furnish Owner with written guarantees to water tightness and security of the roof cladding. Guarantees to be signed by approved fixer/s and to run for a period of three years from the date of completion of the building.

PLUMBER**1. PRELIMINARY AND GENERAL**

Read and note all clauses in the Preliminary and General section of this specification, which shall apply to all, work in this section.

2. SCOPE

Comprises all gutters, downpipes, flashings, sanitary fittings, water supply, wastes, vents and related items necessary to complete the work indicated on the approved building consent plans and as further specified.

3. GENERAL

All work shall be carried out in accordance with best trade practice. All work shall conform to the requirements of the New Zealand Building Code 1991 and in particular the following relevant sections:

NZBC B2 Durability
 E1 Surface Water
 E3 Internal Moisture
 G10 Piped Services
 G11 Gas as an energy source
 NZS5261 Gas Installation
 G12 Water Supplies
 G13 Foul Water

All work must also comply with all the relevant New Zealand, British and Australian standards that are specified as Acceptable Solutions in the N.Z. Building Code Handbook and in NZS 3604:1999 and in particular AS/NZS 3500.2.2:1996.

No connections to sanitary fittings or main shall be made except by a Registered Plumber. The Plumber shall arrange all building consents, connection and testing fees for any work for which he is solely responsible for completing as part of the contract.

4. DURABILITY

All elements to be used in the plumbing of the building i.e. sanitary fixtures and piping materials shall meet the performance standard of NZBC B2 Durability.

5. SPOUTING AND DOWNPIPES

Spouting shall be purpose made; metal or PVC, size as per NZBC E1 /A51, installed to recommended methods with an even fall to the downpipes. Connect to 80mm minimum diameter down pipes fixed as shown on the approved building consent plans. Gutters are 116mm x 60mm.

6. COLD WATER SUPPLY

(a) Main Supply

Tap off from mains service pipe in polyethylene 20mm. Run pipe not less than 450mm below finished ground level to the building.

(b) Building Supply

Provide 15mm polybutelene or copper cold water supply to all fittings and outlets, including hose taps. Where supply pipe is encased in concrete or under concrete structures, copper must be used.

7. HOT WATER SUPPLY

Refer to Schedule of Material and works on choice of brands and fixing of all Hot water systems and mixing valves. Provide and fix all other water supply fittings as necessary.

8. SANITARY FITTINGS

All sanitary fittings shall be of approved manufacture. All sanitary fittings shall meet the performance standard of NZBC B2 for Durability.

9. TAPS, FAUCETS AND VALVES

Refer to Schedule of Material and works on choice of brands and fixing of all taps, faucets and mixing valves. Provide and fix all other water supply fittings as necessary.

10. SHOWER TYPE

Refer to Schedule of Material and works on choice of brands and fixing of all showers faucets and mixing valves.

11. WASTES AND VENTS

Provide all necessary traps, waste pipes, soil stacks, back vents and terminal vents. Provide cleaning eyes to all waste pipes at junctions and all necessary overflow pipes. All this work shall comply with NZBC G13 Foul Water.

DRAINLAYER

4. PRELIMINARY AND GENERAL

Read and note all clauses under the Preliminary and General section of this specification where they apply to this trade.

5. SCOPE

Comprises all surface and foul water drainage up to above ground level to connect to the Plumber's work. The Drainlayer shall confer with the Plumber and shall arrange with the Contractor before the foundations are laid to fix the exact position of all connections of wastes and drains.

6. STANDARD OF WORK

All work shall be carried out in accordance with the best trade practice. All work shall comply with all the requirements of the New Zealand Building Code 1991 and in particular the following relevant sections:

NZBC	B1 Durability
	E1 Surface water
	G10 Piped Services
	G13 Foul Water

All work must also comply with all the relevant New Zealand, British and Australian standards that are specified as Acceptable Solutions in the N.Z. Building Code Handbook and in NZS 3604:1999 and in particular AS/NZS 3500.2.2:1996.

All required consents will be obtained, all notices served and all tests to be arranged.

7. DURABILITY

All elements to be used shall meet the performance standard NZBC B2 for Durability.

8. CONNECTION TO EXISTING DRAINAGE

The Drainlayer is responsible for verifying the position and depth of the connections and to commence laying his drains from this point.

9. INSTALLATION OF DRAINAGE

The foul water drainage system shall be laid, installed and completed to the requirements of NZBC Acceptable Solution G13/AS2 Foul Water Drainage and as directed on the approved building consent plans.

ELECTRICIAN

1. PRELIMINARY AND GENERAL

Read and note all clauses under the Preliminary and General section of this specification where they apply to this trade.

2. FEES

Pay all fees charged and obtain all necessary permits for the trade.

3. SCOPE OF WORK

Carry out the whole of the electrical installations in strict accordance with the Electrical Regulations 1997, NZBC G9 Electricity and "The Electrical Code of Practice for Electrical Wiring Work in Domestic Premises 1993" which is deemed to be part of the regulations and all Territorial Authority bylaws.

4. MATERIALS AND WORKMANSHIP

All materials used under this contract shall be of approved New Zealand or British specification. Allow for all materials necessary to complete the contract whether specified or not. All work shall be carried out by a Registered Electrician in accordance with the regulations and best trade practice and in a manner which will cause minimum inconvenience to other workman and the work as a whole. Do all cutting away for the entry of cables.

5. CO-OPERATION

Co-operation with the Contractor in all phases of work. Give ample notice to enable the Contractor to arrange the necessary void, chase data etc.

6. COMPLETION AND CONNECTION OF POWER

Leave work complete, pay all charges and arrange for all inspections and test for the connection of power to the works. It is the responsibility of the Electrical Contractor to ensure that no delay is caused to the job once the contract is completed.

7. CONNECTION TO ELECTRICITY SUPPLIER

It is the responsibility of the Electrical Contractor to arrange all connections to the Electrical Supplier and to allow for and pay all fees for the connection of the supply to the building.

8. METER BOX

Provide and install a recessed meter box in accordance with the Electrical Supplier's requirements. Confer with the carpenter about trimming the same.

9. MAIN SWITCHBOARD

Provide and install in recess the main switchboard complete with all necessary control and auxiliary equipment.

10. COOKING APPLIANCES

Refer to Schedule of Material and works for the supply of cooking appliances, (see approved plans for location). Allow for the connection of these appliances.

11. WATER HEATER

Allow for the permanent connection of the water heater/s to the electrical system.

12. POWER OUTLETS AND LIGHTS & LIGHT SWITCHES

Refer to Schedule of Material and Works and the plans. Typically, light switches at 1200mm from floor. Typically, power outlets 300mm from floor, 225mm from bench tops. All down lights and 12v halogen are NZ ECP closed moisture transfer type.

13. EXTRACTOR FANS

Ceiling extractor fans will have a minimum air flow of 35l/second

PAINTER**1. PRELIMINARY AND GENERAL**

Read and note all clauses under the Preliminary and General section of this specification which shall apply to this section of the work.

2. MATERIALS

Generally all materials shall be of New Zealand manufacture of approved brands and of the paint selected, respective coats shall be of the same brand.

3. WORKMANSHIP

All work shall be carried out in accordance with good trade practice. Surfaces shall be clean and properly prepared before coating and the work shall be in accordance with AS/NZS 2311: 2000 "Guide to the painting of buildings".

4. COLOUR SCHEME

Refer to Schedule of Material and works.

5. STOPPING

After priming, all nail holes or joints are to be stopped and cleaned off before undercoating for painted work.

6. PAINTING OF EXTERNAL WORK

After priming all external woodwork and adjacent metal work such as flashings, and spouting if metal, is to be given one good coat of undercoat followed by a finishing coat of high gloss paint. The priming coat before painting shall be well brushed in and all faces shall be covered, ends of laps and tops and sides of sashes, doors etc.

7. PAINTING OF INTERIOR SURFACES

Wallboard and ceilings as required are to be given one coat of sealer and finished with two coats of approved paint finishing flat or semi-gloss as per Schedule of Material and works. All wet area rooms are to have three coats of enamel paint.