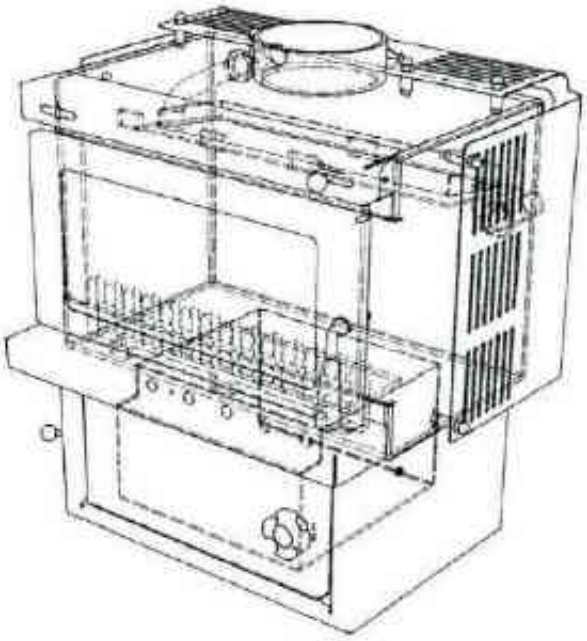
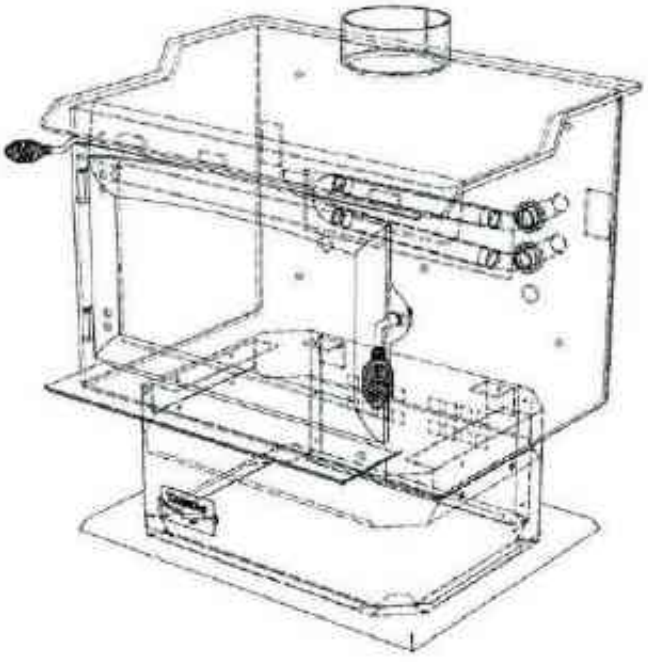
Issued: January 2012 V2.25

Specifications, Installation and Operating Instructions for Woodsman Solid Fuel Burners

WOODSMAN

Warming kiwi homes since 1887.





KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

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Warming kiwi homes since 1887.

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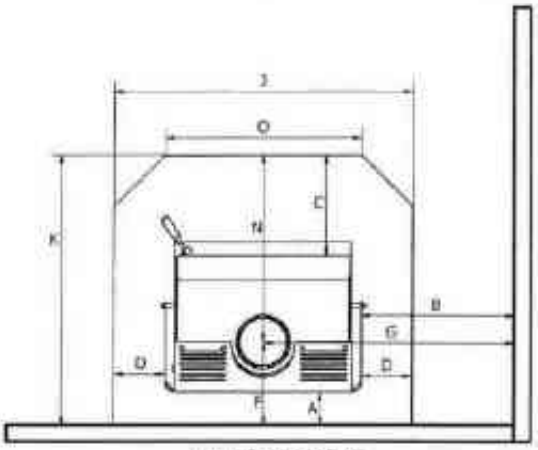
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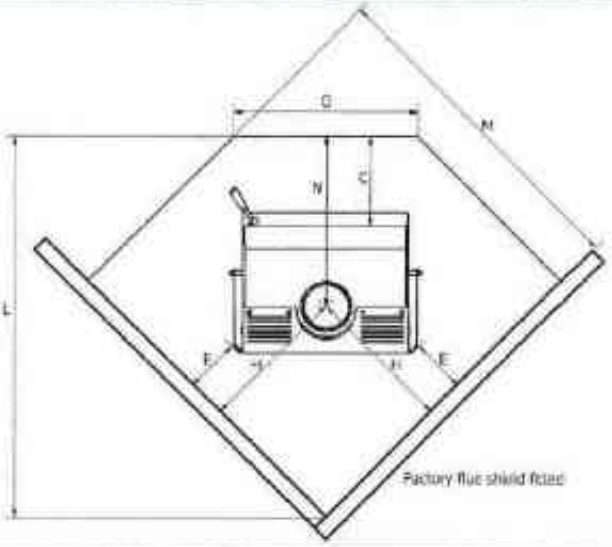
Testing and Certification

MODEL	AS/NZS 2918:2001	AS/NZ 2918:2001, APP E	AS/NZS 4012:1999	AS/NZS 4013:1999	ECan Cert Number
Brunner	Complies	N/A	71%	0.5g/kg	111242
Brunner WB	Complies	N/A	65%	0.5g/kg	111243
Tasman	Complies	N/A	71%	0.5g/kg	111475
Tasman WB	Complies	N/A	65%	0.5g/kg	111477
Aspen	Complies	N/A	71%	0.5g/kg	111306
Aspen WB	Complies	N/A	65%	0.5g/kg	111307
Blaze	Complies	N/A	66%	0.7g/kg	082947
Boston	Complies	N/A	67%	0.8g/kg	073734
Matai DVI-165	Complies	Complies	67%	0.5g/kg	04002/3
Totara	Complies	Complies	67%	0.9g/kg	110220
Matai ECR MkIII	Complies	N/A	71%	0.7g/kg	102148
Matai ECR MkIV	Complies	N/A	75%	0.8g/kg	102149
Matai ECR MkV	Complies	N/A	65%	0.7g/kg	102454
Matai ECR eco	Complies	N/A	69%	0.5g/kg	110263
IMF	Complies	Complies	N/A	3.9g/kg	N/A
Manhattan	Complies	N/A	67%	0.8g/kg	073735
Milford	Complies	N/A	N/A	N/A	N/A
RMF	Complies	N/A	83%	3.9g/kg	N/A
Strongman	Complies	N/A	N/A	N/A	N/A
Tarras	Complies	N/A	70%	0.88g/kg	094113
Tarras WB	Complies	N/A	65%	0.99g/kg	094114
Tarras MKII	Complies	N/A	69%	0.37g/kg	120925
Tarras MKII WB	Complies	N/A	65%	0.5g/kg	120927

Minimum Safe Installation Clearances to COMBUSTIBLE Materials



Factory flue shield fitted



Factory flue shield fitted

	BLAZE	ECR MkIII, MkIV, MkV & eco	MANHATTAN & BOSTON	MILFORD	RMF	STRONGMAN	TARRAS & TARRAS-WB	BRUNNER & TASMAN	ASPEN	TARRAS MKII See Flue Shield requirements
A	200	100	150	210	125	300	160	255	255	198
B	250	400	300	285	500	875*	550	435	435	530
C	300	300	300	300	300	GRAPH 1	GRAPH 1	300	300	300
D	150	150	150	150	150	150	150	118	118	67
E	100	200	140	100	180	380	300	190	230	210
F	371	251	318	381	276	441	301	404	404	340
G	560	740	610	628	790	1233**	906	743	743	913
H	421	512	459	446	492	711	626	481	521	554
J	920	880	920	986	880	1015	1015	850	850	898
K	1038	807	986	1054	832	1364	1184	1084	1084	1020
L	1264	1280	1318	1303	1252	1928	1769	1360	1417	1464
M	1113	1110	1151	1164	1060	1616	1493	1159	1219	1276
N	669	556	668	673	556	923	883	680	680	680
O	620	580	620	686	580	715	686	615	615	600

Dimensions A, B & E are taken from the combustible wall to the closest point of the appliance including panels
Dimension C is measured from the edge of the hearth to the closest point of the door frame.

Factory Flue Shields

Standard 900mm high flue shield:
Blaze, ECR, Boston, Manhattan, Milford & RMF

Standard 1200mm high flue shield:
Brunner, Tasman, Aspen, Tarras & Strongman

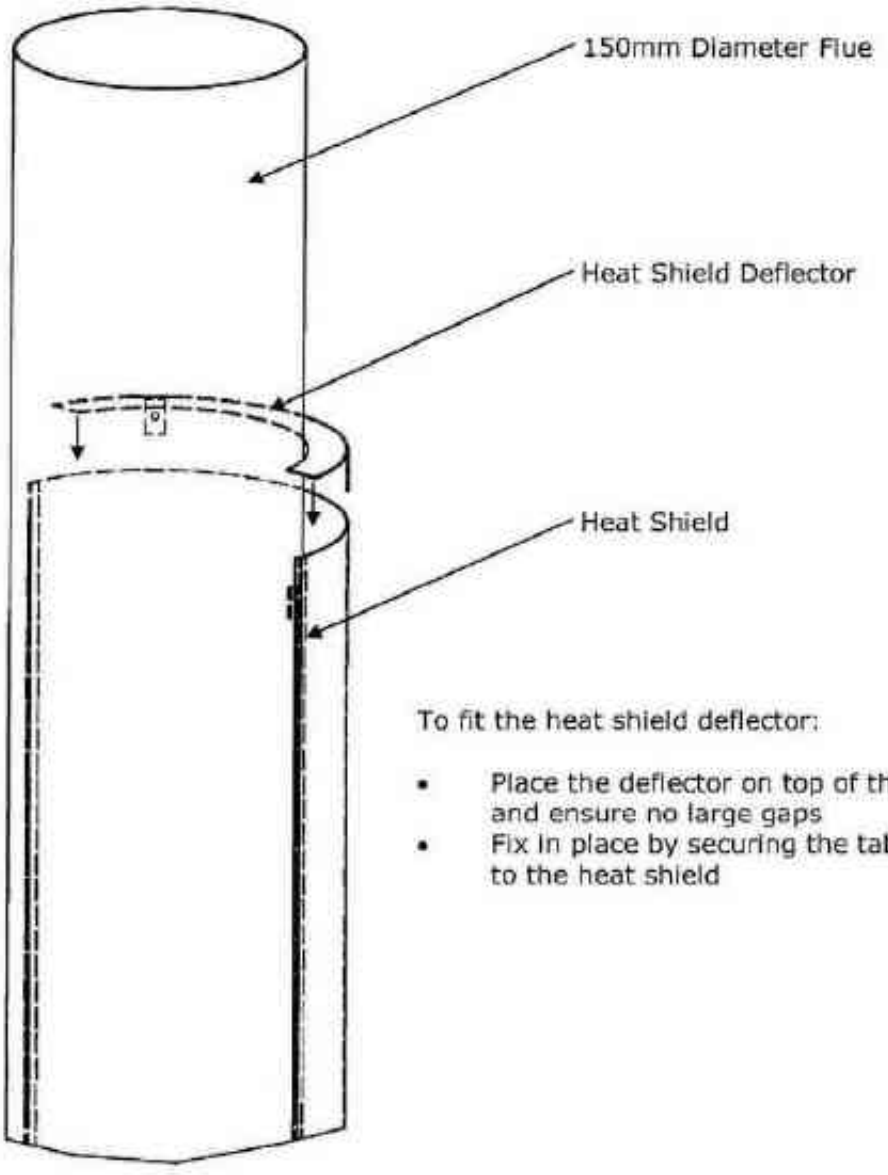
1200mm high flue shield with top air deflector (REQUIRED)
Tarras MKII (See Page 5)

All dimensions are given in millimetres.

*510mm with firebox side panels fitted.

**968mm with firebox side panels fitted.

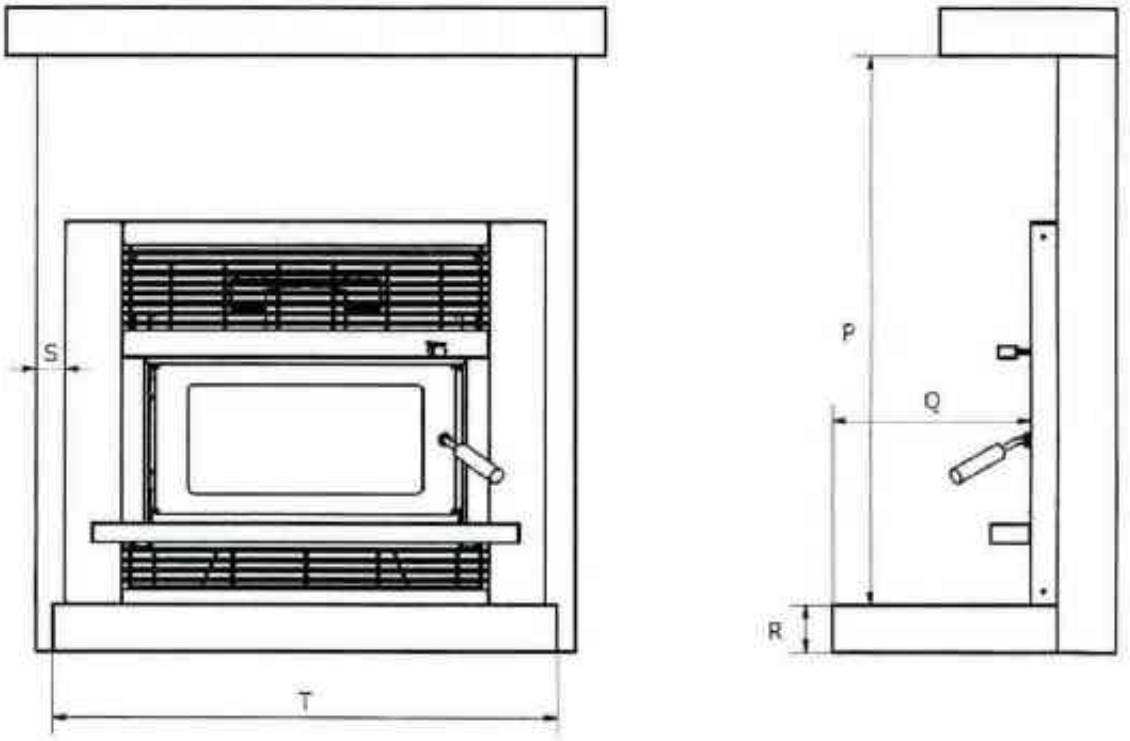
Fitting the Tarras MKII Heat Shield Deflector



To fit the heat shield deflector:

- Place the deflector on top of the heat shield and ensure no large gaps
- Fix in place by securing the tabs with rivets to the heat shield

Minimum Safe Installation Clearances to COMBUSTIBLE Materials

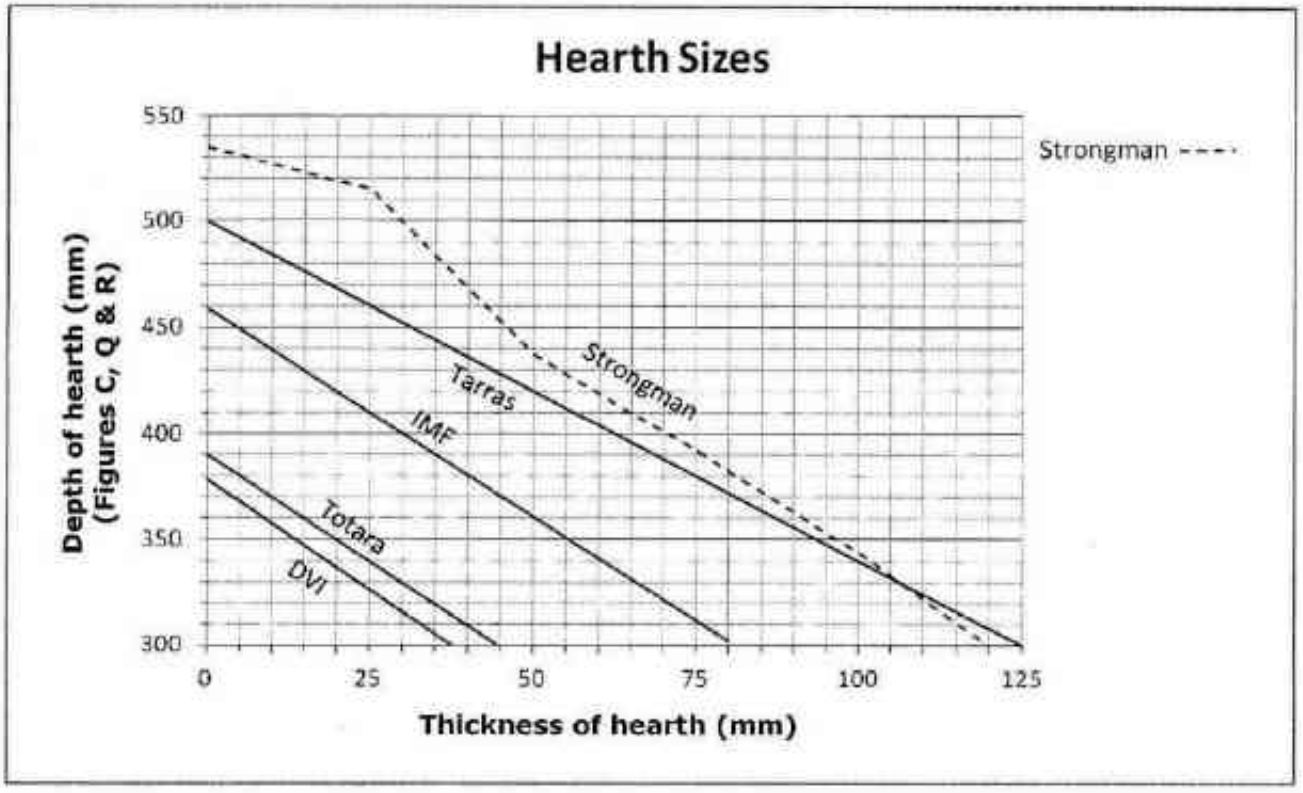


	DVI-165	IMF	Totara
P	930	980	1060*
Q	Graph 1	Graph 1	Graph 1
R	Graph 1	Graph 1	Graph 1
S	50	50	50
T	840	840	840

* Dimension P can be 920mm with a factory supplied heat deflector fitted

Hearth Graph

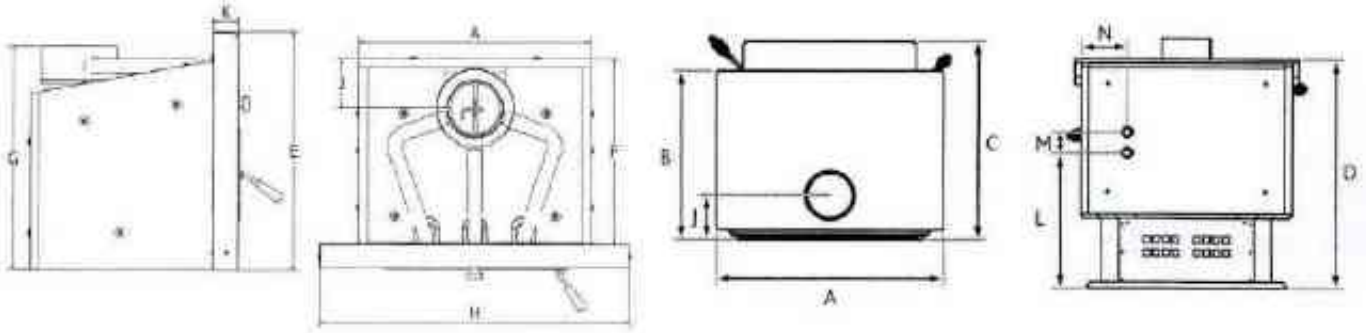
Graph 1



This graph refers to Page 4 figure C and Page 5 figures Q & R.

The hearth distance out in front of the fire (taken from the door), is dependent on the thickness of the hearth. The thicker the hearth is above the surrounding combustible floor, the less this distance is out in front of the fire.

Dimensions



		TARRAS	MANHAT-TAN	BOSTON	BLAZE	TOTARA	ECR MkIII, IV, V & ecs	DVI-165 Deluxe	STRONG MAN	RMF	IMF Deluxe	MILFORD	BRUNNER, TASMAN & ASPEN	Tarras MkII
A	Overall Stove Width	715	620	620	620	642	580	640	715	580	590	685	615	765
B	Stove Depth Door to Rear	530	572	572	541		407		550	407		544	554	547
C	Overall Stove Depth Ledge to rear	625	620	620	580		450		590	450		610	633	627
D	Overall Stove Height	722	740	740	740		620		695	620		725	730	772
E	Insert Fascia Height					650		648			740			
F	Insert Depth					506		506			480			
G	Insert Maximum Height					570		610			590			
H	Insert Fascia Width					840		810			850			
J	Flue Centre to Back of Unit	141	168	168	171	136	150	136	141	150	115	170	149	14:
K	Insert Fascia Depth					62		115			120/65			
L	Wetback Height	429					283						450	479
M	Wetback Centres	65					130						65	65
N	Wetback Position	150					290						106	181

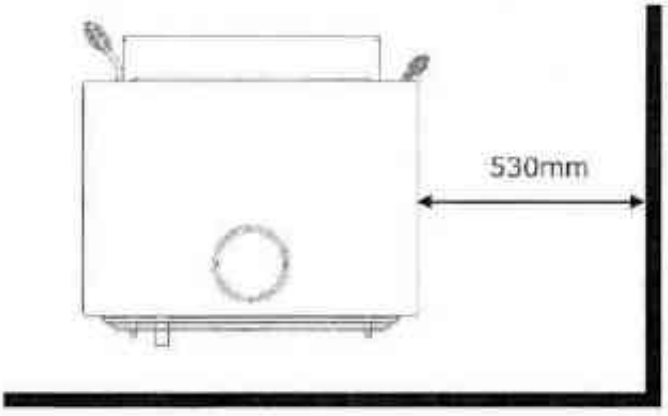
Reducing Clearances

The clearances that are provided on page 4 are to combustible materials. You can safely reduce those clearances by following the instructions located in AS/NZS 2918:2001

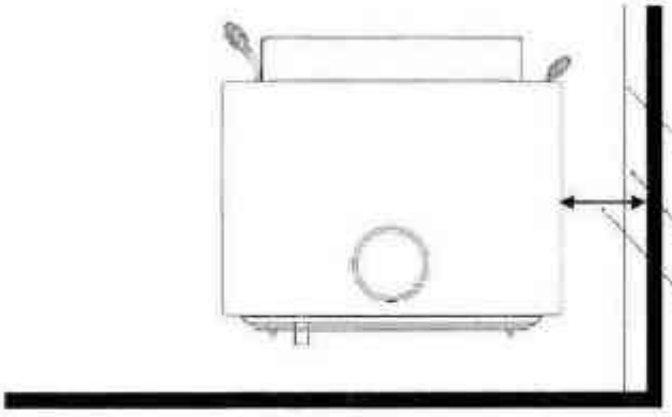
You can reduce the clearances by placing a non-combustible heat shield, with an air gap behind it, between the fire and the combustible wall. Masonry may be used as a heat shield material. The heat shield must extend a minimum of 400mm above the fire.

Clearance factors for heat shields which are within 45 degrees of the vertical

Heat Shield Construction	Minimum Air Gap Dimension	Clearance Factor
Single layer of continuous material	12mm	0.4
Single layer of continuous material	25mm	0.3
Two spaced layers of continuous material	12mm + 12mm	0.2



Unshielded Dimension for Woodsman Tarras MKII



Heat shield with 25mm air gap with Woodsman Tarras MKII

Single layer of continuous material

25mm Air Gap

159mm (combustible to stove)

530mm x 0.3 = 159mm

WARNING - This is only an example, you must refer to the full AS/NZS 2918:2001 document for more details and consult your local building inspector. Where heat shields are used to reduce appliance dimensions, additional flue shielding may be required.

Installation Instructions

This appliance should only be installed by a trained and NZHHA qualified installer.

Warning: the appliance and flue system shall be installed in accordance with AS/NZS 2918 and the appropriate requirements of relevant building code/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.

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 and broken components e.g. glass panels or ceramic tiles, may render the installation unsafe.

- Maintain a clearance of at least 1 metre between front of the appliance and building structure or any other substantial immovable object.
- If the appliance is installed on a heat sensitive floor, the floor should be protected with an insulation floor protector, which shall extend entirely beneath the heater. For the correct floor protector extension, refer to dimension C in FIG 1 & 2.
- Your appliance shall be seismically restrained, including the floor protector using the provided holes or brackets. The restraints should be sufficient enough to resist a seismic loading equal to 0.4 times the mass of the appliance. We recommend a minimum of 8mm dynabolts on concrete floors and 8mm coach screws for wooden floors of appropriate length.

WETBACK WARNINGS:

- Do not connect to an unvented hot water system.
- **NEVER** burn the appliance without the wetback connected to the water system. This will immediately damage the wetback and void the warranty.
- Install in accordance with AS 3500.4.1 or NZS 4603 and the appropriate requirements of the relevant building code/codes.

Minimum Material Specifications For Floor Protectors on a Floor of Combustible Material

MODEL	SPECIFICATION
BRUNNER TASMAN ASPEN TARRAS MKII	9mm Eterpan LD + 8mm ceramic tiles
BLAZE, ECR (MkIII, IV, V & eco) MANHATTAN BOSTON RMF DVI-165* Totara*	8mm of ceramic tiles
MILFORD	12mm HardiFlex
STRONGMAN TARRAS	24mm Eterpan LD

*The DVI-165 & Totara are also approved with 1mm sheet steel with a 10mm spacing above combustible material. For use when extending hearths.

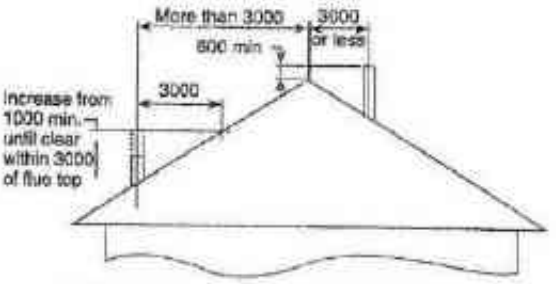
Minimum Flue Height

The top of the flue system should be at least 600mm above the highest point of the roof ridgeline, if the point of intersection of the flue system and the roof-line is less than 3 metres from the ridgeline horizontally.

If the point of intersection of the flue system and the roofline is greater than 3 metres horizontally, the top of the flue system shall be at least 1 metre above the point of intersection with the roofline. (refer FIG 3)

FIG 3.

DIMENSIONS IN MILLIMETRES



MINIMUM HEIGHT OF FLUE SYSTEM EXIT

These are considered to be **minimum dimensions,** and depending on local conditions, **taller flue system heights may be required for satisfactory performance.**

Flue Installation Detail

Your Woodsman appliance should be installed with a HeatSaver Flue System.

A HeatSaver Flue System is available from all authorised Woodsman dealers throughout New Zealand.

The HeatSaver Flue System contains a complete installation drawing and correct clearances from the ceiling level up. Minimum clearances from the appliance to nearby combustible surfaces are given in FIGS 1 & 2.

Use of a flue system other than a genuine HeatSaver Flue System may affect the safety of the installation, and may affect your Woodsman warranty.

Insist on a genuine HeatSaver Flue System.

Installation requirements for Woodsman fireplace inserts and flue system where timber framing is less than 50mm from the chimney structure.

Installation should be carried out by a qualified installer who will ensure:

- That the minimum clearances determined by tests in accordance with AS/NZS 2918:2001 are complied with to prevent overheating of nearby combustibles.
- That the minimum opening size of **600mm wide x 600mm high x 500mm deep** is available when firebricks are removed, and that extra provision also be made for plumbing where a hot water booster is fitted (where permitted).
- That any flue requirements specific to the model being installed are met in full - refer HeatSaver Flue System Instructions.
- Where the fireplace opening is in a heat sensitive wall, a non-metallic heat resistant material shall extend not less than 50mm beyond each side of the appliance and 150mm beyond the top of the appliance.
- Clearance of at least 1 metre between the front of the appliance and building structure, or any other substantial material object.
- That the insulating floor protector of non-combustible material is provided, extending not less than the dimensions shown in the chart. (Refer Table 2)
- A fireplace appliance shall not be connected to a flue common with an open fireplace.

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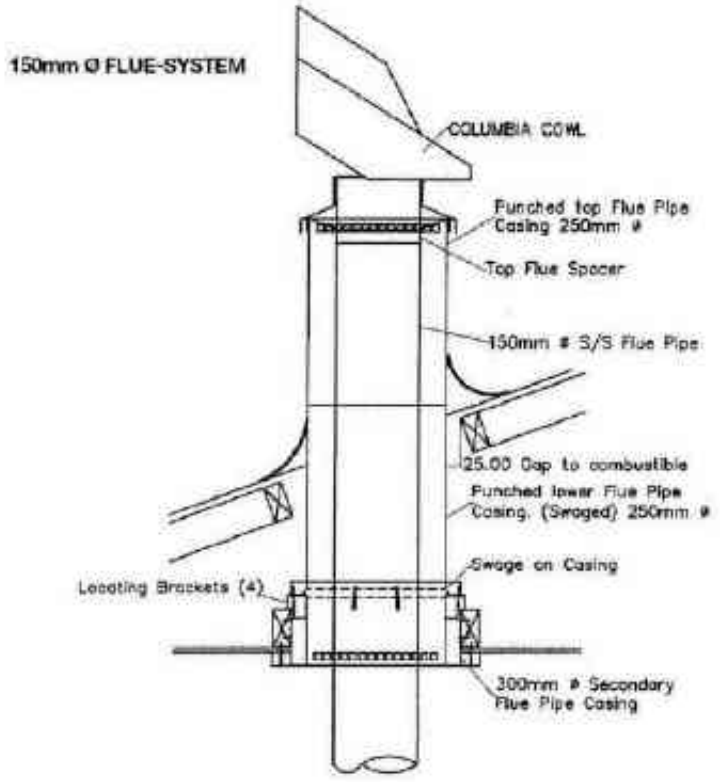
HeatSaver Flue Kit Installation

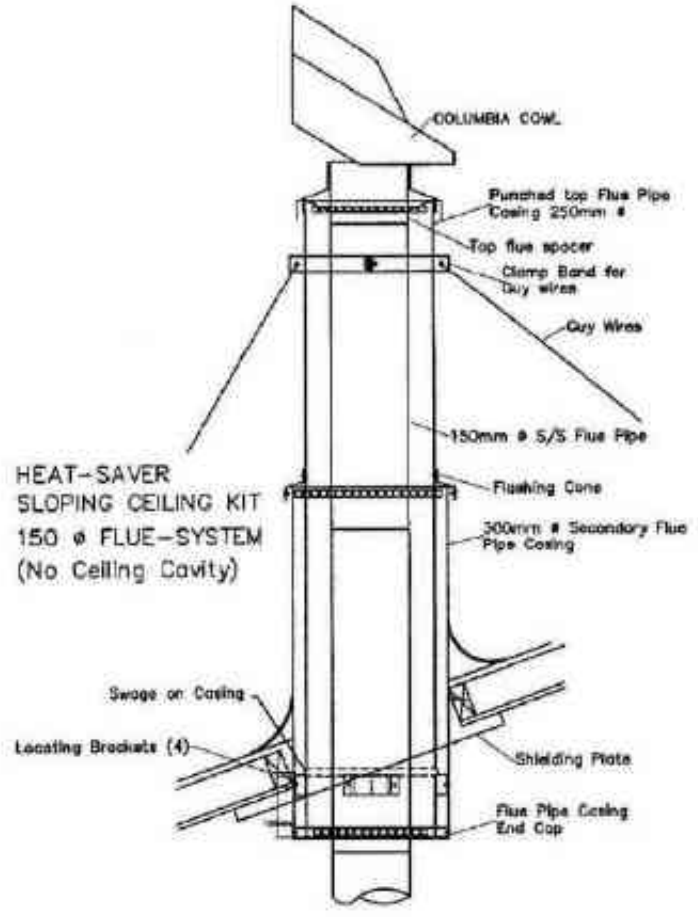
HeatSaver
FLUE SYSTEM

INSTALLATION INSTRUCTIONS

- This HeatSaver flue system is tested and certified to AS/NZS 2918:2001 Appendix F, which means it is approved for use on all solid fuel appliances with a flue diameter of 150mm.
- A copy of the Laboratory Test Certificate for this HeatSaver Flue System is included as part of these Installation Instructions, (refer to paperwork with flue kit).
- Installation of any solid fuel appliance should only be carried out by suitably trained and qualified personnel.
- Position the stove to the desired position, always ensuring that the manufacturer's minimum clearances to combustibles are complied with.
- Check that there are no roofline ridges or valleys in the way, or if they cannot be avoided, that the installer knows how to weatherproof the penetration and reinstate the full strength of the structure.
- At the ceiling level, construct a square frame of 300mm x 300mm internal dimensions and cut away the ceiling materials from the inside of this frame.
- Lower the 300mm flue pipe casing into this frame and nail in place when the bottom edge is 25mm below the ceiling level and the 8 nail holes provided are touching the timber frame. Ensure that the spacer brackets are at the top of the casing as shown in the diagram.
- Check all 4 locating brackets are securely in place and drop 250mm diameter lower casing in place. This will naturally settle so it protrudes 25mm below the ceiling.
- Make roof penetration, assemble and fit required flue length and install with upper casing. Secure all joins with at least 3 stainless steel rivets or self tapping screws.
- Frame and brace upper installation as required and flash the roof to shield penetration.
- Fit ceiling plate to ceiling.
- When trimming the stainless steel flue length, remember to allow for expansion when flue is hot.
- Fix HeatSaver Columbian Cowl in place. Fixings are not required as the cowl clips into place.
- Secure the flue to the fire—drill through flue neck on fire and secure with 2 to 3 s/s screws or rivets.
- All flue joints should be sealed using a flue cement.

HeatSaver Flue Kit Installation





Operating Instructions
(Burning Wood)

Keep these instructions for future reference

Important: ensure installation instructions have been adhered to before lighting the appliance.

Important: firewood should be loaded in a front to back direction when operating this appliance, except Matai ECR MkIII, MkIV which should be loaded left to right.

Warning: any modification of the appliance that has not been approved in writing by the testing authority is considered as breaching AS/NZS 4013.

Warning: do not use flammable liquids or aerosols to start or rekindle the fire.

Warning: do not use flammable liquids or aerosols in the vicinity of this appliance when it is operating.

Warning: do not store fuel within heater installation clearances.

For your comfort, it is advised that you light your first fire with the windows open to allow the escape of paint fumes. This will normally happen for the first 30 minutes of the first burn.

Fully open the heat control. Place wood kindling and paper or firelighter in the firebox. Ignite and leave the door partially open by resting on the catch until the fire is blazing (4-5 minutes), and burns well with the door closed. Do this only from a cold start. Once the fire is underway, adjust the heat control to suit. If the firebox or the flue becomes visible red-hot, adjust the heat control to a lower heat position to avoid being unnecessarily harsh on the unit as well as wasting excessive heat up the flue.

Warning: always open the heat control before opening the fire door.

For long holding operation in a Clean Air Zone, level the ashes and load with the firewood lying front to back, or left to right in a Matai ECR MkIII, MkIV. After loading new wood, operate the fire with the heat control fully open for 20 minutes before closing the heat control to the lower burning position. By following this simple method of low burn firing, you will achieve very low emission rates and obtain the high efficiency burn that is associated with the Woodsman product.

The fuel approved for use in Clean Air Zones in this appliance is wood with a moisture content of less than 25% of dry weight. This usually means green timber left for at least three months to air dry.

Caution: the use of some types of preservative-treated wood as a fuel can be hazardous.

Caution: this appliance should not be operated with cracked glass.

Caution: this appliance should be maintained and operated at all times in accordance with these instructions.

The door must be closed at all times during the operation, except during refuelling and occasional poking of the fire when necessary. Ensure door seals are maintained in good condition.

Your appliance and flue system should not be modified in any way without the approval of the manufacturer.

Operating Instructions
(Multi-fuels)

Your Woodsman Multi-fuel will operate perfectly well burning coal, wood, briquettes or a mixture of any of these. Often the hottest temperatures are achieved by burning a mixture of wood with coal laid over the top.

The appliance has two heat controls. The High - Low control to the left of the ash pan door is for use when burning coal, briquettes, or a mixture of wood and coal. The High - Low control above the fire door is for use when burning wood only.

Set the fire using kindling wood and paper (or a solid fuel lighter), light and close the door; set the lower High - Low control on High and the upper High - Low control on Low. Once the fire is burning brightly, decide if wood or coal is to be used. If coal is to be burned, lay the coal over the burning fire and adjust to suit. If wood is to be burned, place dry logs on the fire and set the lower control to Low and the upper control to suit the required burning rate.

Important: Ensure the ash pan door is closed firmly before lighting, and remains so during use. **Do not** have both controls fully open at the same time. If burning wood, the lower control should be fully closed; if burning coal, the upper control should be set to Low.

If the ash pan door knob is removable, it should be removed while the stove is in use. This is a safety feature designed to avoid the ash pan door being opened by children in particular, and risking any overheating of nearby combustibles by the increased combustion rate.

Creosote Formation

A small intense fire is preferable to a large smouldering one, to reduce the amount of creosote. When wood is burned slowly it produces tar and other organic vapours, which combine with expelled vapour to form creosote. These creosote vapours condense in the relatively cool flue of a slow burning fire. As a result, creosote residue accumulates on the flue. When ignited, this creosote makes an extremely hot fire.

The flue should be checked at least every 2 months, during the burning season, to determine if a creosote build up has occurred. If this is the case, it should be removed by a chimney sweep to reduce the risk of an unexpected flue fire.

Your appliance has been designed to produce low levels of creosote at high and low settings.

In the event of a chimney fire, close the firebox door, fully close the heat control, vacate the premises and call the fire service.

Storage of Fuel

Do not store fuel within installation clearances or within the space required for refuelling or ash removal.
Wood should always be stored in a dry place out of the rain. We recommend your wood be seasoned for at least 3 months before use. Dry wood also burns hotter and more efficient than wet wood.

Caring for your Fire

Cleaning your Glass
Wiping your glass regularly with a damp cloth when cold will keep the glass clean. If a thick build up of creosote builds up, oven cleaner works well to remove it.

Cleaning the Outside of the Fire
Woodsman fires are finished in a high temperature paint. Only use a damp cloth (no chemicals) when cleaning the outside of the fire. If any scratches occur, you can easily touch up the fire with an aerosol can of matching paint. This is available from your retailer or Harris Home Fires.

Cleaning the Flue
Keeping your flue clean is important. We recommend that you have your chimney swept at least once a year. A blocked flue not only effects the performance of the fire, but can also be a hazard as you are susceptible to chimney fires.

Ash Level
It is important to maintain a 2 - 3cm level of ash in the bottom of the fire for insulation purposes. But do not let the level get too high as you run the risk of logs and coals falling out of the fire. You also get less wood in the firebox.

Disposal of Ashes
Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground well away from all combustible materials, pending final disposal once cooled.

Consumables

Some parts of your Woodsman fire are considered consumable. They are designed to be replaced as they will degrade over time. The life of the consumables will vary depending on;

- Frequency of use. How often the fire is used
- Rate of burn. Is the fire burning on low or high the majority of time
- Type of fuel. Some woods and coals are much harsher than others.
- Level of ash. High levels of ash can push embers up and over rear air tubes

General items that are considered consumables:

- Baffles
- Fire bricks
- Air tubes
- Glass and door ropes

It is very important that you replace these parts when they show sign of wear. They effect how the fire runs and you may increase your fuel consumption or lower your efficiency if not replaced, and can in some cases, damage the firebox. It is generally obvious once a part is in need of replacement. Steel components may split or large holes may appear and fire bricks may disintegrate. Fire bricks that are cracked but still remain in place are completely safe to use and only need to be replaced when they no longer remain in place. A cracked fire brick may still last years of use.
We recommend you check your fire visually several times a year for damaged components.

Useful Tips
Get the most out of your Woodsman

Tips for lighting the fire

- Use finely cut, dry kindling wood.
- Firelighter cubes or gel work best when ensuring ignition of the kindling.
- Cross stack kindling over and around fire lighter like a small tower.
- Use ample kindling wood to ensure a good fire, you want to get the fire hot as fast as you can.

Tips to help get the highest heat output:

- Open the air slide to increase the amount of combustion air to the combustion zone.
- Use smaller pieces of wood and lots of it. Small pieces of wood have a larger surface area compared the same volume of wood but in larger pieces.
- Feed the fire regularly. Keep the fire topped up with fresh wood to keep the temperature up in the combustion zone.
- Use dry wood. Wood with a moisture content of less than 16% will burn much hotter than damp wood. Use a moisture meter to determine the moisture content of the wood.
- Use a soft wood. Soft woods like Radiata Pine burn fast and hot.

Tips for increasing the burn time:

- Shut down the air slide to decrease the amount of combustion air to the combustion zone.
- Use large pieces of wood. Large pieces have a smaller surface area compared to small pieces of the same volume and will burn slower.
- Use a hard wood like Blue Gum (where permitted). Hard woods are denser and take longer to burn.
- Completely fill the fire box with large pieces of wood. The more wood in the fire, the longer it takes to burn.
- Load the wood at the right time. If you load the fire when there is a large amount of red embers, the wood will all combust at the same time. A good idea is to let the fire burn down quite considerably and push the embers off to one side. Stack the wood in the firebox and the wood will ignite on one side only and slowly burn from one side to the other.

Tips for using the wet-back:

- The hotter the fire burns, the more hot water the wetback will produce.
- If you require some hot water but not too much heat into the room, try burning a small fire at the back of the firebox below the wetback.

Tips for using the cook top:

- The cook top is hotter in the middle than at the sides and hotter at the front than at the back.
- Like the wetback, the cook top's temperature is linked to the output of the fire.
- Any stains from pots or mugs can easily be touched up with matching high temperature paint.

Trouble Shooting

My fire won't turn down

The first thing to be aware of is that some new clean air fires do not shut down like old fires. Old fires used to shut all the way off and the wood would just smolder.
Other reasons for this problem may be:

- Rear air tube has burned out and needs replacing, visually check.
- Door seal is not sealing properly and may need replacing. Take a thin strip of news pa per, close the door on it at various spots, if the paper can be easily pulled out, then either a new door rope is needed or door latch needs adjusting by redistributing the washers on the door latch.

There is rust on my fire

Rust appearing on your fire can only occur when moisture or water is present and has began to oxidize the steel.

- Identify where the water or moisture has come from and fix the problem.
- Lightly sand the effected area and use matching Woodsman aerosol high temperature paint to touch up.

My glass is dirty

Your glass can get dirty easily if you use poor quality or wet wood or spend a lot of time with the fire on the low setting.

- Give the fire a good hot run on the high setting to burn off the residue on the door
- If that fails, there are special cleaners especially for this purpose or oven cleaner works well. Do not get chemicals on the paint work.

My fire smokes when I open the door

There are many reasons which may cause this symptom and it is often a process of elimination to remedy the problem.

- Your flue length may be too short. Even though it may be of legal length, every installation is different and you may require an additional length of flue.
- Your flue may be blocked, have the flue looked at.
- The baffle may not be in place correctly, visually check to see if it has moved.
- You may need a cowl like the Woodsman Columbia cowl to help encourage draw, especially where there are environmental problems like high winds.
- Your flue may be getting too cold. If the flue gases get too cold, they can struggle to be exhausted and when the door is opened, they find it easier to exit via the door than the flue. If you suspect your flue is getting cool, turn the fire up onto high for a few minutes before reloading, this will increase the temperature of the flue and increase the flue draught.
- Check that the installer has sealed **ALL** the flue joints and there are no gaps which will leak air into the flue, reducing the draw.

The paint has been damaged

Paint finishes are not as durable as enameled finishes, but they are extremely quick and easy to touch up and the fire can look new in minutes.

- If damage has occurred to the paint, lightly sand the effected area and touch up using Woodsman High Temperature Paint.

My fire seems to be performing poorly, not burning well on high

If your fire doesn't seem to burn well at the high level, check the following:

- Negative pressure, make sure there are no extraction devices like fans creating a negative pressure in the home.
- The flue length is long enough.
- The wood is dry.
- The flue is clean.

WOODSMAN

Warming kiwi homes since 1887.

15 Year Firebox Warranty - Wood fires
10 Year Firebox Warranty - Multi-Fuels
1 Year Parts Warranty - All Fires

Your WOODSMAN fire is warranted for a period of 1 year to the original purchaser, from the date of purchase, against defective materials and workmanship which includes the firebox and all parts.

If a part defect occurs, return the part to the retailer or directly to Harris Home Fires along with a copy of the retailers receipt and the part will be replaced at no cost.
If a firebox defect occurs, either contact the retailer or Harris Home Fires and it will be repaired or replaced at our discretion with all costs covered.
This warranty does not cover damage caused by mishandling, misuse, failure to follow the manufacturer's installation and operating instructions, or work done by others, such as installers, or plumbers etc. The manufacturer shall not be responsible for site conditions such as insufficient draught, downdraughts, or routine servicing and adjustments.
Damage caused by the failure to replace consumables like air tubes, baffles and fire bricks may void the warranty.

Your WOODSMAN firebox is then covered by a further 9 year warranty against defective materials and workmanship during normal domestic use.
In the case of a claim after the first year, this warranty covers the replacement or repair at the manufacturer's discretion and includes freight, painting and all required refurbishment but does not cover the cost of having the appliance disconnected and reconnected.
It shall be the owner's responsibility to have the fire available and ready for pickup from onsite or another suitable location or deliver the WOODSMAN fire to either the dealer from whom it was purchased or directly to Harris Home Fires.

Your WOODSMAN **WOODFIRE ONLY** is then covered by a further 5 year warranty on the fire box against defective materials and workmanship during normal domestic use.
In the case of a claim after the first 10 years, it shall be the owner's responsibility and expense to deliver the WOODSMAN fire directly to Harris Home Fires, and the reinstallation after any repair has been made. Harris Home Fires will repair and refurbish the fire, including painting as necessary and deliver the back to the customer.

harris HOME FIRES

Harris Home Fires
41 Braddon St
Addington
Christchurch 8024
New Zealand
Email sales@hhf.co.nz

P O Box 4043
Christchurch 8140
New Zealand

Phone 03 366 1796
Freephone 0800 3661796
Fax 03 366 1795

35 BENSEMANN RD UPPER MOUTERE
WIND ZONE; A, Open, T3, Exposed = VERY HIGH
CORROSION ZONE; C
WALL CLADDING RISK MATRIX

	wall A	wall B	wall C	wall D
wind zone	2	2	2	2
no storeys	0	0	0	0
roof/wall	5	5	1	0
eave width	5	5	5	0
envelope	0	0	0	0
decks	0	0	0	0
TOTAL	12	12	8	2

Cladding; vertical corrugated profile metal direct fixed (less than 21)

INSULATION CALCULATIONS;

Ceiling	83.1m2; R3.6 batts between trusses provides R3.45
Glazing...	north wall 9.66m2 double glazed R0.26 (40.6% of wall)
	other walls 13.66m2 R0.26 (21.3% of these walls)
Walls	64.5m2 R2.4 batts between framing provides R2.0
Floor	vapour barrier under 100mm slab = R1.3

Insulation exceeds minimum required by schedule Method (NZS 4218)

POST UPLIFT CALCULATIONS
Roof area centre post; 2.9m2 = 0.2m3 footing (0.4x0.4x0.8+slab)
Roof area end post; 1.62m2 = 0.11m3 footing (0.35x0.35x0.9)
Carport post roof area; 3.35m2 = 0.23m2 footing (0.45x0.45x0.8+slab)
allow 1.0x1.0x0.1 for slab = 0.1m3

WATER SUPPLY; 125.4m2 roof area to 30000L water tank with 75L 1st flush
Treatment; 20 & 1 micron filters & UV.

WASTEWATER; refer wastewater report

Tasman District Council
BUILDING CONSENT AUTHORITY
APPROVED
- 7 MAR 2013
BUILDING CONSENT
ALL WORK IS TO COMPLY WITH THE NZ BUILDING CODE
DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL

SPECIFICATION FOR
NEW COTTAGE 35 BENSEMANN ROAD UPPER MOUTERE

PRELIMINARY AND GENERAL
This contract comprises the construction of the two bedroom cottage and carport as detailed on the drawings and specification or as reasonably implied.
The Contractor (the Contractor is the owner) shall give required notice for all inspections and ensure all work is carried out for compliance certificate issue on completion.
The Contractor and all Subcontractors shall ensure all workmanship, construction and materials comply with the requirements of the relevant building standards.
Construction techniques, personnel protection, work environment, equipment and structures are to comply with the NZ Building Act, Health Safety and Employment Act and all other requirements to ensure safety on site.
Any minor variation from the plans or specification must be approved by the building inspector before constructed. Any other variations such as cladding, lining or window changes will require Building Consent Amendments and amended plans and specification before constructing as required by Tasman District Council.

EXCAVATION AND BACKFILL
EXCAVATIONS; remove all vegetation and top soil over the building area.
All foundations shall be to good bearing (NZS3604) and shall be inspected by the Building Inspector before placing reinforcing or concrete. Hand trim to remove all loose material.
BACKFILL; shall be approved hardfill compacted in 150mm layers.
Sewer waste pipes below the slab shall be installed after general backfilling. Where pipes pass under or through foundations they shall be adequately separated from both concrete and adjacent soil to prevent damage by foundation movement
Finish with 25mm sand blinding to 100mm below FFL. Cover with 0.25mm polythene vapour barrier. Lap joins 150mm and seal with adhesive polythene tape. Patch and tape all damage to the polythene.

CONCRETE AND REINFORCING
Concrete and reinforcing shall comply with NZBC B1 & B2, NZS 4671 & 3109. Concrete shall be ready-mix 20MPa. Reinforcing bars shall be grade 300E, mesh grade 500E. Lap bars 40x diameter & mesh 200mm.
Reinforcing shall have 75mm separation from ground.
Floor slabs to be 100mm thick with mesh lapped 400mm to starter rods and spaced 40mm above polythene.
Vibrate and finish to a fine, level surface (NZS3114).
Provide control joint saw cut 25mm deep as per drawings. (6m max cc)

CARPENTRY
Workmanship and materials shall comply with NZS 3604:2011 and the NZ Building Code.
Timber shall comply with NZS 3631, 3602, 3604. Grade SG8.
Wall framing, exterior wall studs at 400crs, internal walls 600crs, 2 rows dwangs.
TREATMENT; (minimum)
All timber fixed to concrete shall be protected with DPC.
Wall framing, trusses & purlins; H1.2.
Carport wall framing and roof members, veranda roof members, exterior facings and fascia; H3.1
Veranda and carport beams; H3.2. Poles; H5
Moisture content to be 18% max before cladding and 14% before lining.
FIXINGS; (very high wind zone)
Exterior bottom plate fixing to concrete; M12 screw Ankas 900crs & at bracing element ends, M12 bolts set 90mm into concrete @ 900crs for carport
Internal walls; 75 x 3.8mm shot fired nails with 16mm washers 600cc, M12 bolts at bracing element ends.
Trusses to top plate; 2/CT200 as specified on truss plan sheet 5
Purlins to rafter/truss; 1/10g-80mm purlin screw.
Top plate to studs; 2/90mm nails & Lumberlok stud tie as specified on truss plan sheet 4
Lintels; refer to MiTek details as specified on truss plan sheet 3
Bracing elements refer to Villaboard and ECOPLY details.
MATERIALS;
Building wrap; Tyvek homewrap, gables above top plate; Tekton universal wrap.
Soffit lining (verandas); 140x19H3.1 pine. Carport ceiling unlined.
Insulation; Exterior walls R2.4 batts, Ceiling R3.6 batts.
Exterior windows and doors shall be fixed and flashed as required for cladding type and to comply with NZBC E2 & NZS 3604. Dress the building wrap into all sides of the opening and seal the sill and top corners with flashing tape. Install foam backing rod and expanding polyurethane foam around the reveal.

Internal linings; Walls; 6mm Villaboard. Ceilings; 90 x 12mm t & g on 70x35 battens 600crs.
Internal finishings; 70 x 19H3.1 architraves
WORKMANSHIP; Check all wall framing is plumb and square, check wall and ceiling framing for line and face before fixing linings, straighten or replace as necessary.

ROOFING

Colorsteel ZR8 corrugated for house and verandas, 5 rib ZR8 colorsteel for carport roof, fitted in accordance with NZBC E2 by approved fixers. Roof underlay to be self-supporting laid horizontal over netting for verandas and carport, or vertical with 150mm laps for house. Roofing to overhang 50mm into gutter. Fix matching barge, ridge and apron flashings. All exposed fasteners shall be colour matched. Roof must be completely weather tight and bird proof. At completion clean roof and gutters of all metal fillings, discarded nails, rivets etc. and make good any scratches or dents.
Provide written guarantee to owner for roofing (15 year) and workmanship.

WINDOWS AND DOORS

Windows and doors shall be double glazed, manufactured by an approved Aluminium Joiner to comply with NZS 4211 & glazing to NZS 4223 & NZBC F2. Grade A safety glass to bathroom window and door (clear stippolite). Sills to have condensation channel, liners to be 19mm H3.1 pine. Supply colorsteel head and sill flashings to match cladding.

ELECTRICAL

Electrical work shall be by certified electrician to comply with the NZBC G9, the Electrical Wiring Regulations and NZ standards. Initial power supply shall be by petrol powered generator (off grid).
Install distribution board and cabling for switched sockets (generally 300mm off floor, 4 per circuit) and light sockets (switches 1200mm off floor, 1kW per circuit) and other cabling as required for appliances.
Install smoke alarms (with hush button) to comply with NZBC F7, locations as on plan.

PLUMBING & DRAINLAYING

Plumbing shall be by registered plumber and comply with the NZBC G12 & G13. Notify the Contractor of positions of blocking etc for the support of fittings. Holes for pipes shall be minimum size required and positioned to ensure the structural integrity of the building is not compromised.
Internal water pipes shall be butylene. Lag all hot water pipes and all pipes in ceiling with Climaflex XT foam pipe lagging (or similar). Install gas water heater and gas pipe from gas bottle location. Trench 400mm deep and install 20mm polythene water pipe from 30000 litre water tank and connect to pressure pump in carport. Fit 20 & 1 micro filters and UV treatment. Pressure test on completion.
Waste pipes shall be 40mm at 1:40 minimum gradient and 1:30 gradient for tub. Fit 80mm terminal vent.
Install downpipes and pipes to water tank as shown and fit 75L first flush unit.
Fireplace; install to manufacturers instructions. Bolt to concrete floor with 2/M8-50 trubolts. Install flue and roof flashing.
Drains shall be laid as per the drainage plan and Waste-water specification in accordance with the NZBC G13 & E1 by registered drainlayer. On completion the Drainlayer shall supply as-built plan to the Territorial Authority.
Drains shall be 100mm uPVC, laid at 1:100 minimum gradient, laid in 100mm crushed metal and covered with same. Install inspection eyes at junctions and bends. Finished cover shall be 350mm min.
Install gully traps to 50mm above FGL. Drains to be tested and inspected before backfilling and compacting.

VERTICAL CORRUGATED COLORSTEEL CLADDING

Cladding shall be Colorsteel 0.40 Endura. Fixing shall be 12g x 35mm hexagonal head galvanised screws with neoprene washer through every second trough to framing.
See E2 figure 94 for corner flashings, figure 93 for base.
See attached detail for window and door flashing.

PAINTING AND PLASTERING

6mm Villaboard with recessed edges shall be fixed and stopped in accordance with the Villaboard Technical Specification to Level 3 finish. Apply 5-8mm polymer-modified cement based plaster to Villaboard by trowel.
Paint with Resene Limelock acrylic sealer and 2 coats Resene X200 or similar.
Ceilings; 2 coats polyurethane satin.
Exterior timber; apply 2 coats Sikkens oil based stain or similar.

FIXTURES & FINISHINGS

Floors; Kitchen and bathroom, tiles
Shower; 900x900 corner (acrylic 2 sides & tray, glass panels & door).
Cooktop; (gas) element 150mm min from tiled or toughened glass splashback to 150mm high min.

BRACING Wind Zone Very High EQ Zone 2C

Single storey

Building height to apex	4
Roof height above eaves	1.5
Stud height	2.4
Building Length	13.9
Building Width	8.4

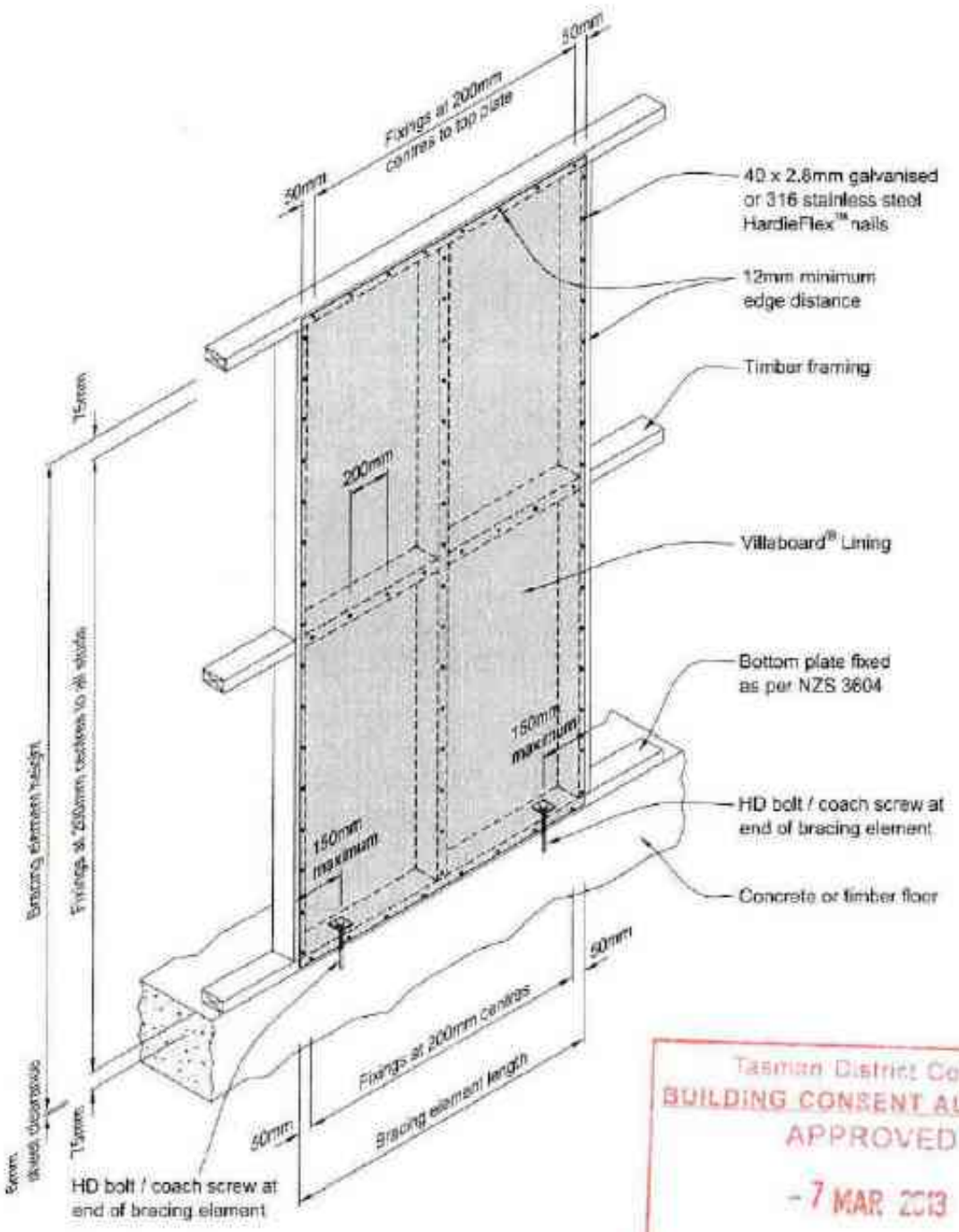
floor	slab
Cladding	light
Roof	light
pitch	17.5
Area	107.1

	Walls	BUs req
Wind Along	58.5	491.4
Wind Across	52	722.8
Earthquake	3.6	385.56

ALONG					wind		EQ	
line	number	type	height	length	rating/m	bracing	rating/m	bracing
a	1	VB1	2.4	2.4	80	192	60	144
	2	VB1	2.4	1.8	80	144	60	108
	3	EP1	2.4	1.2	125	150	130	156
b	1	VB1	2.4	2.4	80	192	60	144
	2	EP1	2.4	1.9	125	237.5	130	247
c	1	VB1	2.4	1.2	80	96	60	72
	2	VB1	2.4	1.2	80	96	60	72
	3	VB1	2.4	1.2	80	96	60	72
Total achieved					Wind	1203.5	EQ	1015
Total required					Wind	492	EQ	386

ACROSS					wind		EQ	
line	number	type	height	length	rating/m	bracing	rating/m	bracing
m	1	VB1	2.4	3.6	80	288	60	216
	2	VB8	2.4	0.6	93	55.8	98	58.8
n	1	VB1	2.4	3	80	240	60	180
	2	VB1	2.4	2.4	80	192	60	144
o	1	VB2	2.4	0.9	100	90	85	76.5
	2	VB2	2.4	0.9	100	90	85	76.5
	3	VB1	2.4	2.4	80	192	60	144
p	1	EP1	2.4	1.2	125	150	130	156
Total achieved					Wind	1297.8	EQ	1051.8
Total required					Wind	723	EQ	386

13 Bracing figures — linings



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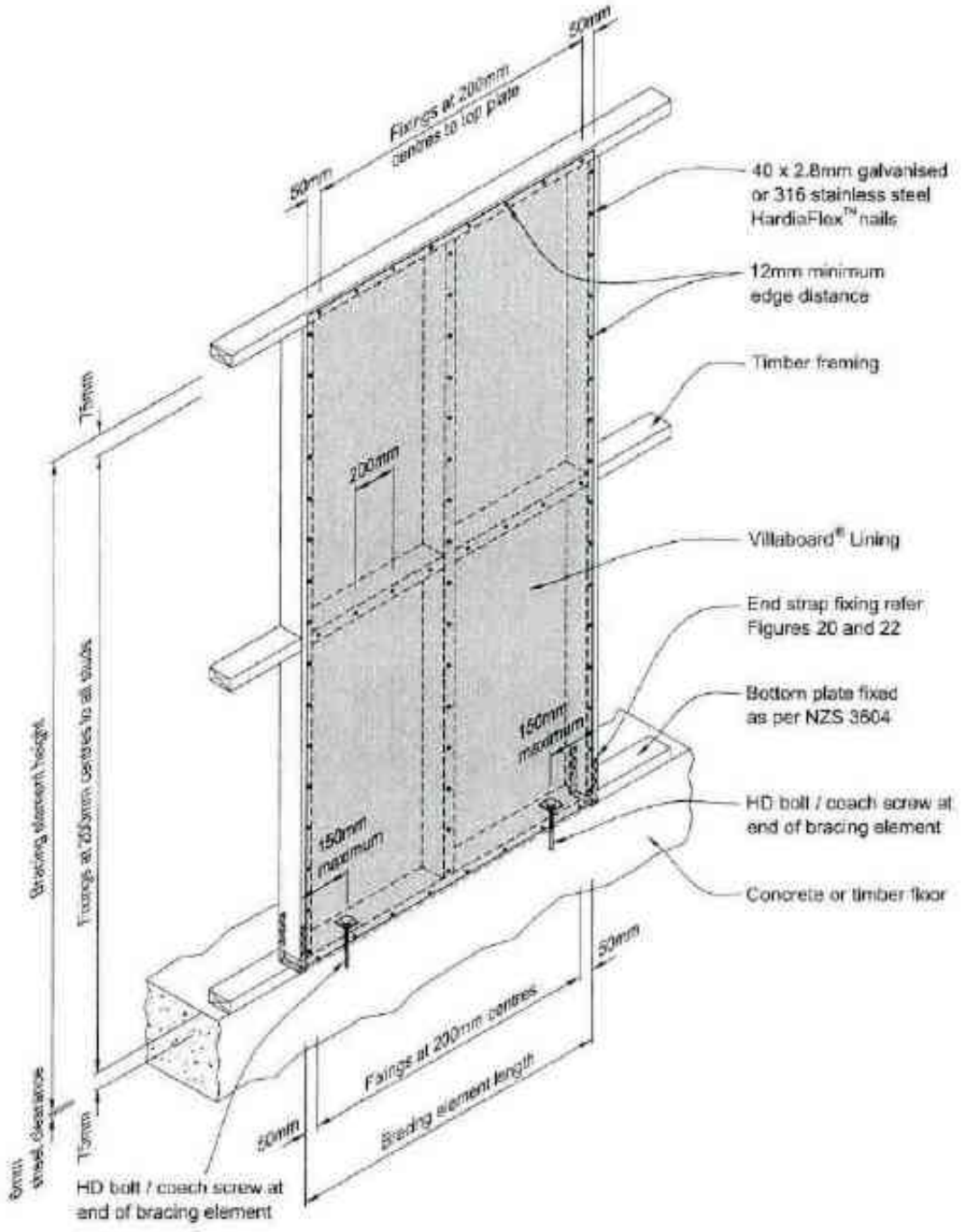
FIBRE CEMENT FIXING DETAILS

Notes for Figure 1:

- **Concrete floor** bottom plate fixing:- HD bolts M12 x 150mm minimum fixed with 50 x 50 x 3mm hot dip galvanised washers as shown in Figure 6.16 NZS 3604.
  Proprietary fixings with a minimum characteristic strength of 15kN may be used as an alternative.
- **Timber floor** bottom plate fixing:- Coach screws 12mm x 150mm minimum fixed with 50 x 50 x 3mm hot dip galvanised washer.
- End strap fixing to studs are not required for this system.

Product	System
Villaboard® Lining	VB1, VB3, VB4, VB6

Figure 1: Villaboard® Lining to timber or concrete floor without end straps



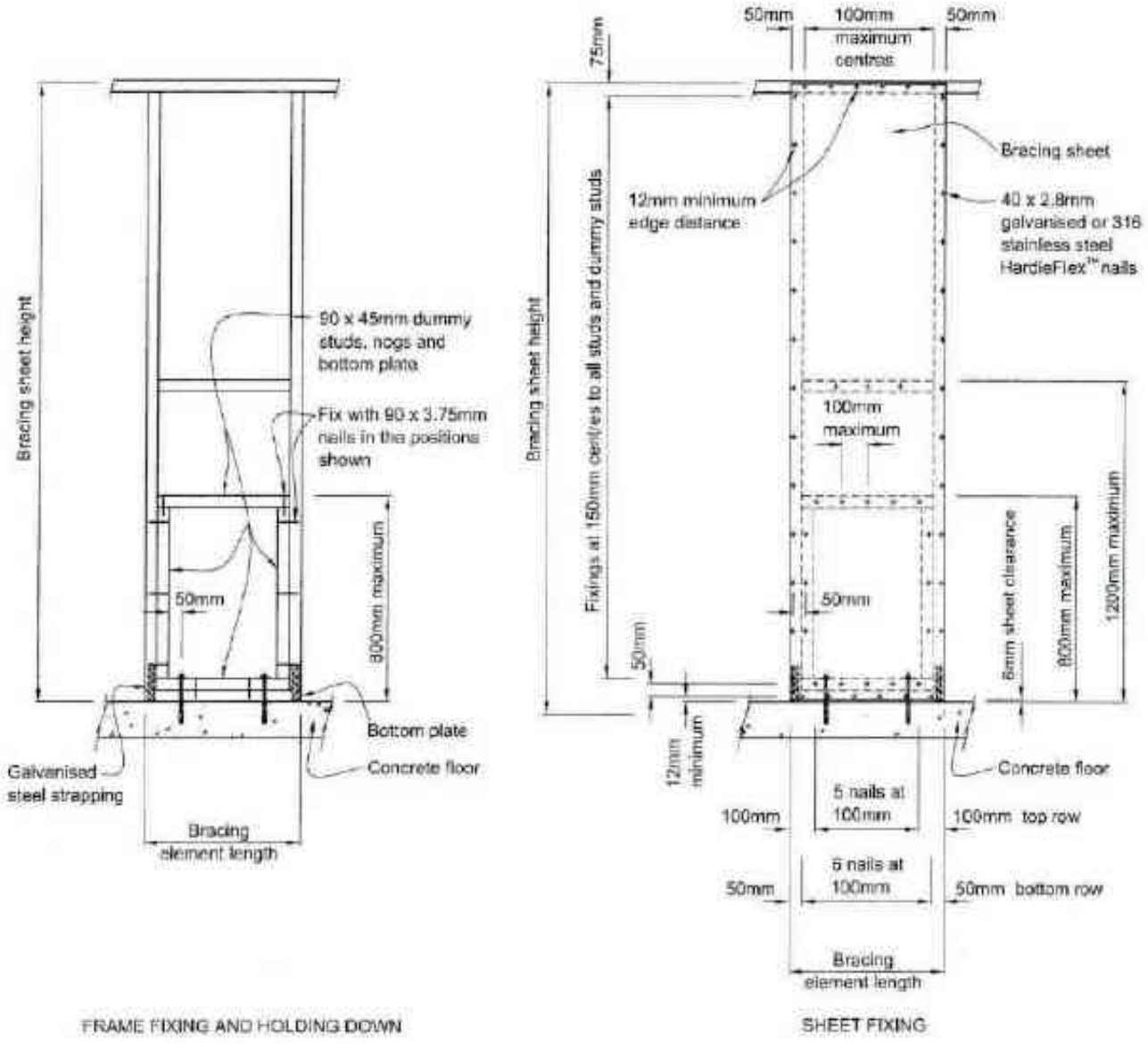
FIBRE CEMENT FIXING DETAILS

Notes for Figure 2:

- **Concrete floor** bottom plate fixing:- HD bolts M12 x 150mm minimum fixed with 50 x 50 x 3mm hot dip galvanised washers as shown in Figure 6.16 NZS 3604.
  Proprietary fixings with a minimum characteristic strength of 15kN may be used as an alternative.
- **Timber floor** bottom plate fixing:- Coach screws 12mm x 150mm minimum fixed with 50 x 50 x 3mm hot dip galvanised washer.
- Steel strap 25 x 0.9 x 400mm. Strap fixings shall be 30 x 2.5mm hot dip galvanised flat head nails. Refer Figure 22 for concrete floors and Figure 20 for timber floors.

Product	System
Villaboard® Lining	VB2, VB6, VB7

Figure 2: Villaboard® Lining to timber or concrete floor with end straps



Notes for Figure 3:

- Steel strap 25 x 0.9 x 400mm. Strap fixings shall be 30 x 2.5mm hot dip galvanised flat head nails. Refer Figure 24.
- HD bolts M12 x 200mm minimum fixed with 50 x 50 x 3mm hot dip galvanised washers as shown in Figure 6.16 NZS 3604. Proprietary fixings with a minimum characteristic strength of 15kN may be used as an alternative.
- The dummy studs are nailed to the main studs with 3 horizontal 90 x 3.75mm nails per dummy stud, with the dummy nog being nailed with 2 - 90 x 3.75mm nails to the dummy studs and the dummy bottom plate being nailed to the bottom plate with 2 - 90 x 3.75mm nails between the HD bolts.

Product	System
Villaboard® Lining	VB6

Figure 3: Villaboard® Lining to concrete floor with grid straps

Ecoply® Bracing Specification – EP1

June 2012

Single sided structural plywood brace

Specification No.	Minimum Wall Length	Lining Requirements	8.0kPa Wind	8.0kPa Earthquake
EP1	0.6 m	7mm Ecoply®, or Ecoply Barrier one side	125	130

Framing

Wall framing must comply with:

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

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

Bottom Plate Fixing

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

Lining

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

Fastening the Ecoply

Fasteners

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

Fasteners for H3.2 CCA treated Ecoply

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

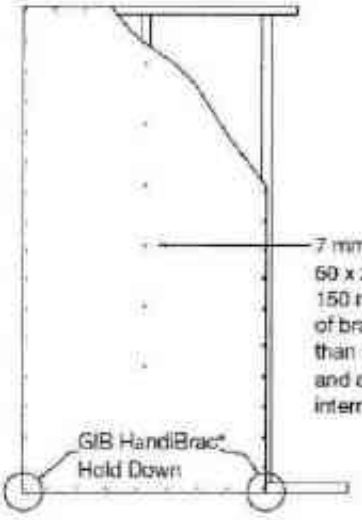
In certain circumstances stainless steel fasteners may be required. Refer to section 4 of NZS 3604:2011 for these circumstances.

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

Stainless steel fasteners must be annular grooved.

Fastening Centres

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



ECOPLY BRACING SPECIFICATION: EP1

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

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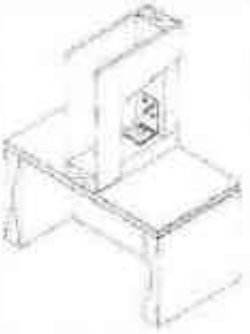
ecoply

GIB Handibrac®- Recommended Installation Method

June 2012

Developed in conjunction with MiTek™ NZ, the GIB Handibrac® has been tested for use as a hold down in all EP Bracing elements.

- The GIB Handibrac registered design provides for quick and easy installation
- The GIB Handibrac provides a flush surface for the wall linings because it is fitted inside the framing. There is no need to check in the framing as recommended with conventional straps.
- The GIB Handibrac is suitable for both new and retrofit construction
- The design also allows for installation and inspection at any stage prior to fitting internal linings

Concrete Floor		Timber Floor	
External walls	Internal walls	External walls	Internal walls
			
Position GIB Handibrac® as close as practicable to the internal edge of the bottom plate	Position GIB Handibrac® at the stud/plate junction	Position GIB Handibrac® in the centre of the perimeter joist or header	Position GIB Handibrac® in the centre of the floor joist or full depth solid block
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN		12 x 150 mm galvanised coach screw	

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

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GIB HANDIBRAC INSTALLATION METHOD

Roof Bracing Options

I) ROOF PLANE BRACE

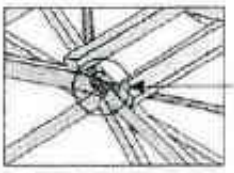
LUMBERLOK®

Each roof plane brace can be:

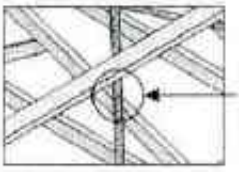
- A hip or valley rafter running continuously from ridge to the top plate in accordance with NZS 3604:2011 Clauses 10.2.1.3.2 or 10.2.1.3.3

OR

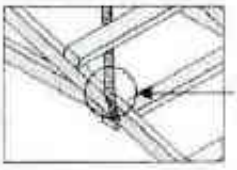
- A pair of tensioned and crossed LUMBERLOK Strip Brace running continuously from ridge to top plate installed as detailed below.



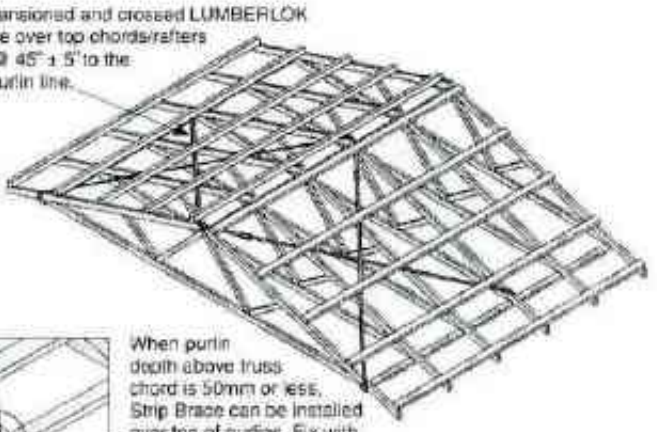
5 x 30mm x 3.15 dia. nails each end



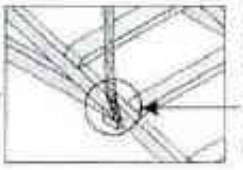
1 x 30mm x 3.15 dia. nail at crossing (after tensioning)



5 x 30mm x 3.15 dia. nails each end



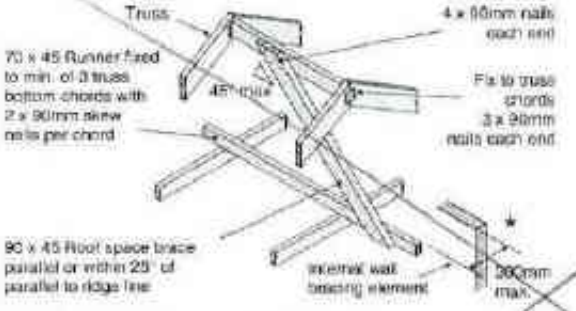
A pair of tensioned and crossed LUMBERLOK Strip Brace over top chords/rafters installed @ 45° ± 5° to the rafter or purlin line.



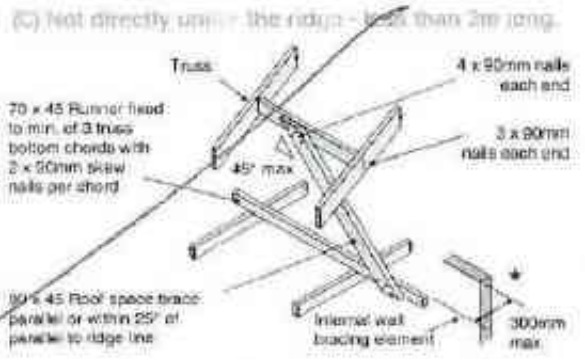
When purlin depth above truss chord is 50mm or less, Strip Brace can be installed over top of purlins. Fix with 1 x 30mm x 3.15 dia. nail at the purlin closest to the rafter/truss crossing.

II) ROOF SPACE BRACE

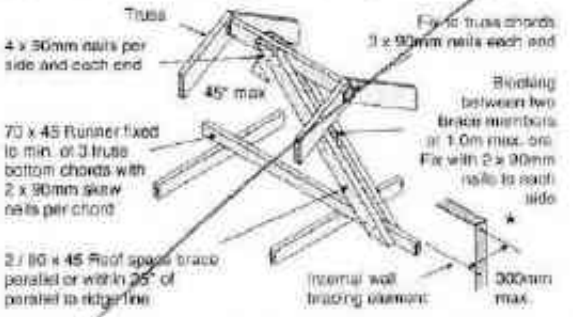
(A) Less than 2m long



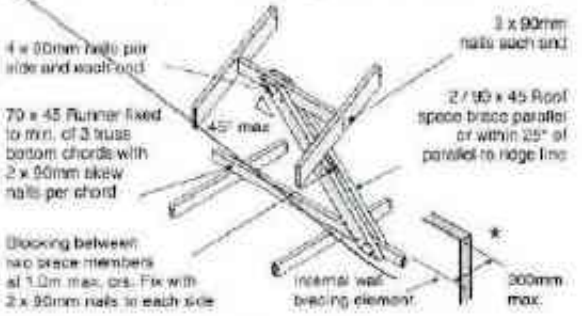
(C) Not directly under the ridge - less than 2m long



(B) More than 2m long (Max. 4.8m)



(D) Not directly under the ridge - more than 2m long



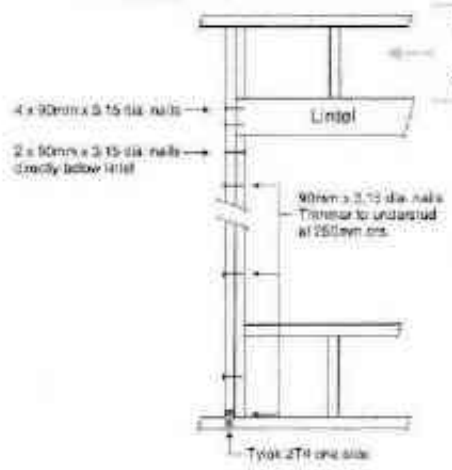
★ Not required when a ceiling diaphragm complying with Clause 13.5 of NZS 3604:2011 is used.

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LUMBERLOK®

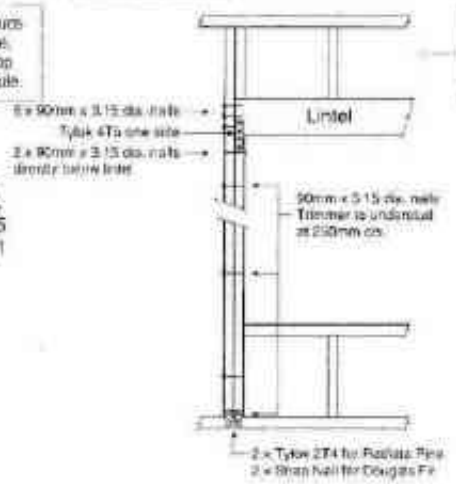
TYPE E
1.4 kN



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

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

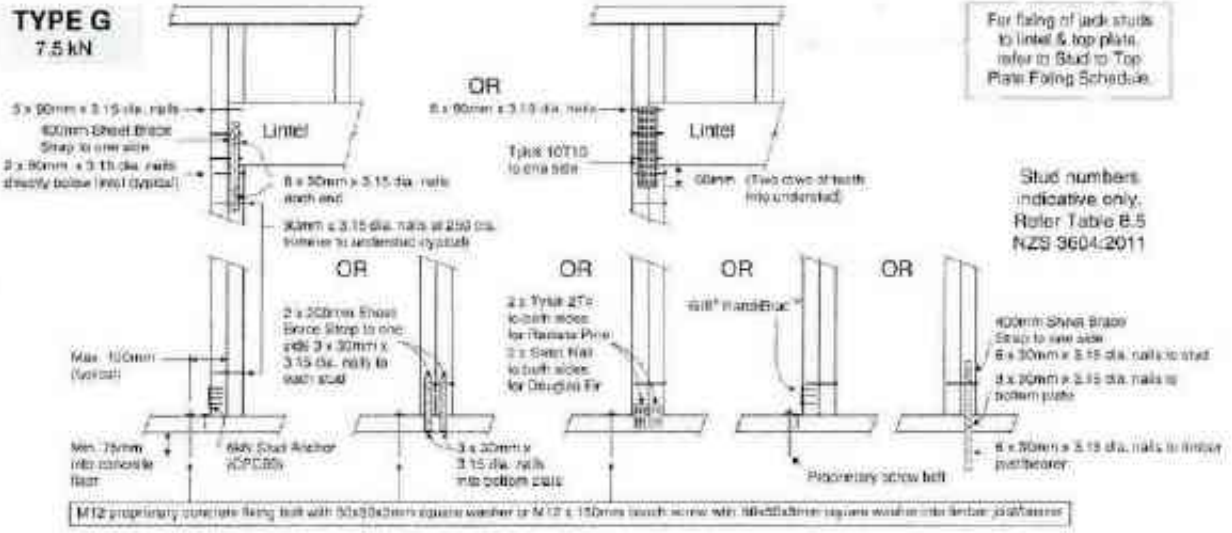
TYPE F
4.0 kN



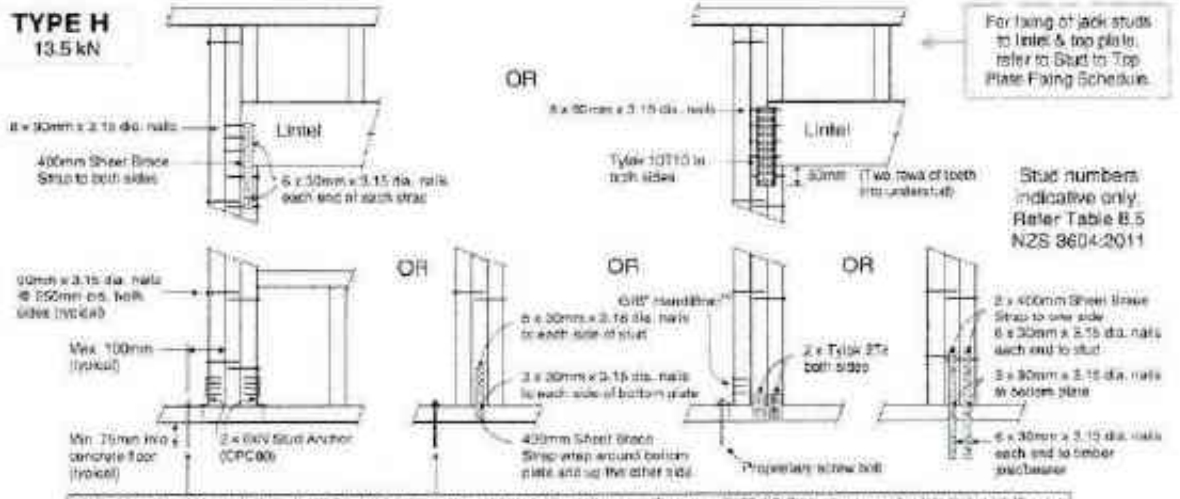
For fixing of jack studs to lintel & top plate, refer to Stud to Top Plate Fixing Schedule.

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

TYPE G
7.5 kN



TYPE H
13.5 kN



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Lintel Details

NOTES:

Any lintels supporting trusses with imposed loads outside the scope of NZS3604:2011 have been specifically designed and nominated.

Timber lintels have been selected from the GANGLAM 05/2005 Lintels, Beams, Joists & Rafters selection manual.

FLITCH beams have been selected from the GANG-NAIL FLITCH BEAM Lintels & Beams 12/2007 selection manual.

No bearing reactions from trusses on internal walls from concentrated load (CL) or uniform distributed load (UDL) on concrete slab exceed 10kN. Standard 100mm slab required.

Prewood lintels are selected from the PRO-LAM User guide selection manual 3/2007 or Waimea Sawmillers Ltd Timber Beam Span Tables using only GL8 graded products.



FTMA NEW ZEALAND

FRAME & TRUSS

Site Address
Stuart Gibson
35 Bensemann Road
Upper Moutere

Sheet Title
For Building Consent
Lintel Sizes

Date 10 Jan 2013 | Drawn Mark Tuson
Scale 1:100 | Software MiTek 2012

Job Details
Roof Pitch : 17.500 Deg
Roof Material : Galv Iron .5mm
Ceiling Material : Gib Board 12mm
Wind Zone : Very High
Roof Snow Load : 0.400 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250 kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

MiTek

Job Title
6326
Sheet
3

Stud to top plate fixing details

All fixings are to be Type B

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

AND

Plus 2x LUMBERLOK CPC40

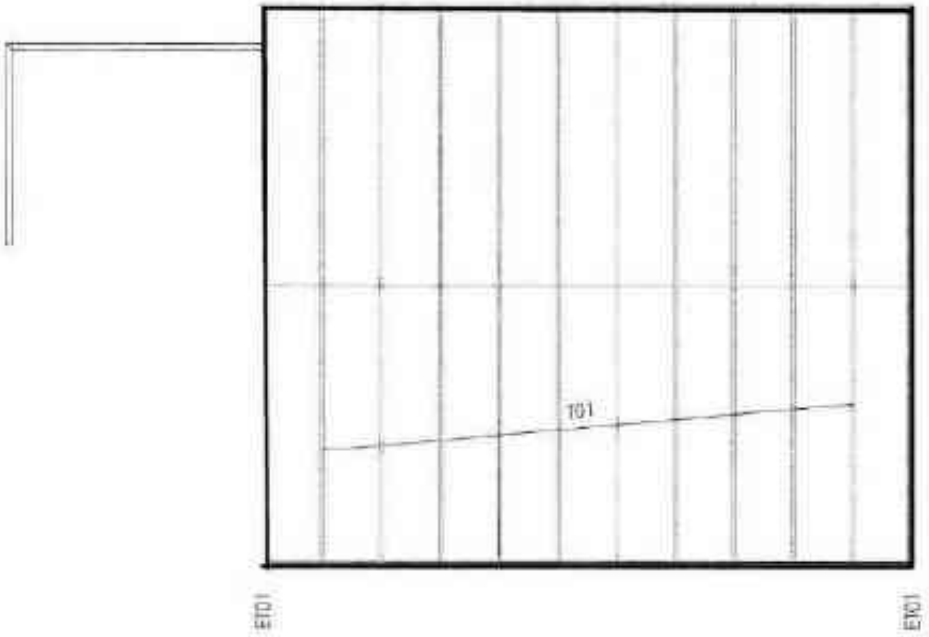
OR

Plus LUMBERLOK 5 kN Stud Anchor (CPC50)

OR

Plus LUMBERLOK Stud Strap (One face only)

Recommended for internal wall options to avoid lining issues



NOTES:

Refer to:
LUMBERLOK Wall Fixing Chart - Stud to Top Plate Fixing Schedule 09/2011

(Alternative to NZS3604:2011 Table 8.18)

FTMA NEW ZEALAND

FRAME & TRUSS

Stuart Gibson
35 Bensemann Road
Upper Moutere

For Building Consent
Stud To Top Plate Fixing

Date: 09 Jan 2013 | Drawn: Mark Tatum
Scale: 1:100 | System: MiTek 2000

Roof Pitch	: 17.500 Deg	Truss Centres	: 900 mm
Roof Material	: Galv Iron .5mm	Roof Live Load	: 0.250 kPa
Ceiling Material	: Gib Board 12mm	Floor Live Load	: kPa
Wind Zone	: Very High	Wind Speed	: 50.0 m/s
Roof Snow Load	: 0.400 kPa		

MiTek

Job No: 6326
Sheet: 4

Truss Fixings

- X - LUMBERLOK JH47x90 Joist Hanger
- Z - LUMBERLOK JH47x120 Joist Hanger
- P - LUMBERLOK JH47x190 Joist Hanger
- E - LUMBERLOK JH95x185 Joist Hanger
- O - Pair of LUMBERLOK CT200 Ceiling Ties
- H - LUMBERLOK CT400 Cyclone Tie
- B - LUMBERLOK CT600 Cyclone Tie
- M - Pair of LUMBERLOK Multi Grips
- NP - LUMBERLOK Nailon Plate
- N - LUMBERLOK N21 Diagonal Cleat
- W - Pair of LUMBERLOK CPC40 Cleats
- K - LUMBERLOK TTP 16kN Truss to Top Plate set

NOTES:

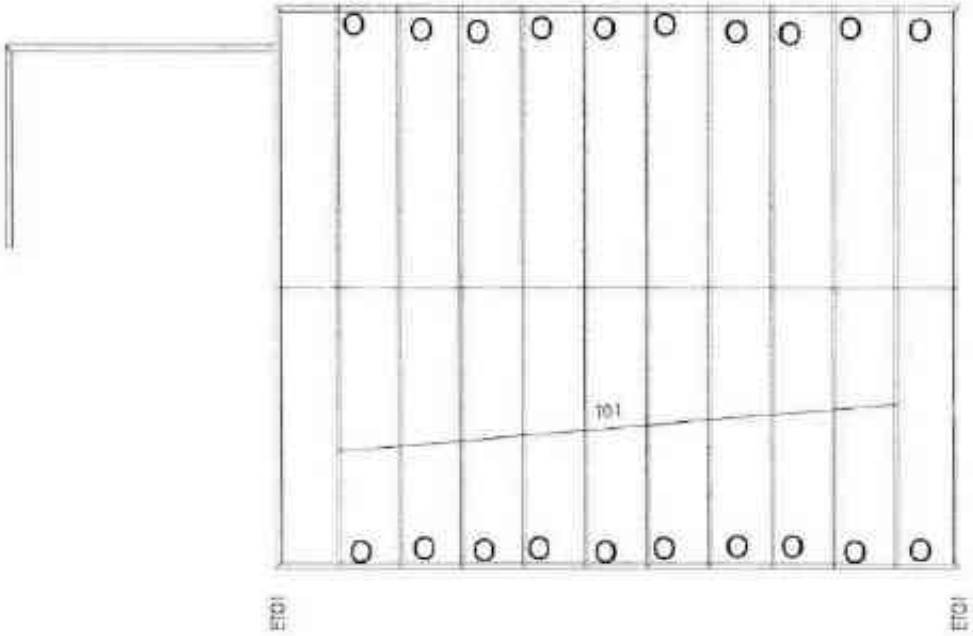
All truss to top plate fixings not labelled require a minimum of a pair of LUMBERLOK Wire Dogs. All other areas must have a minimum of a pair of 90mm skew nails.

Fix all outriggers to gable trusses with a pair of LUMBERLOK Wire Dogs

Fix all stringers with a pair of LUMBERLOK Multi Grips at every stud.

Fix planted overhang rafters to top chord of truss with a pair of 90mm nails at 300mm centres.

Refer to:
LUMBERLOK Timber Connectors Characteristic Loadings Data brochure 03/04



FTMA NEW ZEALAND

FRAME & TRUSS

Site Address:
Stuart Gibson
35 Bensemann Road
Upper Moutere

Drawn Title:
For Building Consent
Truss Fixings

Date: 18 Jan 2013 Drawn: Mark Tillson
Scale: 1:100 System: MiTek 2008

Job Details
Roof Pitch : 17.500 Deg
Roof Material : Galv Iron .5mm
Ceiling Material : Gib Board 12mm
Wind Zone : Very High
Roof Snow Load : 0.400 kPa

Truss Centres : 900 mm
Roof Live Load : 0.250kPa
Floor Live Load : kPa
Wind Speed : 50.0 m/s

MiTek

Job Title: 6326
Sheet: 5
Revision Number:

b) When fixing *flashings* to other *flashings* or to roofing use:
   i) for galvanized steel, 4 mm diameter monel metal or stainless steel rivets, where compatible as per Table 21,
   ii) for aluminium-zinc coated steel, 4 mm diameter aluminium rivets,
   iii) for aluminium, 4 mm diameter aluminium rivets.

Amend 2 Jul 2005

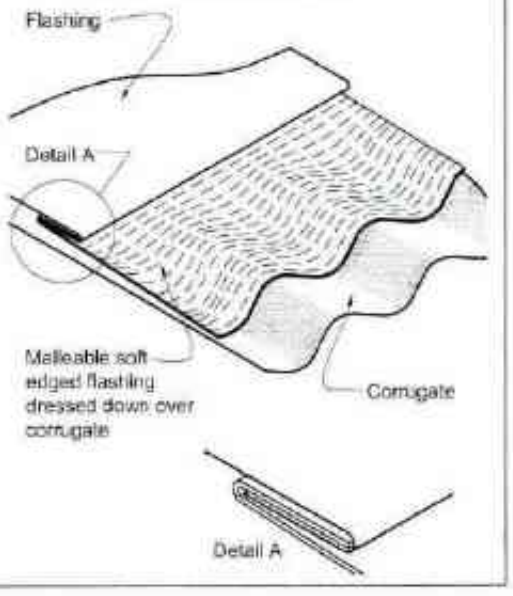
COMMENT:
The use of stainless steel fixings is not recommended by steel manufacturers for use with coated steel, in severe marine and industrial environments, as they are considered to cause deterioration.

Amend 5 Aug 2011

c) *Flashing* joins, including *expansion joints* where required, shall be in accordance with Paragraph 4.5.2 and as shown in Figure 6.

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

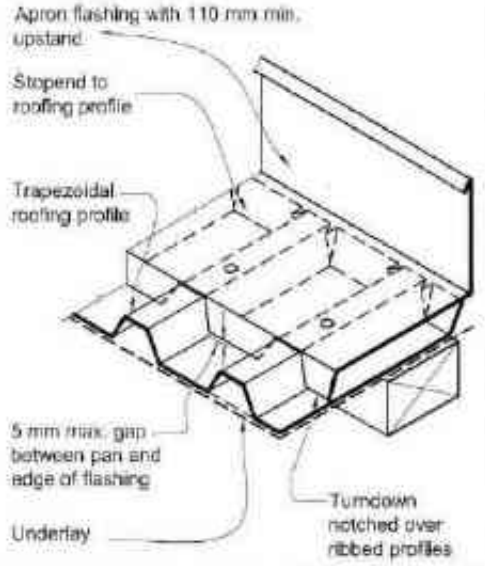
Figure 41: Soft edge flashing
Paragraphs 4.6, 8.4.12 and 8.4.11



Amend 2 Jul 2005

Amend 5 Aug 2011

Figure 42: Trapezoidal notched flashing
Paragraphs 4.6, 8.4.11 and 8.4.12



Amend 2 Jul 2005

Amend 5 Aug 2011

8.4.12 Flashing details

The *roof* shall be flashed using details shown below:

Amend 5 Aug 2011

a) Ridge to hip as shown in Figure 43,

Tasman District Council
BUILDING CONSENT AUTHORITY
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MAR 2013
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Amend 5 Aug 2011

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

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

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

Amend 5 Aug 2011

e) Ridge and hip as shown in Figure 46,

Amend 2 Jul 2005

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

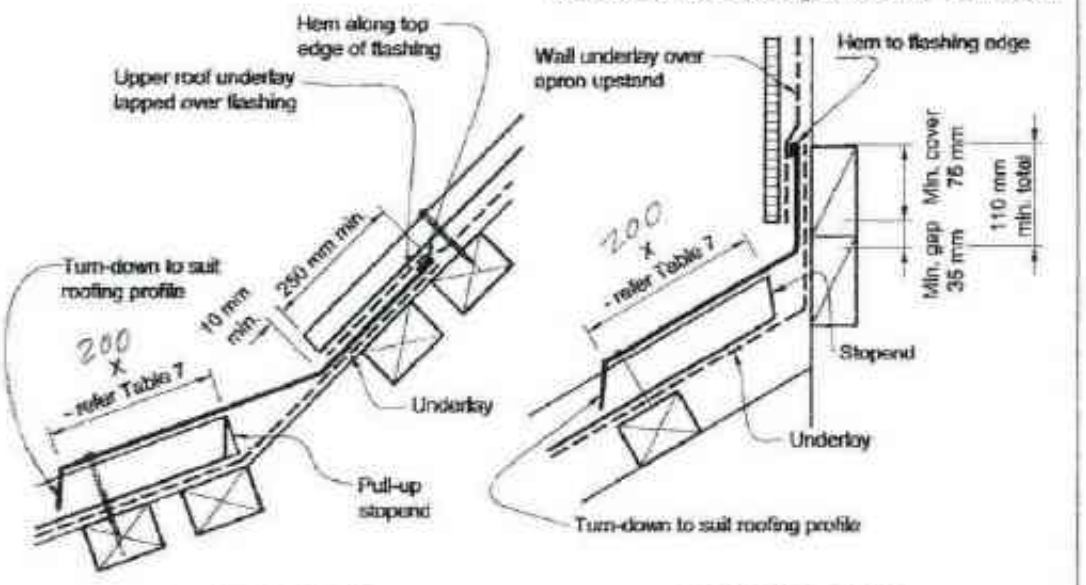
g) *Apron flashing – parallel flashing* to profile as shown in Figure 48.

Amend 5 Aug 2011

Amend 2 Jul 2005

Figure 44: Apron flashing and change in pitch for profiled metal
Paragraphs 4.5, 8.4.11, 8.4.12, Table 7

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



Amend 2 Jul 2005

Amend 5 Aug 2011

Figure 46: Ridge and hip flashings for profiled metal
Paragraphs 4.6.1.2 and 8.4.12 d)

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

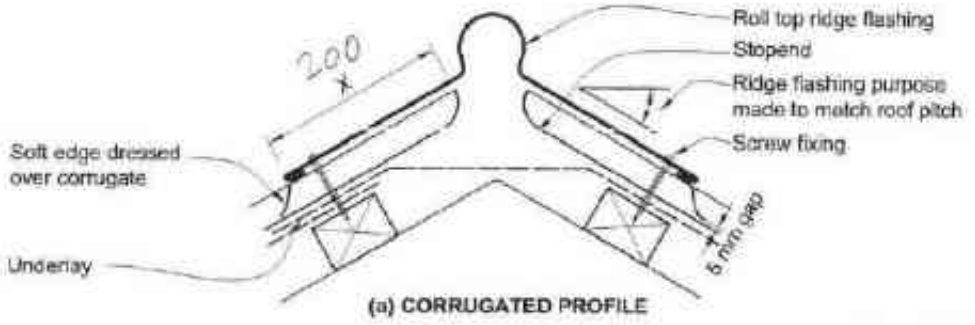


Figure 47: Barge flashings for profiled metal
Paragraphs 4.6.1.5 and 8.4.12 e)

NOTE: (1) Y = variable according to *wind zone* – refer Table 7.
(2) Z = variable according to *wind zone* – refer Table 7.

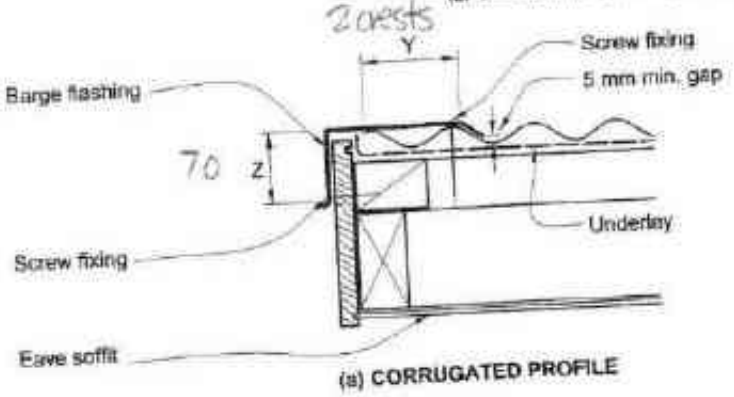
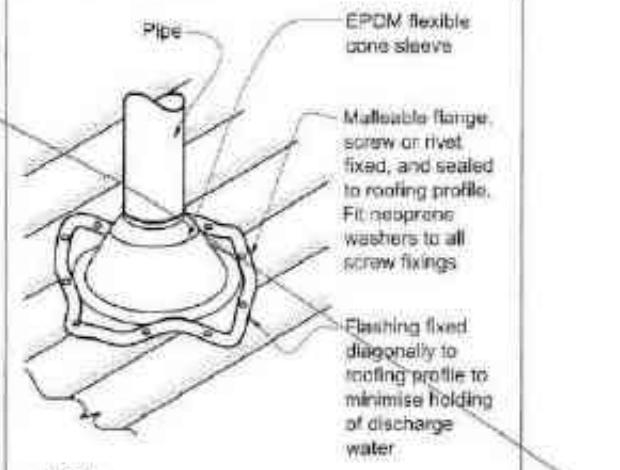


Figure 53: Flashing for small pipes
Paragraphs 8.3.10, 8.4.17, 9.6.8.5 and 9.6.9.6

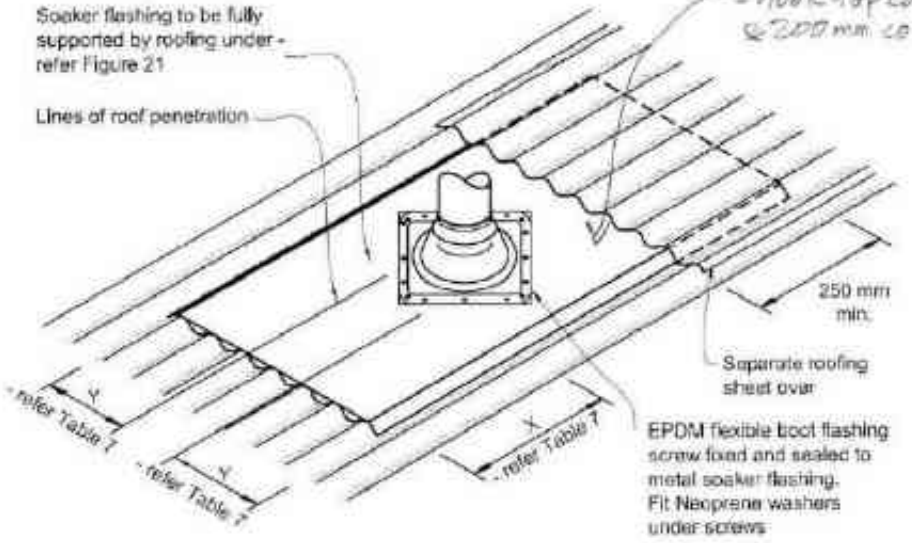


NOTE:
(1) Max. roof pitch for this flashing 45°, minimum pitch 10° if base of flange covers one or more complete troughs.
(2) For pipes up to 85 mm diameter.

Amend 5 Aug 2011

Figure 54: Soaker flashing for pipe penetrations
Paragraph 8.4.17

NOTE: (1) Suitable for pipes from 60 mm to 500 mm diameter.
(2) Suitable only for roof pitches of 10° or more.

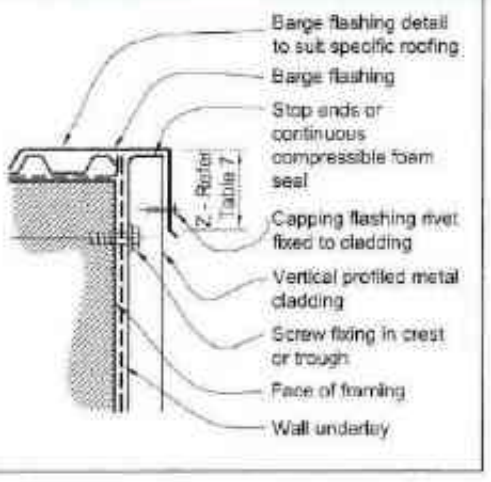


Amend 2 Jul 2005
Amend 2 Jul 2005
Amend 5 Aug 2011

9.6.8.2 Barges

Barge *flashings* shall be as shown in Figure 92.

Figure 92: Barge for vertical profiled metal
Paragraph 9.6.8.2



Amend 2 Jul 2005

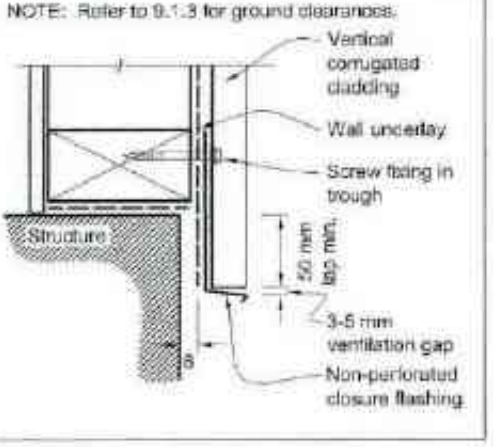
Amend 2 Jul 2005

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9.6.8.3 Bottom of cladding

The bottom edge of the *cladding* shall overlap the foundation *wall* as described in Paragraph 9.1.3 and as shown in Figure 93.

Figure 93: Bottom of cladding for vertical profiled metal
Paragraph 9.6.8.3



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9.6.8.4 Corners

Direct fixed vertical profiled metal *wall cladding* shall be over-flashed at external and internal corners as shown in Figure 94. The cover of the *flashings* shall:

a) Be dimensioned to suit the metal *wall cladding* profile,

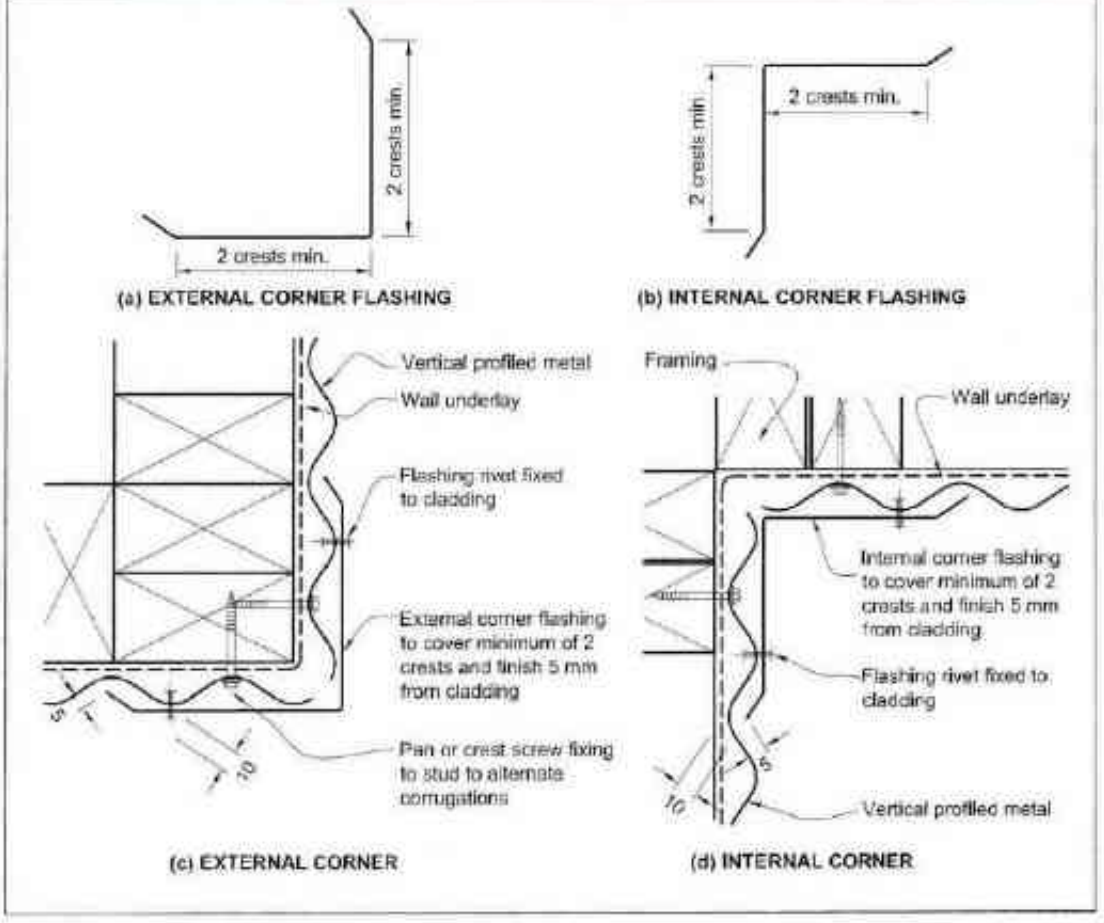
b) Cover at least two crests for corrugated and single crests for other profiles, and

c) Terminate as shown in Figure 93.

Amend 5 Aug 2011

Amend 2 Jul 2005

Figure 94: Corners for vertical profiled metal
Paragraph 9.6.8.4



Amend 5 Aug 2011

9.6.8.5 Vertical profile: penetrations

Pipe penetrations shall be as per Figure 53.

The heads of larger penetrations shall be flashed in similar fashion to Figure 69, with head *flashings* adjusted to suit the profile and other *flashings* as per window and door details in relevant paragraphs.

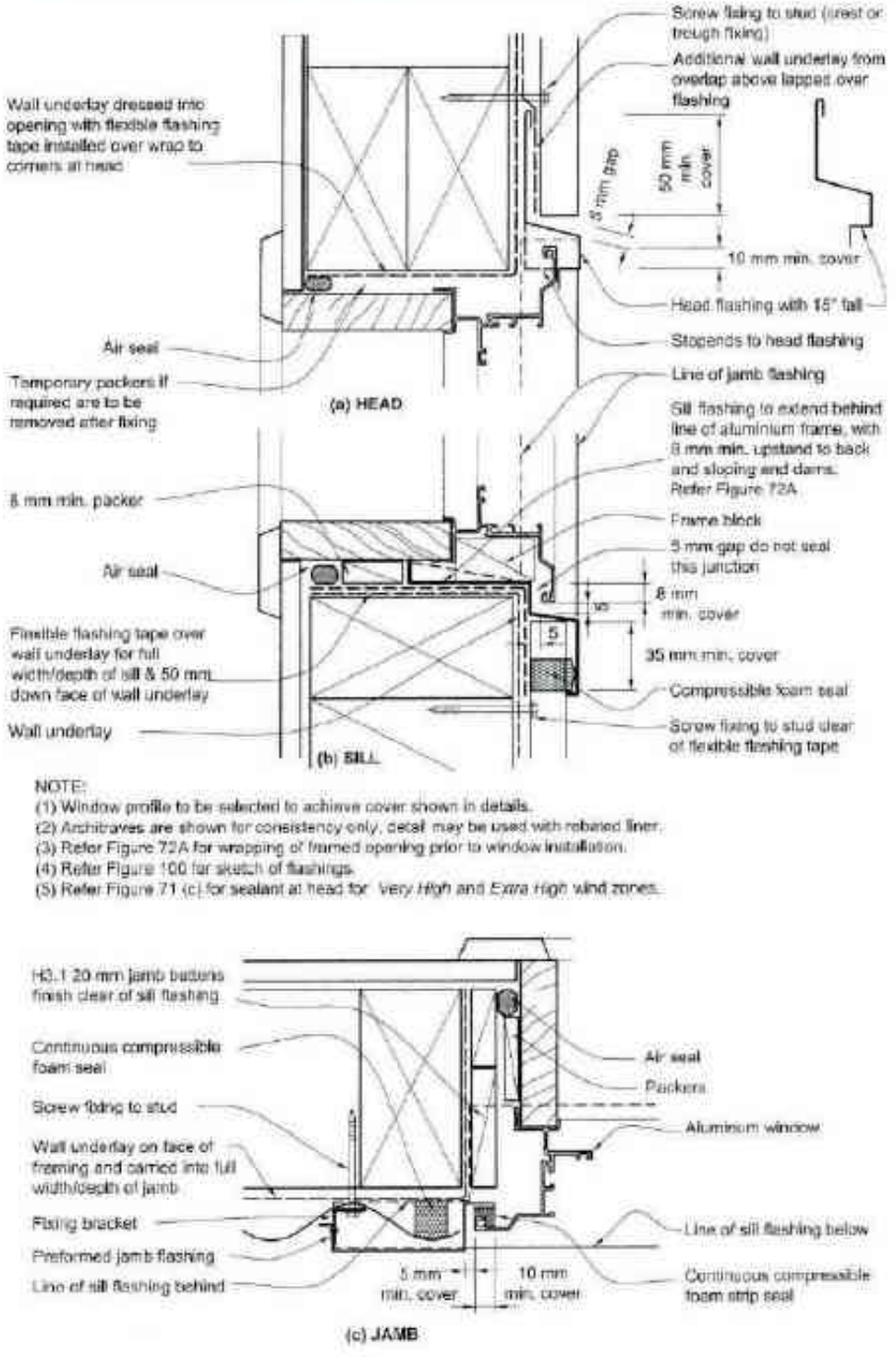
Amend 5 Aug 2011

9.6.8.6 Vertical profile: windows and doors

Amend 5 Aug 2011

Windows and doors in vertical profiled metal *claddings* shall be flashed as shown in Figure 95 and Figure 100.

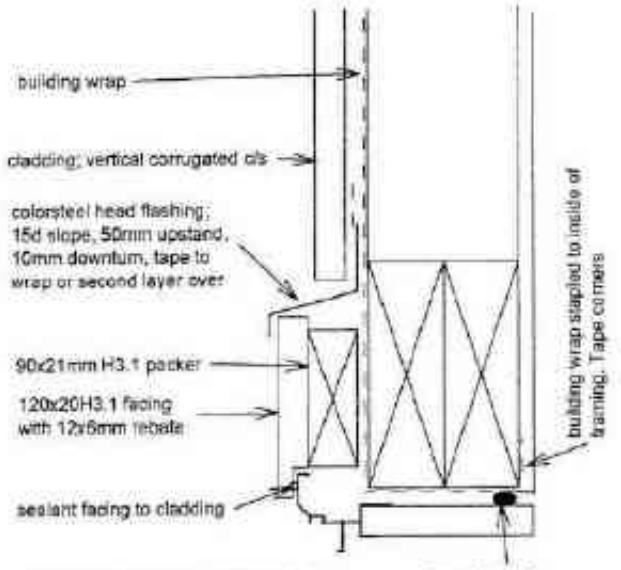
Figure 95: Windows and doors for vertical profiled metal
Paragraph 9.6.6.6



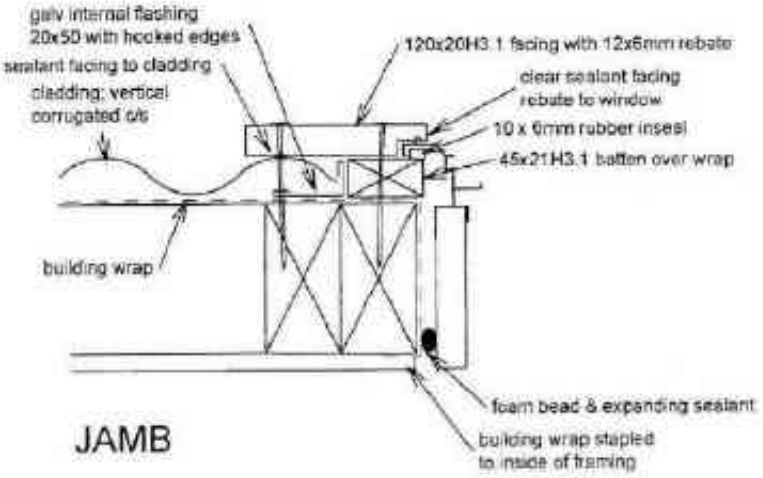
NOTE:
(1) Window profile to be selected to achieve cover shown in details.
(2) Architraves are shown for consistency only, detail may be used with rebated liner.
(3) Refer Figure 72A for wrapping of framed opening prior to window installation.
(4) Refer Figure 100 for sketch of flashings.
(5) Refer Figure 71 (c) for sealant at head for *Very High* and *Extra High* wind zones.

Amend 5 Aug 2011

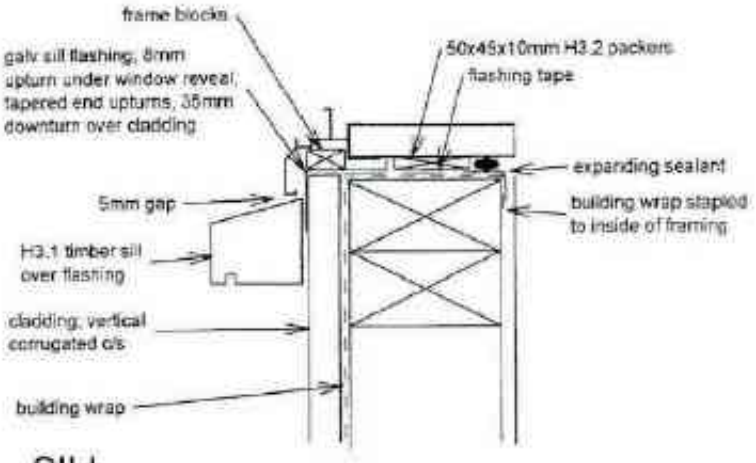
Amend 2 Jul 2005



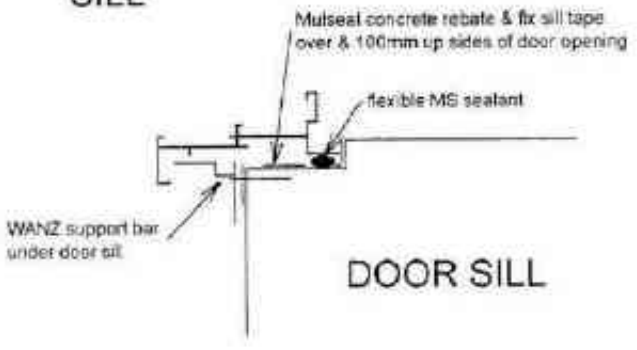
WINDOW; HEAD



JAMB



SILL



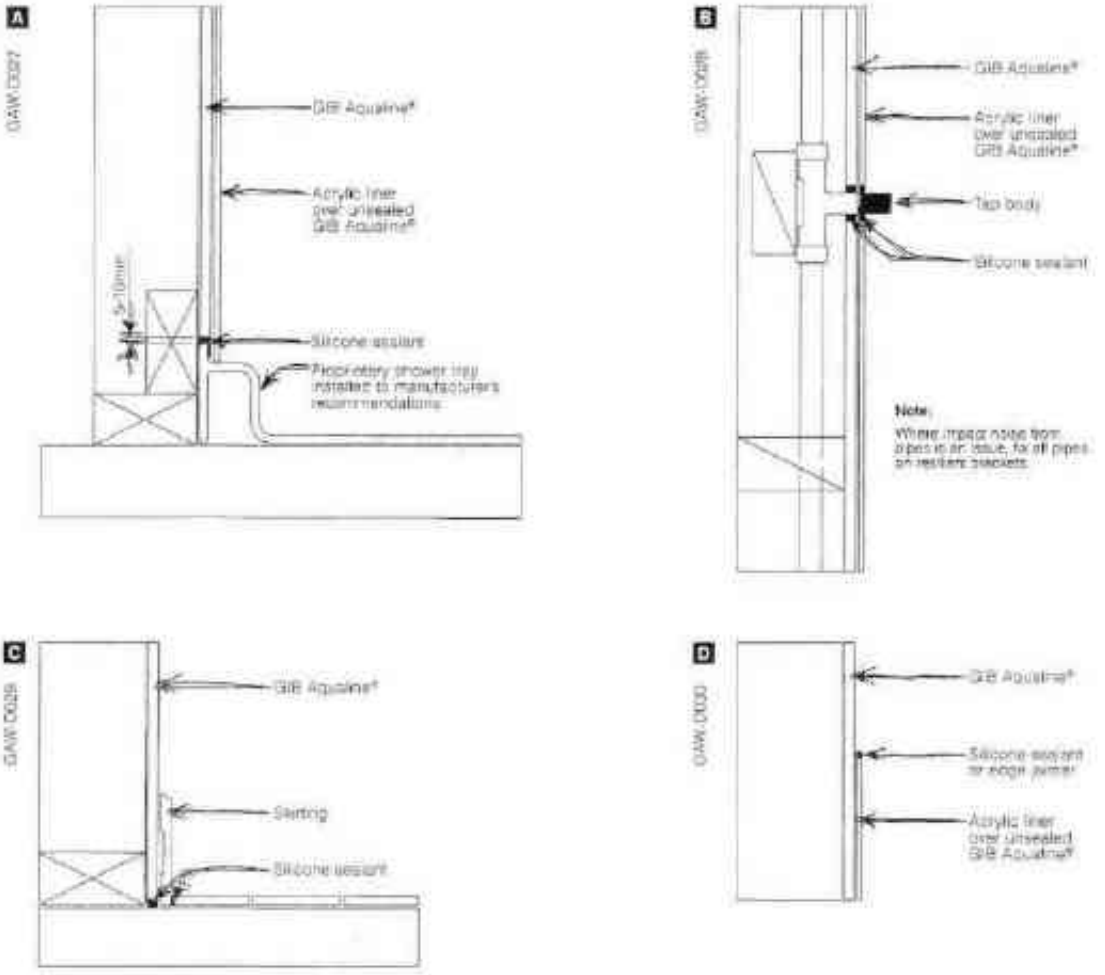
DOOR SILL

WINDOW FLASHING TO VERTICAL CORRUGATED COLORSTEEL (WITH FACINGS)

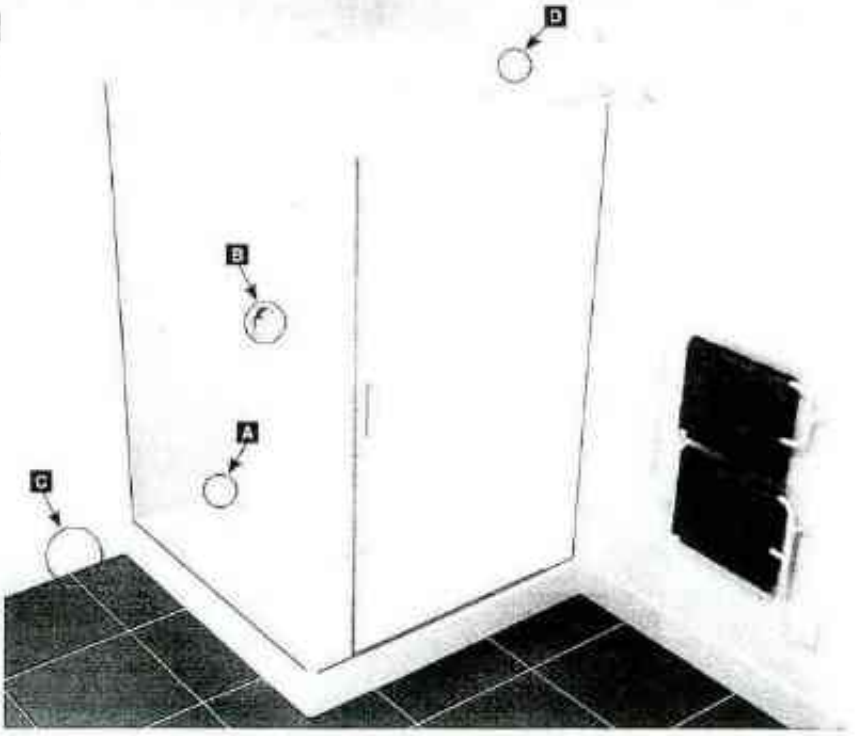
same principles apply for villaboard wall linings

Shower – Acrylic Liner and Base

MARCH 2007



NOTES: Shower liner fixed to Aqualine GIB with solvent based adhesive. Do NOT seal or paint Aqualine behind shower liner
Liner to be fixed in accordance to manufactures instructions



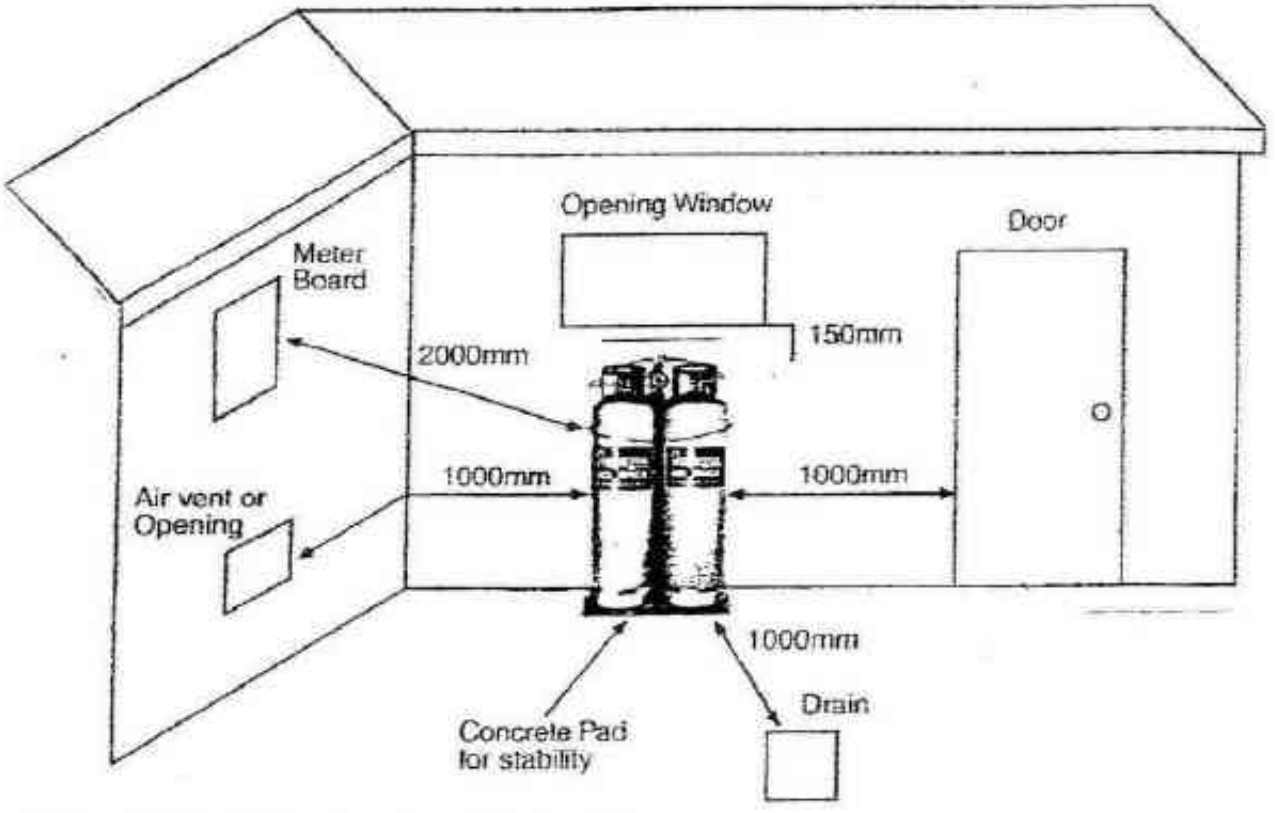
WATER HEATER : 500mm from any corner, door or opening window or meter box. 500mm below soffit & 1500mm above ground

GAS HOB : 150mm min from gas element to tiled or glass splashback on wall to 200mm high min & with 750mm clearance above (to range-hood)

Positioning of a Rockgas HomePack

Volumes above 10kg must be stored outside:-

- 1 metre from Opening Door, Drains & Air Vents
- 2 metres from Electrical meter boards & sources of ignition.
- 150mm below an opening window



Some vents and drains can be sealed. Please ask your installer

Be mindful when positioning your cylinder station of the Safety (OSH) requirements for delivery of LPG cylinders.

ie. Steep slippery banks or large numbers of stairs. Or any other difficult locations that would endanger the health and wellbeing of customers, the general public, or our delivery staff if they were to slip.

Difficult deliveries may incur higher gas pricing because of slower delivery times or two people required to make the delivery.

In some cases it is possible to place cylinders on the street frontage and run gas pipework from there to the building to avoid these difficulties.

Rockgas
delivering the goods

MiTek New Zealand Limited

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

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

www.miteknz.co.nz

MiTek 20/20 Engineering 4.6.6.167

Printed: 12:24:12 19 Jan 2013

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

ISSUED BY: **MiTek New Zealand Limited**

TO: **Building ConneXion Ltd t/a ITM Building Centres**

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 **6326** 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: 19 January 2013**

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

Job: 0328
Description:
Building Consent No:

Client: Harry Thomson
Phone:

Site: Stuart Gibson
36 Bensemann Road
Upper Moutere

Phone:

MiTek New Zealand Limited

Printed: 12:21:10 18 Jan 2013

MITEK FABRICATOR DESIGN STATEMENT

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

MiTek 20/20® TRUSS DESIGN DATA

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

Job Details

Roof Truss

Timber Group:	DDF1.2	Importance Level:	2	Design Working Life:	50 years
Roof		Pitch:	17.500 deg	Nominal Overhang:	0 mm
Material:	Galv Iron .5mm	**Ceiling**		**Wind**	
Dead Load:	0.210 kPa	Material:	Gib Board 12mm	Area:	Very High (50.0 m/s)
Restraints:	900 mm centres	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Live Load:	Qur = 0.250 kPa	Restraints:	600 mm centres	**Snow**	
	Qc = 1.100 kN	Live Load:	Qc = 1.400 kN	Location:	Nelson (N3) at 220 m
				Open Ground Load:	0.300 kPa
				Basic Roof Load:	0.400 kPa

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

MiTek® Truss List

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

Tr	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
T01	10	8400	17.500	896
ET01	2	8400	17.500	896

Total quantity : 12

The computer design input has been carried out by:

Signed: Mark Tolson

Date: 19 January 2013

Name of Detailer: Mark Tolson

Qualifications and Title: Detailer

On behalf of: Building ConneXion Ltd t/a ITM Building Centres

NELSON

designIT

CarterHoltHarvey
Woodproducts New Zealand

Design Certificate – Technical basis for structural design methodology contained in designIT for houses - New Zealand

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

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

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

References:

NZS 3603:1993 Timber Structures Standard.
NZS 3604:2011 Timber-framed buildings.
AS 1720.1 – 2010 Timber structures. Part 1: Design methods.
AS 1684.1 – 1999 Residential timber framed construction. Part 1: Design criteria.
AS/NZS 1170.0:2002 Structural design actions, Parts 0 and 1.
AS/NZS 1170.2:2011 Structural design actions, Part 2: Wind actions.
AS/NZS 1170.3:2003 Structural design actions, Part 3: Snow and ice actions.

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

Version date: 22 August 2011

For further information or advice please contact: Carter Holt Harvey Woodproducts New Zealand
173 Captain Springs Road, Onehunga, Auckland
Telephone 0800 808 131
Facsimile 0800 808 132
Email: designit@chhwoodproducts.co.nz

Specifier details:

Specifier:	Kerry	
Business name:		
Address:		
Email:		
Phone:	**Mobile:**	**Facsimile:**

Project & Site details:

Project:	new cottage	**Ref. no.:**
At (address):	35 Bensemann Rd Upper Moutere	
For (owner/s):	S Gibson	
Wind zone:	Very high	
Snow loading	Snow region: N0, snow loading not applicable	

MEMBER DESIGN DETAILS

Member 1

1) Member code and description R1 - Common rafters (carport)

2) Date prepared 4/01/2013

3) Serviceability criteria AS 1720.1-2010 and AS 1684.1-1999

4) Design inputs

Span 3.9 m - single
Maximum rafter spacing 850 mm

Roof mass	20 kg/m²

5) Member specification

Size, stress grade/product	Use 150 x 45 hySPAN
Material type	Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit[3] on average deflection[2]	Estimated average deflection[2]	Rigidity ratio[4]
Long term load - $G+\Psi_L Q$	13.0 mm	7.6 mm (long term)	$\frac{13.0}{7.6} = 1.70$
Wind load - W_s*	26.0 mm	16.4 mm	$\frac{26.0}{16.4} = 1.58$

*Critical serviceability load case

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

7) Reactions

Load case	k_1[1]	Limit states design reaction[2,3] End[4] kN
1.35G	0.60	-0.6
1.2G + 1.5Q	0.60	-2.2
$1.2G + W_U + \Psi_c Q$	1.00	-2.0
$0.9G + W_U$	1.00	2.5

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

8) Installation requirements Minimum bearing - end supports. 30 mm.

Notes for interpretation of serviceability data

1. "average deflection" is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS/NZS 1170, AS 1684.1 and AS 1720. Deflections calculated using this methodology cannot therefore be usefully compared with deflections calculated using other methods, eg GLTAA design methodology.

2. Deflection is the flexural response to load – 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

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

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

3. The limits referred are those specified in AS 1684.1 for the stated load case.

4. 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements of AS 1684.1

Notes for interpretation of reaction data

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29 Athol Street,
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The Glen,
Nelson 7071
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(M) 027 476 8002

17 December 2012

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: Design Report for On-Site Wastewater Disposal – Gibson, 135 Blackbird Valley Road, Neudorf, Lot 1 DP 352842.

Rounce Project Solutions Ltd has been engaged by Stuart Gibson to design and detail a new on-site wastewater management treatment system for a proposed new 2 bedroom Cottage at 135 Blackbird Valley Road, Neudorf.

This property falls outside of TDC designated Wastewater Management Area and Special Domestic Wastewater Disposal Areas and discharging of wastewater to land is a permitted activity governed by TRMP rule 36.1.2.4.

Tasman District Council
BUILDING CONSENT AUTHORITY
APPROVED
- 7 MAR 2013
BUILDING CONSENT

1.0 Wastewater Investigation

Investigation involved

1. Site visit dated 11/11/12.
2. Rates Public Enquiry search.
3. Review of Tasman Resource Management Plan (TRMP) rules and regulations.
4. Review of TDC Guidelines for new on-site wastewater management systems.
5. Review of TP 58 On-site Wastewater Design and Management Manual
6. Review of AS/ZS 1547:2000.

The site investigation consisted of:

1. Confirmation of the client's needs in a new on-site wastewater system.
2. A walkover inspection of the site to assess potential irrigation areas for on-site disposal system, proximity of neighbouring houses, waterways and location of potential environmental factors that may influence the system design.
3. An assessment of the soil category by digging one test hole within the proposed land application area.

2.0 Site and Soil Assessment

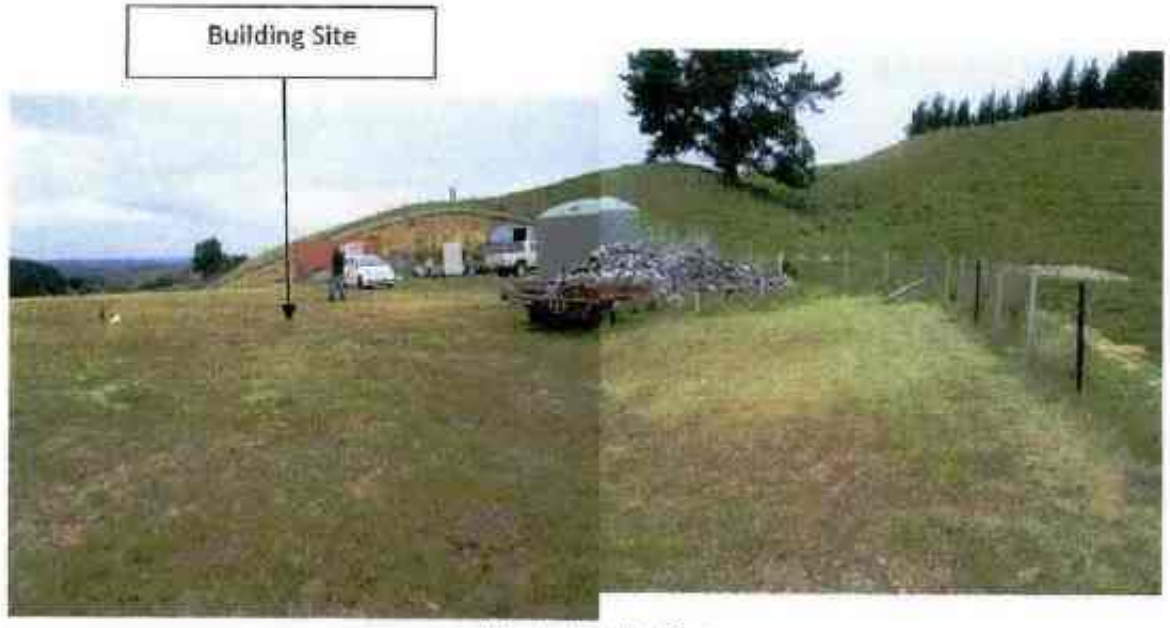
2.1 Location

Property Owner	Stuart Gibson
Legal Description	Lot 1 DP 352842
Valuation Number	1936021402
Certificate of Title	216511
Property Address	135 Blackbird Valley Road, Neudorf
Property Size	4.9049hectares
Relevant TRMP rules	Rule 36.1.2.4 Discharge of Domestic Wastewater
Water Supply	Roof Supply

2.2 Topography/Site Exposure. (See attached RPS Site Plan 1 dated 26/09/2012)

The property is a 4.9049 hectare parcel of land located at the far end of Blackbird Valley Road, 2.78km from the turn off from Neudorf Road. Access is off the end of Bensemann Road where a gravel access track (840m long) leads you over undulating land to the start of the parcel of land. There the access track rises a further 340m following a ridgeline to the building site benched into the hill knoll, giving good views down over the Blackbird Valley area.

Plans being prepared by Kerry Thomson on behalf of the owner show a proposed new 2 bedroom Cottage is to be built to the south and west of Lot.



View Looking North East

In general, flat land exists around the house site with the surrounding grazing paddock land sloping down and away from the house site at gradients varying from 12° to 27°. The land form pattern is best described as moderately to steeply inclined, rolling hills. Drainage patterns are influenced by the landform shape and as can been seen on the Google Image below slopes are generally simple (slope in one direction) with all runoff leading

to the creek situated at the base and west side of the Lot. As a result of the general simple slope pattern, water runoff will be via sheet flow or directed into gully lines depending where one is situated on the Lot.



No sign of slope instability was observed and there are no other existing houses in the same catchment, water bores, ponds or water features that could be affected by the new wastewater system.

Options for the Land Application Areas (LAA) were investigated with relation to house position, house drains and taking note of surrounding ground slopes, and the moderately sloping land west of and clear of the Cottage position has been chosen for the LAA. This slope is predominately north west to west facing, but well exposed to wind flows and sun that will enhance transpiration rates and assist the long term hydraulic capacity treatment of the soils.



View Looking South

7 MAR 2013
BUILDING CONSENT

2.3 Soil Investigation

One test hole was dug within the proposed effluent disposal field to obtain a representative understanding of the existing soil profile (see Site Plan 1 dated 11/11/12 for TP location, and soil profile at back of this report).





2.4 Soil Category

Soil Category AS/NZS 1547:2000

Site Test	TP1
0 – 110mm	3
110 - 900mm+	4

Different category soils were discovered in the test pit ranging from Category 3 to Category 4. The proposed wastewater design will be to discharge the domestic waste to the Category 4 soils at 450mm depth.

In accordance with AS/NZS 1547 a design DLR of **10mm/m²/day** for Soakage Bed/Trench will be adopted

3.0 Wastewater Flow Design

The new wastewater system is to treat wastewater being generated from the proposed 2 bedroom Cottage.

A precautionary approach has been adopted on the basis of using standard plumbing fixtures.

Source	Potential Occupancy (AS/NZS 1547 Table 4.3A1)[6]	Potential Waste/person (AS/NZS 1547 Appendix 4.2D[6]	Design DFA
2 Bedroom House	4	140L/p/d	**560L/day**

4.0 Treatment System

The septic tank minimum size in accordance with TDC Guidelines for new on-site wastewater management systems is **4500L**[4] and is to contain a solids filter retaining solids down to 3mm to reduce the BOD and Suspended Solids content of the effluent. This allows for a 24-hour settling volume and 2000L scum/sludge storage capacity. It is recommended that an Alpha Precast 5000L (4620L working capacity) with solids filter be installed.

The Disposal system shall be installed by an experience wastewater installer and registered drainlayer.

The septic tank shall be evenly seated on a level layer of sand or pea metal 50 – 100mm thick on firm bearing original ground. Backfill shall be site material free of stones larger than 100mm and only lightly tampered evenly around the tank. Soil cover over the tank shall not exceed that specified by the manufacturer.

Vehicle loading of materials storage shall not occur at the tank or within 2.0m of the tank, unless the tank has been specifically designed for surcharge loading.

Tanks shall be filled with water immediately after installation, or desludging, to prevent floatation. Tanks likely to be empty in service, installed where high ground water is likely, shall be fitted with anti floatation lugs.

All pipe connections, manhole risers, lids etc shall be sealed to prevent entry of stormwater or groundwater.

The use of garbage grinders is not recommended for use with septic tanks treatment units. Both the current NZS 4610 and AS/NZS 1547 note that these appliances are unsuited to use with septic tank systems and the standards do not account for their use in the design of on-site wastewater disposal systems.

5.0 Design of Land Application Area

Aim - the land application area should be of sufficient size to assimilate the volume and character of wastewater effluent discharged to it from the treatment unit and the wastewater flow should be distributed evenly over the land application area.

LAA area = Design Daily Flow Allowance (DFA)/Daily Loading Rate x W (AS/NZS 1547:2000 P118)

Minimum requirements are:

Soil Category	Q (wastewater loading)	DLR	LAA Size	Field Dimensions (Soakage Trenches)
4	560L	10mm/day	56m²	4 x 20m L x 0.7mW 4 x 100mm uPVC pipe space 1.7m apart, 20m L

The LAA is to be positioned as shown on the attached RPS Plan 1 dated 19/11/12 and detailed to RPS Plan 2 and meets minimum separation distances listed in the TDC Guidelines for new on-site wastewater management systems[4]:

When installing the new LAA:

i. To provide an even flow to all lines install a 4 way 'Boss Junction' (or similar) at the end of the delivery pipe. The Boss Junction is to be fitted with a 100mm riser tube and screw on lid to give access to the splitter for effluent sampling.

ii. To ensure even distribution of effluent, the 100mm uPVC pipelines are to be laid level in the trench and minimum 6mm slots at 250mm centres are to be cut to ⅓ depth of the pipe. Remove all swarf from pipes.
iii. The pipes shall be returned to surface at the start of the LAA using a 'Y' junction, suitable pipe lengths and 45º bend pipe fittings as shown on RPS plan 2, to allow future maintenance flushing.
iv. The base of the soakage trench shall be flat and level. Any smeared surfaces shall be scratched after excavation. The finished surface of the soakage bed shall be sloped to shed rain and grass established.
v. Place the 100mm uPVC pipelines on a 50mm layer of AP20 drainage aggregate using peametal locally under each pipe to provide support and assist pipe levelling.

Construction requirements

The following excavation technique shall be followed to minimise the risk of damage to the soil

a. Plan to excavate only when the weather is fine.
b. Avoid excavation when the soil has moisture content above plastic limit, tested by seeing if the soil forms a 'wire' when rolled between the palms.
c. If construction cannot be delayed until weather becomes fine, smeared soil surfaces shall be raked to reinstate a more natural soil surface, taking care to use fine tines and only at the surface.
d. When excavating by machine, fit the bucket with 'raker teeth' and excavate in small 'bites' to minimise compaction; and
e. Avoid compaction by keeping people off the finished trench floor.
f. Ensure the base is flat and level.
g. Ensure the pipe inverts are level over the full length of the trench. **Confirmation that even distribution occurs shall be achieved by filling the pipes with water and observing even distribution from pipe slots. If uneven flow occurs, the pipes level shall be adjusted or new slotted pipe installed, until even distribution is achieved.**
h. Cover the drainage aggregate with filter cloth prior to backfilling with previously excavated material.
i. The finished surface of each Soakage Trench shall be sloped to shed rain and grass established.

No buildings shall be constructed and no deep rooting vegetation such as trees shall be planted on the primary and reserve land application areas (LAA). Stock shall be excluded from all LAA areas.

A reserve LAA (56m²) nominated at the location shown on the attached Site Plan 1 dated 19/11/12 shall remain undeveloped, for expansion of the soakage area, if required.

6.0 Construction Certification

To confirm that the system has been constructed in accordance with the plans and specifications the following inspections will take place:

(i) Inspect and measure the completed LAA including boundary offsets, depth of pipes.
(ii) Inspect delivery pipeline from the treatment system to the LAA including connections.
(iii) Inspect that the LAA receiving soils are as per design.
(iv) Inspect the LAA 100mm pipes to ensure correct length, level and sight filter cloth.

A certification report will be supplied to the TDC as required under the TDC Guidelines for on-site wastewater management systems[4] Cl 5.1.

7.0 Maintenance

For longevity of the on-site wastewater disposal system the following maintenance system should be followed regarding the land application disposal field.

1. The effluent filter is to be checked and cleaned every 3 months as per the manufacturer's instructions every 3 months.
2. No buildings shall be constructed on, no deep rooting vegetation such as trees shall be planted on and stock and vehicular traffic should be excluded from the primary LAA (and secondary LAA when used).

3. The septic tank should be serviced annually including the assessment of sludge and scum levels, and checked for blockages of the outlet and inlet pipes. The contents of the septic tank should be pumped out on average every 3 years or when scum and sludge occupy 2/3 of the volume of the tank.
4. Check for wet spots at the soakage bed area indicating ponding of effluent.

Prohibited Discharges to the wastewater system:

a) Oil, grease, fats (e.g. from a deep fryer)
b) Petrol, machinery oil
c) Household/garden chemical wastes (e.g. solvents, paints, photographic chemicals)
d) Disposable nappies, tampons, condoms etc.
e) Stormwater drainage
f) Garbage grinder waste

8.0 Compliance with TRMP[3] Clause 36.1.2.4

Compliance with TRMP rule 36.1.2.4 with regard to the new effluent disposal field

(a) Any discharge first commencing after 19 September 1998 is not in any Special Domestic Wastewater Disposal Area.

- **Complies**

(b) Any discharge first commencing after 20 December 2003 is not in any Special Domestic Wastewater Disposal Area.

- **Complies**

(c) The volume of effluent discharged is not more than a weekly average flow of 2000L/day.

- **Complies** – The weekly average flows are 560L/day

(d) There is no discharge or run-off into surface water

- **Complies** – All discharge is via soakage trenches in Category 4 soils located at least 250mm below ground.

(e) The disposal field is located not less than 20 metres from any surface water body; or coastal marine area, 20 metres of any bore for domestic water supply; 1.5 metres of any adjoining property

- **Complies** – the proposed land application area meets all the above requirements (85.5m to creek).

(f)) The design and operation of the system must result in the depth of unsaturated soil between the effluent disposal field and the average winter level of groundwater or of the basement rock being no less than 500mm or sufficient to ensure that the discharge does not result in any bacterial contamination of groundwater beyond the property boundary.

- **Likely Compliance** – no water table at 900mm below ground.

(g) There is no discharge of effluent from the disposal field to the ground surface.

- **Complies** - the LAA 100mm uPVC pipe discharge lines will be placed a minimum of 250mm below ground.

(h) The septic tank must be regularly desludged so that the liquid volume is maintained at not less than 1/3 of the tank volume

- **Complies** – see section 7.0 Maintenance point 3.

(i) The discharge does not create an offensive or objectionable odour discernible beyond the boundary.

- **Complies** – effluent treatment through the septic tank and disposal field should not create an odour.

(j) An access point to allow sampling of the effluent being discharged to the disposal field must be provided with any on-site wastewater disposal system installed after 19 September 1998.

- **Complies** – a sampling point has been allowed for at the 4 way Boss Junction.

(k) The quality of the effluent being discharged into the disposal field does not exceed the following standards: BOD_5 – 150mg/L and TSS – 150mg/L.

- **Likely Complies** – the required 4500L septic tank + solids filter meets the TDC Guidelines for new on-site wastewater systems for achieving these primary quality standards.

9.0 Summary

The proposed system is able to satisfy all of the requirements of rule 36.1.2.4.

The proposed new system includes the following:

1. A new Improved Septic tank of at least 4500L capacity and fitted with Zabel or Biotube effluent solids filter.
2. Connection of all waste (grey water and black water) into the new tank.
3. A 100mm dia uPVC delivery pipe to in-ground soakage trenches.
4. A 4 way 'Boss Junction' with 40mm outlets to provide even flow to all lines. Boss Junction to be fitted with a 100mm riser tube and screw on lid to give access to the splitter and provide access to take an effluent sample.
5. A minimum of 4 lines x 20m long in-ground 100mm dia uPVC disposal lines spaced at 1.7m centres, set level within 20 -40mm drainage metal to attain uniform effluent spread. Each 100mm line to have minimum 6mm slots at 250 centres cut to ½ pipe depth.
6. A reserve effluent disposal field (suitable for up to 56m² soakage bed) has been provided should the primary area prove unsatisfactory in the future.
7. The location of the effluent field has the required separation distances so there will be no adverse environmental effects on any groundwater, surface water, stormwater, neighbouring drain, or threat to public.

Yours faithfully,

Mark Rounce B.E. (Civil Hons) NZCE
Director
Rounce Projects Solutions Ltd.

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

(ii) This report is based on only being able to place the land application area as shown on the plan.

(iii) Assessments made in this report are based on ground conditions indicated from publications, previous neighbouring site inspections and subsurface investigation described. Variations in ground conditions may occur between investigatory locations and there may be special conditions appertaining to the site which have not been revealed by the investigation and which have not been taken into account in the report. No warranty is included

(iv) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(v) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.

(vi) The installer takes full responsibility for the installation as per the manufacturers and Rounce Project Solutions Instructions; any and all deviations will be notified and agreed to by the owner, Rounce Project Solutions and the TDC before proceeding.



NOTES:

All 100mm uPVC Sewer house pipes to be connected to new wastewater tank, min fall 1:80

SW from house to be directed away from LAA

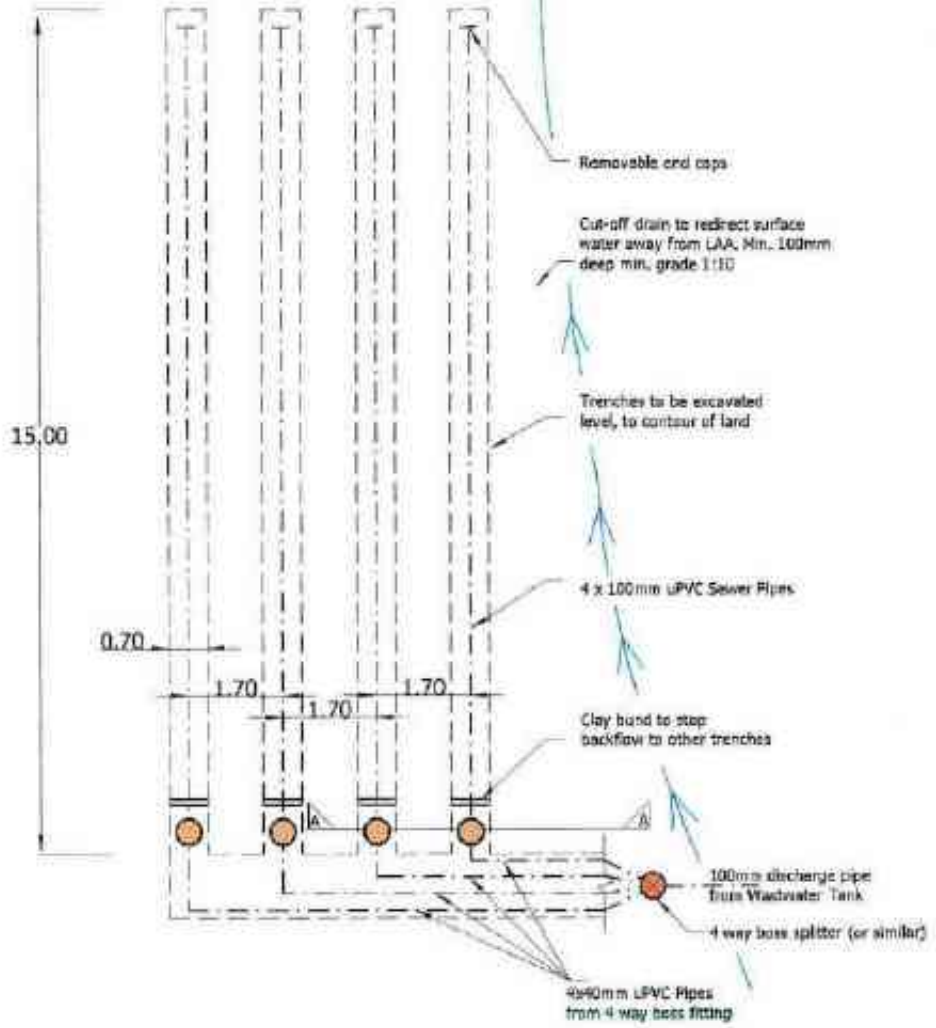
This Plan to be read in Conjunction with RPS Report dated 14 December 2012 and RPS Plan 2

Stuart Gibson
135 Blackbird Valley Road
Lot 1 DP 352843

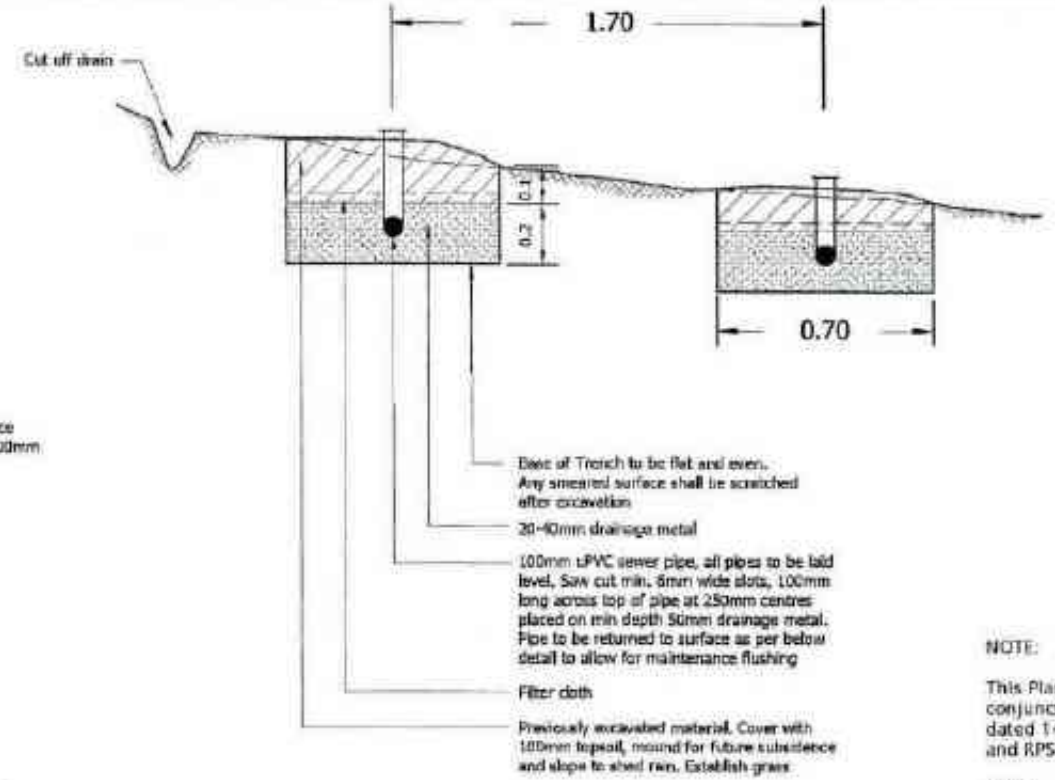
Site Plan

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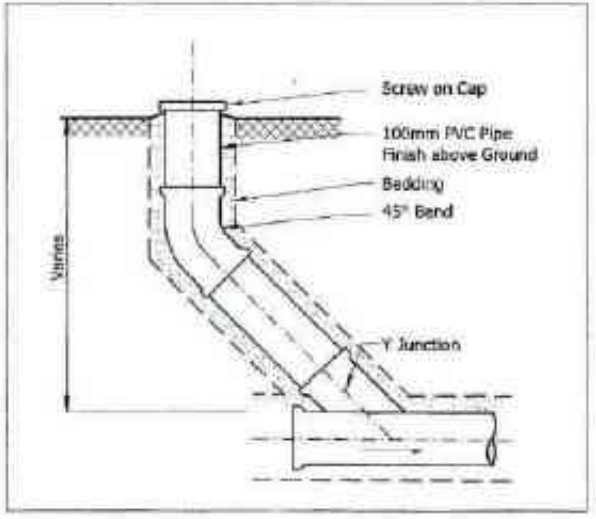
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Job No. 1086	Old Plan No.	Sheet PLAN 1
Issue No. 1	Drawn M.Graf	Date 19/11/2012
Amendment		



Plan



Section A-A



NOTE:

This Plan to be read in conjunction with RPS Report dated 14 December 2012 and RPS Plan 1

Stuart Gibson
135 Blackbird Valley Road
Lot 1 DP 352842

Land Application Area Layout Plan and Section

ROUNCE PROJECT SOLUTIONS

NTS		
1086		PLAN 2
1		19/11/2012

S Gibson

Nelson City Council

tasman

0 100 200 300 400 Metres

N

23 January 2013

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