

Tax Invoice

FILE COPY



Customer Number **BC041080**

G HOGG
87 PURIRI STREET
HAWERA

Private Bag 902, Hawera
Phone: 0800-111-323
Fax: 06-278 8757

Tax Invoice GST Reg. No 52-769-477

Issue Date: 13/01/05

Tax Invoice 76697

Qty	Description	Rate	Amount	
	ADMINISTRATION COMPONENT		50.00	*
	BRANZ LEVY		240.00	OG
	CODE COMPLIANCE CERTIFICATE		60.00	*
	RURAL/RESIDENTIAL INSPECTION FEE		495.00	*
	PLAN CHECKING/APPLICATION PROCESSING		144.00	*
	DEPT OF HOUSING & BUILDING LEVY		156.00	*

TOTAL NOW DUE \$1,145.00

LESS PAID

- \$150.00
\$ 995.00

WE LOOK FORWARD TO
RECEIVING YOUR
PAYMENT TO ENABLE
COMPLETION OF YOUR
CONSENT.

Remittance Notice

South Taranaki
District Council
Private Bag 902, Hawera

Customer Number: **BC041080**
Invoice Number: **76697**
Name: **G HOGG**

LAST DAY FOR PAYMENT **20 FEB 05**

TOTAL NOW DUE 995.00



Amount Paid if Different
from Total Due: \$ _____



STDInvoice 16SEP02

PIM NOTES

OWNER: **G. Mogg**
 ADDRESS OF WORK: **40 Manawapou Rd, Manawa**
 BUILDER: **G. Mogg**
 DESCRIPTION OF WORK: **new dwg.**
 PROPOSED USE: **dwg.**

VALUATION NO: **12270/721/06**
 LEGAL DESC: Lot No: **2** DP: **334063**
 Section: Survey District
 Blk:
 Rapid number:
 Kiwi number:

DATE	ACTIVITY	OFFICER	HOURS	RATE	AMOUNT
8/12/04	Planning	JB	1/4	86	21.50
				TOTAL	
				PAID	
				BALANCE	

PROPERTY INFORMATION MEMORANDUM PROCESSING

	Date Placed in Tray	Date Completed
Planning	8/12/04	8/12/04
Water and Sewer		
Vehicle Crossing		

Compliance Check with District Plan rules

Compliance Check with Resource Consent number RM **040223**
COMPLIES WITH PROPOSED BOUNDARIES.
 granted/...../.....

Designations/Protected Trees/Historic sites etc.....

Site Plan required. Date

Please indicate on the enclosed map the distances from the proposed
 to all boundaries

Complies: Yes/No **Yes** Date **8/12/04**

Officer's Name
BLAIR
HENRY.

APPLICATION NO: BC **041080**
 OWNER: **G. Mogg**

SERVICES

WATER MAIN

APPLICATION FORM SENT.....

SIZEmm LOCATION RETICULATED SYSTEM WITHIN SUBDIVISION*

CONNECTION REQUIRED YES/NO FEE PAYABLE \$..... SIZE..... mm

SEWER MAIN

APPLICATION FORM SENT.....

SIZEmm LOCATION RETICULATED SYSTEM WITHIN SUBDIVISION*

CONNECTION REQUIRED YES/NO FEE PAYABLE \$..... SIZE..... mm

STORMWATER

APPLICATION FORM SENT.....

MAIN SIZEmm LOCATION RETAIN ON SITE

CONNECTION REQUIRED YES/NO FEE PAYABLE \$..... SIZE..... mm

DISCONNECTION AND RECONNECTION FEES (DEMOLITION & REMOVALS)

WATER

SEWER

SIGNATURE [Signature]

DATE 7/22/04

* No DEMOLITION AVAILABLE

Connection fees may apply when more details are provided

OTHER (e.g. HEALTH/STRUCTURAL etc)

LICENCES REQUIRED (Health/Dangerous Goods etc)

SIGNATURE

DATE

17/01/08

GENERAL SPECIFICATIONS



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

DROUGHT RESIDENCE
Lot 2 of DP334063
Manawapou Rd
Hawera

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

Contract Documents

Plan drawings, specification, contract, quotation and schedule of material and works.

PRELIMINARY AND GENERAL (ALL TRADES)

1. Consent The main Contractor shall arrange to obtain all building, plumbing, sewerage consents and electrical permits and arrange all appropriate inspections excluding Code of Compliance inspection.
2. Protection of work All parts of the work liable to injury and all adjoining property, existing work, footways, trees etc. , are to be protected to the best of the Contractor's ability until completion of the Contract.
3. P.C. Sums (Nett sums) The P.C. Sums quoted in this specification are nett and the Contractor or sub-contractor concerned must add any fixing charges and profit he requires to all such items.
4. By-Laws The whole of the work in the Contract is to be carried out in strict accordance with the Local Authorities' regulations.
5. Insurance The Contractor shall at all times keep the whole of the works fully covered by insurance; manly contracts all risk and public liability.
6. Temporary Services The Contractor shall arrange for all temporary services of which the cost will be of the contractors care and remove same on completion of the Contract. If temporary services are not practical or available to connect to and permanent connections have to be made, then this connection fee is at the employer's expense, if not covered in the Contract.
7. Maintenance The Contractors shall maintain the property for a period of 31 days after completion, and any damage done, arising during that time through faulty workmanship, shall be made good at the Contractor's expense.
8. Completions On completion all trade debris is to be removed from the site, and the building left clean and ready for occupancy, with all services and mechanical parts in good working order.

CARPENTER

1. Construction All materials are to be as specified laid true to their various lines and levels and constructed in a proper tradesman like manner, to make the whole of the works a sound construction in accordance with the Building Code. All timber work abutting or resting on masonry units, concrete or brickwork is to be protected with a bitumen - fabric damp proof course. Foundation piles as per plan. Bearers to be in long

lengths, halved over piles where joined. Sub floor bracing as required by the Building Code. Floor joists, to be on edge, set out to suit flooring sheets, nailed with 2/100mm nail at every crossing and trimmed as required for stairwell openings, slabs etc. Double the floor joists at each end of the building. Roof framing is to be contracted with Engineer designed "Gangnail" roof trusses fixed plumb, fastened to the plates with 2 x 100mm nails & Z nails and braced at each end of the building.

2. Purlins (Tile Roof) to be spaced as per plan to accommodate the roof coverings and ridging and fastened to the rafters with two 100mm nails at every crossing. Eaves runner to be nailed to the outside of the wall frames. Eaves bearers to be nailed securely to each rafter overhand.
3. Exterior finish - 100mm brick veneer cladding with brick ties to wall framing as per NZS 3604 1999.

Behind all wall linings and as detailed on the drawings, except if fitted onto tanalised timber, fit a breather type building paper, lapped 100mm. Wall areas are to be covered with exterior lining as shown on the drawings. Soffits and porch ceilings to be lined with flat hardies sheets. Build in the various exterior joinery frames. Fit head flashing. Provide access to under foundation.
4. Interior Finish A continuous reinforced concrete masonry ring foundation dimensioned as per plan. 100mm float finished reinforced concrete floor slab laid over continuous vapour barrier. Interior wall linings generally to be 9.5mm sheets fixed as per manufacturer's specifications. Wall linings of which the contractor is to take the utmost care of quality control but the responsibility of manufacturer's defects will not be rectified at the contractor's expense.
5. Timber Framing generally as per general specifications and requirements of NZ Building Code 1992 and NZS 3604 1999
In general, framing shall be 90 x 45 kiln dried, H1.2 treated, laser frame studs with trussed roof framing.
6. Plates to be in long straight lengths. Bottom plates and wall plates to be butt jointed over continuous support, top plates to be butt jointed and fastened with 4 NH nail plates.
7. Studs are to be set out to accommodate 2.4m high wall lining sheets, and are to be held to the plates with two 100mm nails at each end, bowed studs are to be straightened with saw cuts, wedges and 100 x 25mm or 75 x 25mm strapping.
8. Lintels Where built up trimmer studs are used, use one 90 x 45mm stud which is to be run up past the trimmer to the top plate and the 100 x 25mm or 90 x 45mm remaining is to run up to the underside of the lintel.
9. Nogging (dwangs) Shall be wall thickness 40mm spaced in rows at 1350mm centres maximum, set out to accommodate the wall lining sheets and be nailed with two 90mm nails at each end.
10. Ceiling battens to be set out to accommodate the ceiling lining sheets and comices around the perimeter of each room. 70x35 timber ceiling battens at 450mm maximum centres.
11. Wall Bracing As per bracing schedule.
12. Wall frames are to be assembled, squared, braced and erected. The bottom plates are to be straightened and fastened down, the corners are to be plumbed both ways using a plumb bob and line and the top plates are to be held straight with temporary bracing until the ceiling and roof framing and bracing has been completed.
13. All joints nail holes and other imperfections are to be stopped flush and left ready for the paperhanger.
14. Shower Linings as per itemised in Schedule of Material and Works and fitted to manufacturer's specifications.

15. Ceiling Linings - 10mm Gib-board ceiling lining on 70x35 timber ceiling battens, at 450mm maximum centres, stopped to paint finish. Stopping to Level 4 finish as per Winstones Publication "Levels of Gib Board Finish".
16. Interior doors are to be fitted with one and a half pairs of loose pin butts.
17. Skirtings to be fitted to the floor, scribed to internal corners and mitred at external angles.
18. Coat cupboard and wardrobes as per itemised in Schedule of Material and Works.
19. Linen, hot water cupboards as per itemised in Schedule of Material and Works.
20. Generally form a ceiling access in a convenient and inconspicuous place. Co-operate with the Electrician in the building in of a meter box and the building of a switchboard recess and trimmed around as required. Supply and fix the sundry internal finishing mouldings and trim as required. All internal finishing timbers shall be free from all hammer marks, splits, etc. All nails in exposed work (interior and exterior) are to be punched.

PLUMBER AND DRAINLAYER

1. Generally The whole of the plumbing and drainlaying shall be done in strict accordance with The Building Code and drains shall be laid by registered workmen only.
2. Exterior Work Supply and fix all necessary flashings, lead caps, in conjunction with the builder to make a thoroughly watertight job. Supply and fix spouting to all eaves, laid with even falls to downpipes.
3. Water Service Lay on cold water from the main to a hot water cylinder, set up as shown on the drawings. Provide and set up the cylinder, complete with casing, lagging and thermostatically controlled electric element. Lay on hot and cold water services to the various fittings as shown on the drawings and to two hose taps positioned as on accompanying drawing. Hot water service to run in copper main and cold water to run in PVC or copper.
4. Fittings Provide and set up the fittings as shown on the drawings and provide traps and wastes to bath, vanity units, sink top, shower tray stainless steel or similar. W.C's, tub, taps as selected Exterior hose taps - brass.
5. Drains or street channel Stormwater to be piped to stormwater main connection, or standard soak holes. Sewer drains to be first quality pipes, 100mm laid with even falls and easy bends to a main connection as directed. Provide and fix all necessary gully traps, terminal and back vents, cleaning eyes, inspection junctions and bends etc, as may be necessary to comply with the local authorities' regulations.
6. **NOTE** All underground pipes and gullies will be located in relation to the natural ground level and no responsibility will be taken by the contractor for subsequent ground work, which alters that level.

JOINER

1. Windows to be Aluminium unless detailed as Timber Aluminium windows shall be delivered to the site, stored on edge and protected from breakages, damage, plaster splashes etc. Timber windows to be of the sizes and types as indicated on the drawings, of standard construction and high class workmanship. The windows are to be glazed with a standard quality glass, with obscured glass to bathrooms and W.C. windows.
2. Doors Exterior door frames and doors are to be of standard sizes and of the types as shown on the drawing. Interior doors are to be flush type.
3. Fittings Construct the various units/tops as shown on the drawings.

ROOFER

1. **Generally** Refer to the drawings for the type of roofing to be used.
2. **Colour Tiles** Tile battens are to be nailed firmly to the rafters, spaced to suit the gauge of the tile. Tiles to be laid with standard laps and nailed down in accordance with standard practices. Hips and ridges to be covered in like material.

CONCRETER

1. **Materials** Concrete to be mixed with a test of 20,000 kPa after 28 days. Reinforcement to be round mild steel rods or reinforcing mesh, as detailed, free from scale, paint, grease, etc. Formwork shall be erected and braced in such a manner that the concrete shall finish to the dimensions shown or specified. The formwork is to be hosed out and kept wet before and while the concrete is being placed.
2. **Concrete Work** Construct the various footings as detailed on the drawings and reinforce as shown. Hard filling to be pumice or similar compacted in layers of 150mm depth maximum. Bind with 25mm of sand or use on-site soil for all hard filling. All floor slabs to be laid to true and straight surfaces, with a screed finish. Thickness and reinforcing as detailed on the drawings. Allow to build in all holding down bolts, pipes, wires, etc, as required, prior to the pouring of the concrete. Holding down bolts to be 375mm maximum from corners and at 1.2m centres maximum ramset down plates to floor at same spacing.

EXCAVATOR

1. **Generally** Excavate the site to the levels shown on the drawings where applicable.
2. **Excavate** As required for all wall footings, pile footings, steps etc, as shown on the drawings. Footing excavations are to be stepped to suit the slope of the ground, and kept level at the bottom, maintained free from fallen material before placing reinforcing or concrete foundations after . Deposit the surplus soil on the site, practical to the contractor, or as directed by the employer. Any excavations for power or water resources, or sewage and drainage to be refilled, but not reinstated to its original condition. Replanting or resealing of owners care.

INSULATION

1. Where applicable the building shall be insulated in accordance with Council requirements.
R1.8 Batts to wall areas
R2.2 Batts to ceiling areas

ELECTRICIAN

1. **Generally** This contract includes the supply and installation of the electric wiring system complete. The whole of the work shall be carried out strictly in accordance with the local authorities' By-laws and the electrical contractor is to obtain all permits from the supply authority and arrange for all inspections required.
2. **Supply** Arrange for a mains supply to the building from nearest boundary.
3. **Boards** Provide and set up as required one meter board and case with all necessary equipment thereon neatly labelled. Provide and set up where directed by builder, a switchboard panel with all necessary fuses, switches and main switches properly mounted and labelled, and hinged on one side. This panel can be combined with the meter board if convenient.
4. **Fittings** Provide and fix the lights, switches and power outlets as listed on drawings, allow to install stove. Wire up the thermostatically controlled hot water cylinder element, earth all metal wastepipes and metal fittings as required by the regulations.

5. Completion On completion of all work to fill out and present the appropriate certificate to the principal contractor, who will only authorise the connection of power once all payments pursuant to the contract documents are paid to their office.

PAINTER AND PAPERHANGER

1. Generally All paint and polyurethane is to be delivered to the job, exactly to the manufacturer's direction and currently usable.
2. Exterior Woodwork - prime, stop and paint in one undercoat and one finish coat with a good finish. Stained work - one coat of stain, the nail holes etc. are to be stopped. Metal work, including spouting downpipes, wrought iron, one coat metal primer and one finish coat. Hardies sheets - two coats. Galvanised iron roof to be left unpainted.
3. Interior All ceilings to be given two coats of flat ceiling paint, or textured. All wall area to be painted or lined with wallpaper, hung in single lengths, plumb, with butt joints unless otherwise stated. The quality of the wallpaper is not of the contractor's care, any defects which become pronounced due to the the nature of the wallpaper will not be rectified at the contractor's expense. When walls are sprayed, workmanship is to be of highest trade practice. Wallpaper to PC sum. Flush doors, if stained, only to be sealed, and given one coat of satin finish polyurethane. To be rubbed down between coats. All other interior finishing woodwork to be primed, stopped, undercoated and finished.

CARPENTER

Material Schedule or to By-Law 3604 - or as shown on accompanying drawing

MATERIAL	SIZE	GRADE
<u>Note:</u> Timber sizes noted are generally Ex Gauged Sizes		
Trimming studs, lintels	as per standard code	
Trimmer studs	90 x 45 mm	Rad H1.2
Wallplates	90 x 45mm	Rad H1.2
Top and bottom plates	90 x 45 mm	Rad H1.2
Studs	90 x 45 mm	Rad H1.2
Lintels	90-240 x 45 mm	Rad H1.2
Nogging (dwangs)	90 x 45 mm	Rad H1.2
Bracing	metal cut in	
Ceiling battens	75 x 40 mm	Rad CF
Rafters	90 x 45 mm	Rad H1.2
Ridges and Hip rafters	90 x 45 mm	Rad H1.2
Valley rafters	90 x 45 mm	Rad H1.2
Valley boards	150 x 25 mm	Rad H1.2
Under purlins	100 x 75 mm	Rad H1.2
Roof struts	90 x 45 mm	Rad H1.2
Collar ties	150 x 25 mm	Rad H1.2
Dragon ties	75 x 40 mm	Rad CF
Roof trusses	Gangnail or similar	Rad CF
Eaves framing	75 x 40 mm	Rad CF
Fascia Boards, Barge boards, Exterior facing)		
Weatherboards, Vertical Boards) as per drawings		
Interior door jambs	30mm	Rad P. U.T.
Architraves (if any)	40 x 13 mm	
Skirtings	No 2	Pine, Custom wood
Scotia	No 24	Pine, Custom wood
Splashboards	25mm	Rad P. U.T.
Shelving	25mm	Rad P.
Exterior trim	Mouldings as required	Rad P. H3
Interior trim	Mouldings as required	Rad P. U.T.

DOCUMENTS

The following documents and publications should be referenced by all trades:

CONCRETE

NZS 3104	Concrete production - high grade and special grade
NZS 3108	Concrete production - ordinary grade
NZS 3109	Concrete construction
NZS 3114	Concrete surface finishes
NZS 3124	Concrete construction for minor works
NZS 3402	Steel bars for the reinforcement of concrete
NZS 3422	Welded fabric of drawn steel wire for concrete reinforcement
NZS 3604	Light timber frame buildings not requiring specific design

BRICKWORK & BLOCKWORK

NZBC	B1/AS1	Structure - general 3.0 Masonry
NZBC	B1/AS3	Small chimneys
AS 1225		Clay building bricks
NZS 3117		Pigments for Portland cement and Portland cement products
NZS 3604		Light timber frame buildings not requiring specific design
NZS 4210		Masonry construction materials and workmanship
NZS 7421		Installation of solid fuel burning domestic appliances
AS/NZS 4455		Masonry units and segmented pavers
NZS 3109		Concrete construction
NZS 4229		Concrete masonry buildings not requiring specific design
NZS 4230		The design of masonry structures

BRANZ Bulletin 324: Masonry veneer cladding - detailing and construction.

CARPENTRY

AS 1748	Mechanically stress-graded timber
AS/NZS 1859	Reconstituted wood based panels 1859.1 Particle board
AS/NZS 2269	Plywood - structural
NZS 2295	Building papers (breather type)
NZS 3602	Specifying timber and wood-based products for use in building
NZS 3603	Timber structures standard
NZS 3604	Light timber frame buildings not requiring specific design
NZS 3606	Manufacture of glue-laminated timber
NZS 3617	Profiles of weatherboards, fascia boards and flooring
NZS 3631	NZ national timber grading rules
NZMP 3640	Minimum requirements of the NZ Timber Preservation Council Inc.
NZS 4214	Methods of determining the total thermal resistance of parts of buildings
NZS 4218	Energy efficiency - Housing and small building envelope
NZS 4222	Materials for the thermal insulation of buildings

Laserframe product information: Laserframe technical information
Instruction manual
Stud design tables
Construction information sheets

AS 2458	Hardboard
NZS/AS 2908	Cellulose-cement products 2908.2 Flat sheets
NZS 3610	Profiles of mouldings and joinery
NZS 3612	Interior plywood

BRANZ Bulletin 328: Selection and use of fasteners
BRANZ Bulletin 343: Moisture in timber

BRANZ Bulletin 302: Preventing moisture problems in timber framed skillion roofs
BRANZ Bulletin 328: Selection and use of fasteners
BRANZ Bulletin 343: Moisture in timber
BRANZ Bulletin 357: Thermal insulation of houses

CLADDING

NZBC	E2/AS1	External moisture 2.1 Timber weatherboards
AS/NZS 1491		Finger jointed structural timber
AS/NZS 2269		Plywood - Structural
AS/NZS 2908		Cellulose products 2908.2 Flat sheets
NZS 2295		Building papers (breather type)
NZS 3602		Specifying timber and wood-based products for use in building
NZS 3604		Light timber frame buildings not requiring specific design
NZS 3611		Exterior plywood
NZS 3617		Profiles of weatherboards fascia boards and flooring
NZS 3631		NZ national timber grading rules
NZMP 3640		Minimum requirements of the NZ Timber Preservation Council
NZS 4214		Methods of determining the total thermal resistance of parts of buildings

BRANZ Bulletin 284: Sealed joints in external claddings - 2. Sealants
BRANZ Bulletin 304: Flashing design
BRANZ Bulletin 305: Domestic flashing installation
BRANZ Bulletin 326: Cladding buildings on exposed sites
BRANZ Bulletin 328: Selection and use of fasteners
BRANZ Bulletin 343: Moisture in timber

ROOFING

NZBC	E2/AS1	External moisture 1.0 Roofs
NZS/AS 1397		Steel sheet and strip - hot-dipped, zinc-coated, or aluminium/zinc-coated
NZS 2295		Building papers, (breather type)
NZS 3403		Hot-dipped galvanised corrugated steel sheet for building purposes
NZS 3602		Timber and wood-base products for use in building
NZS 3604		Light timber frame buildings not requiring specific design
NZMP 3640		Minimum requirements of the NZ Timber Preservation Council
NZS 4206		Concrete interlocking roofing tiles
NZS 4217		Pressed metal tile roofs
NZS 4222		Materials for the thermal insulation of buildings

BRANZ Bulletin 284: Sealed joints in external claddings - 2. Sealants

New Zealand Metal Roofing and Cladding Manufacturers' Association Inc: Profiled metal roofing

ALUMINIUM WINDOWS AND DOORS

NZBC	F2/AS1	Hazardous building materials 1.0 Glazing
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AS/NZS 1231 applications	Aluminium and aluminium alloys - Anodised coatings for	architectural
AS/NZS 2208	Safety glazing materials in buildings	
NZS 3504	Aluminium windows	
NZS 4211	Performance of windows	
NZS 4223	Glazing in buildings Parts 1 & 2: Glazing in buildings Part 3: Human impact safety requirements	

Architectural Aluminium Association of New Zealand: Aluminium Window Handbook
 Architectural Aluminium Association of New Zealand: Specification for powder coatings on architectural aluminium products
 Architectural Aluminium Association of New Zealand: Installation code for aluminium joinery products

BRANZ Bulletin 349: Finishes for aluminium

TILING

NZBC	D1/AS1	Access Routes 2.1 Slip resistance
AS 2358		Adhesives for ceramic tiles
AS/NZS 3661		Slip resistance of pedestrian surfaces 3661.1 Requirements
AS 3740		Waterproofing of wet areas within residential buildings
AS 3958		Ceramic tiles Part 1: Guide to the installation of ceramic tiles
BS 5980		Adhesives for ceramic tiles
BS 6431		Ceramic floor and wall tiles

BRANZ publication: Good Tiling Practice

PLUMBING, DRAINAGE & GAS

NZBC	G12/AS1	Water supplies
NZS 4602		Low pressure copper thermal storage electric water heaters
NZS 4603		Installation of low pressure thermal storage electric water heaters copper cylinders (open-vented systems)
NZS 4606		Storage water heaters Part 3: Specific requirements for water heaters with composite shells
NZS 4607		Installation of thermal storage electric water heaters: valve-vented systems
CSA B137-8		Polybutylene (PB) piping for hot and cold water distribution systems.
Plumbers, Gasfitters and Drainlayers Act 1976		
NZBC	G10/AS1	Piped services (Gas)
NZS 5258		Gas distribution
NZS 5261		Installation of gas burning appliances and equipment
NZS 7646		Polyethylene pipes and fittings for gas reticulation
NZBC	G1/AS1	Personal hygiene 2.0 Fixture construction and installation 3.0 Location of sanitary fixtures
NZBC	G13/AS1	Foul water - sanitary plumbing
NZS 7641		Unplasticized PVC waste and ventilating pipe, fittings and

	accessories, 32mm, 40mm and 50mm
NZBC	B1/AS1 Structure - general 6.0 Drains
NZBC	E1/AS1 Surface water
NZS 3108	Concrete production, ordinary grade
NZS 3402	Steel bars for the reinforcement of concrete
AS/NZS 3500	National plumbing and drainage code
NZS 7643	Installation of Unplasticized PVC pipe systems
NZS 7649	Unplasticized PVC sewer and drain pipe and fittings

BRANZ Bulletin 304: Flashing design.
 BRANZ Bulletin 305: Domestic flashing installation.
 Plumbers, Gasfitters and Drainlayers Act 1976
 Electricity Regulations 1997
 Gas Regulations 1993

ELECTRICAL

AS/NZS 3194	Electric shaver supply units
NZS 6401	PVC-insulated cables for electric power and lighting

Electricity Regulations 1997

Job Details

Name	Drought Residence	
Street and Number	Manawapou Rd	
Lot and DP Number	Lot 2 DP334063	
City/Town/District	Hawera	
Designer and date	BRACING AREA 1 (HOUSE)	4-Dec-04
Company Name		

Building Specification

Location of Storey	single	▼	
Floor Loading	2 kPa	▼	
Foundation Type	slab	▼	
Building Height to Apex (m)	6	▼	
Roof Height above Eaves (m)	3	▼	
Stud Height (m)	2.4	▼	
Cladding Weight (top or single)	heavy	▼	
Cladding Weight (lower)	light	▼	<i>not applicable (single storey building)</i>
Cladding Weight (subfloor)	light	▼	<i>not applicable (slab)</i>
Roof Weight	light	▼	
Roof Pitch (degrees)	25-45	▼	
Room in Roof Space	no	▼	
Building Length (m)	14.8		<i>Use roof length including eaves</i>
Building Width (m)	17.2		<i>Use roof length including eaves</i>
Gross Building Plan Area (m2)	184		

Building Location

Wind Zone	High		Earthquake Zone
Region	R1	▼	A
Terrain	Inland	▼	
Exposure	Exposed	▼	
Topography	Moderate	▼	

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	78 BUs/m
W across	n/a	78 BUs/m
Totals		
W along	n/a	1342 BUs
W across	n/a	1154 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	5.6 BUs/m2
Totals		
E along	n/a	1030 BUs
E across	n/a	1030 BUs

Gib® Wall Bracing Calculation Sheet B **single storey** V104B

Along		Bracing Elements provided					Wind	Earthq.
Wall or Bracing Line								
1	2	3	4	5	6	7	8W	9EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	BUs Achieved	BUs Achieved
C		C1	Gib®	Gib1a	2.1	2.4	116	105
<i>line totals</i>		C2	Gib®	Gib1b	2.4	2.4	180	120
W	296							
EQ	225							
D		D1	Gib®	Gib1b	3	2.4	225	150
<i>line totals</i>		D2	Gib®	Gib1b	4.4	2.4	330	220
W	555							
EQ	370							
E		E1	Gib®	BR5	1.6	2.4	184	136
<i>line totals</i>		E2	Gib®	BR5	1.2	2.4	138	102
W	322							
EQ	238							
F		F1	Gib®	BR5	1.2	2.4	138	102
<i>line totals</i>								
W	138							
EQ	102							
G		G1	Gib®	BR5	1.2	2.4	138	102
<i>line totals</i>								
W	138							
EQ	102							
<i>line totals</i>								
W								
EQ								
<i>line totals</i>								
W								
EQ								
	enter							
<i>line totals</i>								
W								
EQ								
	enter							
<i>line totals</i>								
W								
EQ								
	enter							
<i>line totals</i>								
W								
EQ								

						Wind	Earthq.
Totals Achieved						1449	1037
						OK	OK
Totals Required (from Sheet A)						1342	1030

Job Details

Name	Drought Residence	
Street and Number	Manawapou Rd	
Lot and DP Number	Lot 2 DP334063	
City/Town/District	Hawera	
Designer and date	BRACING AREA 2 (GARAGE)	4-Dec-04
Company Name		

Building Specification

Location of Storey	single	▼	
Floor Loading	2 kPa	▼	
Foundation Type	slab	▼	
Building Height to Apex (m)	5	▼	
Roof Height above Eaves (m)	2	▼	
Stud Height (m)	2.4	▼	
Cladding Weight (top or single)	heavy	▼	
Cladding Weight (lower)	light	▼	<i>not applicable (single storey building)</i>
Cladding Weight (subfloor)	light	▼	<i>not applicable (slab)</i>
Roof Weight	light	▼	
Roof Pitch (degrees)	25-45	▼	
Room in Roof Space	no	▼	
Building Length (m)	6.5		<i>Use roof length including eaves</i>
Building Width (m)	8		<i>Use roof length including eaves</i>
Gross Building Plan Area (m2)	52		

Building Location

Wind Zone	High	Earthquake Zone
Region	R1 ▼	A ▼
Terrain	Inland ▼	
Exposure	Exposed ▼	
Topography	Moderate ▼	

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	64 BU/m
W across	n/a	54 BU/m
Totals		
W along	n/a	512 BU
W across	n/a	351 BU

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	5.6 BU/m2
Totals		
E along	n/a	291 BU
E across	n/a	291 BU

Design Steps 4 and 5 – Bracing Units Achieved (Wind and Earthquake)

The next step is to place selected wall bracing systems on the bracing lines. A range of Gib® bracing systems have been tested and the specifications and Bracing Unit ratings are listed below. Gib® Standard plasterboard systems often represent the majority of the wall bracing elements. Gib® Braceline or Gib® Toughline systems are used for narrow walls or when high Bracing Unit ratings are required. Gib® Noiseline and Gib® Ultraline Bracing Unit ratings generally fall between Gib® Standard plasterboard and Gib® Braceline.

Wall Heights Other Than 2.4m

The published Bracing Unit ratings are based on a 2.4 metre height. For other heights, the ratings must be multiplied by a factor $f = 2.4$ divided by actual wall height. The Bracing Unit ratings for walls higher than 2.4 metres will reduce, and the Bracing Unit rating for lower walls will increase. Factor f must not be greater than 1.3.

TABLE 1: Bracing Unit ratings for 10mm & 13mm Gib® Standard, 10mm and 13mm Gib® Ultraline, 10mm Gib® Aqualine, 10mm Gib® Fyreline, 10mm Gib® Noiseline.

Type	Minimum length (m)	Lining Requirement	Additional Requirement	Bracing Units per metre (wind)	Bracing Units per metre (Earthquake)
10mm Gib® Standard plasterboard bracing systems (these ratings also apply to 10mm Gib® Aqualine, and 10mm Gib® Fyreline)					
GIB1a	1.8 and less than 2.4	10mm Gib® Standard plasterboard one face, fixed horizontal or vertical	diagonal brace	55	50
GIB1b	2.4 and greater			75	50
GIB2a	1.8 and less than 2.4	10mm Gib® Standard plasterboard both faces, fixed horizontal or vertical	diagonal brace	75	60
GIB2b	2.4 and greater			80	70
GIB3	1.2	10mm Gib® Standard plasterboard both faces, fixed horizontal or vertical	N/A	65	60
13mm Gib® Standard plasterboard bracing systems (these ratings also apply to 13mm Gib® Ultraline)					
GIB10	1.8	13mm Gib® Standard plasterboard or 13mm Gib® Ultraline both faces, fixed horizontal or vertical	N/A	65	60
GIB11	1.2	13mm Gib® Standard plasterboard or 13mm Gib® Ultraline both faces, fixed horizontal or vertical	N/A	65	65
10mm and 13mm Gib® Ultraline bracing systems (these ratings also apply to 10mm Gib® Noiseline)					
UL1	1.2	Gib® Ultraline one face, fixed horizontal or vertical	6kN connections	70	60
UL2	1.2	Gib® Ultraline both faces, fixed horizontal or vertical	6kN connections	100	85

Design Steps 4 and 5 – Bracing Units Achieved (Wind and Earthquake)

TABLE 2: Bracing Unit ratings for 10mm Gib® Braceline and 10mm or 13mm Gib® Toughline.

Type	Minimum length (m)	Lining Requirement	Additional Requirement	Bracing Units per metre (wind)	Bracing Units per metre (Earthquake)
10mm Gib® Braceline bracing systems (these ratings also apply to 10mm or 13mm Gib® Toughline)					
BR1a	1.8 and less than 2.4	Gib® Braceline one face, fixed horizontal or vertical	diagonal brace	70	60
BR1b	2.4 and greater			90	75
BR2a	1.8 and less than 2.4	Gib® Braceline one face, fixed vertical	N/A	75	60
BR2b	2.4 and greater			85	60
BR3a	1.8 and less than 2.4	Gib® Braceline one face, fixed horizontal	N/A	60	45
BR3b	2.4 and greater			95	65
BR4	0.9 and less than 1.2	Gib® Braceline one face, fixed vertical or horizontal*	6kN connections	100	85
BR5	1.2	Gib® Braceline one face, fixed vertical or horizontal*	6kN connections	115	85
BR6	1.2	Gib® Braceline one face, 10mm Gib® Standard on the other, fixed vertical or horizontal*	12kN connections	150	110
BR7	0.9	Gib® Braceline one face, 7.5mm plywood on the other, fixed vertical or horizontal*	6kN connections	145	145
BR8	0.9	Gib® Braceline one face, 4.75mm hardboard on the other fixed vertical or horizontal*	6kN connections	120	95
BR9	0.6	Gib® Braceline one face, fixed vertical or horizontal*	6kN connections	110	95

Notes: 1) Where linings are specified on both faces (Systems GIB2, GIB3, GIB11, UL2, BR6, BR7, BR8) each face must be fastened as a braced element. Refer page 12 for fastening systems relating to Plywood and Hardboard. The standard 10mm Gib® Plasterboard on the reverse face of BR6 is fastened as per system GIB1.

2) See notes on Hold-Down Strap Placement, Page 12.

*3) For horizontal fixing of linings in Systems BR4, BR5, BR6, BR7, BR8, BR9, see page 18.

Construction Details

Framing

General framing requirements such as grade, spacings and installation shall comply with the provisions of NZS 3604. Winstone Wallboards recommends the use of kiln-dried machine stress graded framing (KD MSG). To achieve the published bracing performance the minimum actual framing dimensions are 90 x 35mm for external walls and 70 x 35mm for internal walls. System BR9 always requires a minimum of 90 x 35mm framing.

Wall bracing tests on Gib® Systems were undertaken without nogs. Nogs are not considered to add to the bracing performance of the wall.

Fastening Gib® Plasterboard Linings

10mm and 13mm Gib® Standard, 10mm and 13mm Gib® Ultralite, 10mm and Gib® Noiseline and 13mm Gib® Toughline may all be fastened using 32mm x 6g Gib® Grabber drywall screws or 30 x 2.8mm Gib® Nails. Gib® Braceline and 10mm Gib® Toughline must be fastened with 32mm Gib® Grabber Braceline screws, or 30mm Gib® Braceline nails and washers.

Gib® linings for designated bracing elements are fastened at 150mm centres around the perimeter of the bracing element. **The first fastener is always placed 50mm away from the sheet corner. See detail page 16.**

Fastening in the field of the bracing element is conventional and the screw and glue method is recommended. (See Fastener Layout details, pages 14, 15).

When fixing part sheets of Gib® plasterboard, a minimum width of 300mm is recommended for bracing elements.

Full height sheets shall be used where possible. Where sheet end butt joints are unavoidable they must be formed over nogs (or over the studs where horizontal fixing is permissible) and fastened at 200mm centres. Alternatively, the sheet end butt joints may be back-blocked.

Plywood (BR7) and Hardboard (BR8)

'Plywood' specified in BR7 is a grade C-D 7.5mm construction plywood manufactured to AS/NZS 2269:1994, fixed with 30 x 2.8mm Gib® Nails at 150mm centres around the perimeter of the bracing element and at 300mm centres to intermediate framing.

'Hardboard' specified in BR8 is 4.75mm standard or oil tempered hardboard manufactured by Fletcher Wood Panels Ltd., fixed with 30 x 2.8mm Gib® Nails at 150mm centres around the perimeter of the bracing element and at 300mm centres to intermediate framing.

Fire Resistance Ratings

10mm Gib® Braceline, 10mm Gib® Aqualine, 10mm Gib® Noiseline, 10mm and 13mm Gib® Ultralite and 10mm Gib® Toughline may be substituted for 10mm Gib® Fyrelite in fire rated constructions.

The fastener length for the fire rated system applies. The field of the braced element must also be fastened in accordance with the fire rated specification (adhesive not permitted).

Jointing and Stopping

All sheet joints must be paper tape reinforced and stopped in accordance with the publication entitled, "Gib Living Solutions® Site Guide".

Fastening the Bracing Element to Timber Floors

Fastening of the bottom plate of a Gib® wall bracing element to a timber framed floor must be in accordance with NZS3604 with pairs of 100 x 3.75mm nails at 600mm centres. In addition 6 or 12kN connections must be installed when specified for the particular bracing element type.

Fastening the Bracing Element to Concrete Slabs

Fastening of the bottom plate of a Gib® wall bracing element to concrete floors must be in accordance with NZS3604 for external walls, which includes a 12mm bolt (complete with a 50 x 50 x 3mm square washer) or a proprietary fixing with equivalent performance within 150mm (90mm for BR6) from both ends of the wall bracing elements.

On internal bracing lines, the bottom plate of Gib® Bracing elements may be fixed using 3.8mm shot fired fasteners fitted with 16mm discs, spaced at 160mm and 300mm from the end studs and thereafter at 600mm centres. This method only applies to Systems Gib1, 2, 3, 10, 11 and BR1, 2, 3.

Hold-Down Strap Placement (Refer Illustrations Pages 17 and 18)

Where 6kN connections are specified in the 'Additional Requirements' column, they are required only if the bracing element terminates within 1.2 metres from a door or window opening (see illustration, page 18).

Where 12kN connections are specified they must be installed at both ends of the bracing element in all cases.

Openings in Bracing Elements

Openings are allowed within the middle third of a wall bracing element's length and height. Neither opening dimension shall be more than one third of the element height. Wall linings are fixed to opening trimmers at 150mm centres. Small openings (e.g. power outlets) of 90 x 90mm or less may be placed no closer than 90mm to the edge of the braced element.

Angle Braces

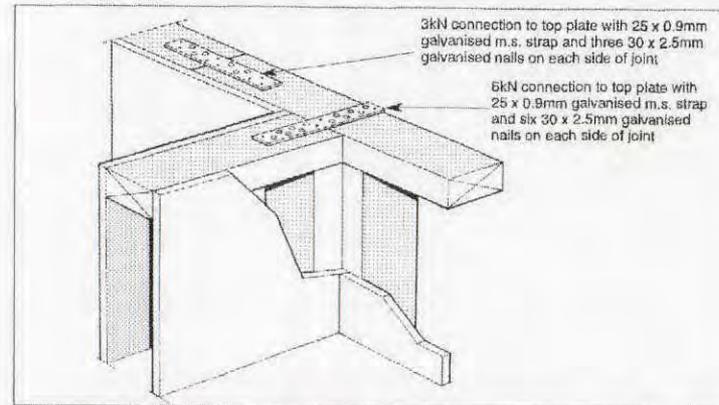
Angle braces serve to keep frames square during transport and construction. They also act as part of the temporary bracing of a building under construction. Angle braces contribute only a fraction to the bracing of a completed structure. The performance of a completed building depends mainly on the wall linings and their fixings.

Where specified, metal angle braces must be placed at an angle no steeper than 55 degrees, and within the designated length of the bracing element. For elements longer than 3.6 metres, pairs of angle braces (in opposite directions) are required. Fixing of angle braces is with three 30 x 2.8mm Gib® nails to top and bottom plates, and two 30 x 2.8mm nails to intermediate framing.

Top Plate Connections

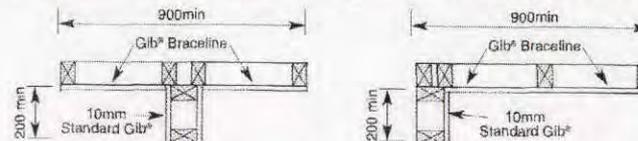
The top plate of a wall that contains one or more wall bracing elements shall be jointed according to the rating of the highest-rated individual wall bracing element as follows:

- Rating not exceeding 100 bracing units: A 3kN connection as shown or by an alternative fixing of 3kN capacity in tension or compression along the plate;
- Rating exceeding 100 bracing units: A 6kN connection as shown or by an alternative fixing of 6kN capacity in tension or compression along the plate.



Guidelines for Intersecting Walls (all Gib® Bracing Sheet Types)

Gib® Bracing Elements may have intersecting walls with a minimum length of 200mm. Bracing element sheets shall be fixed and jointed as given on pages 14 and 15. Fasteners are required around the perimeter of the bracing element. Vertical joints at T-junctions (illustrated below) shall be fixed and jointed as specified for intermediate sheet joints. **The bracing element length must be no less than 900mm.**



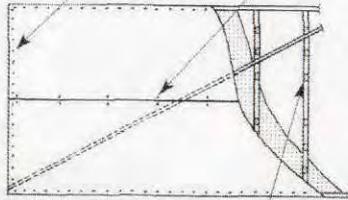
Where Wall Bracing Elements are interrupted by T or L junctions (as illustrated in the 900mm example above) they should be considered as follows:

The bracing element has been cut to accommodate the junction. Nevertheless, in respect of calculating Bracing Units, the Bracing Element is deemed to be continuous for the whole length (900mm in this particular case).

Fastener Layouts

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails where sheets cross studs

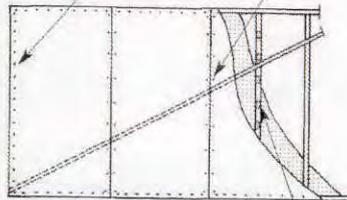


**Gib® 1 (lined one side)
Gib® 2 (lined both sides)
(Horizontal Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm x 6g Gib® Grabber or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails at 300mm centres

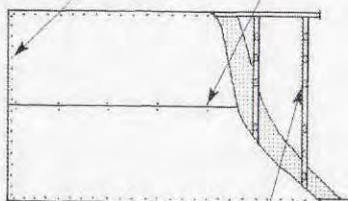


**Gib® 1 (lined one side)
Gib® 2 (lined both sides)
(Vertical Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails where sheets cross studs

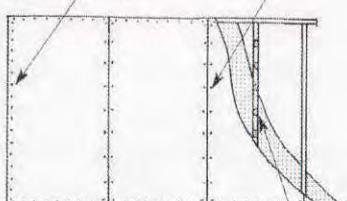


**Gib® 3 (lined both sides)
Gib® 10 (lined one side)
Gib® 11 (lined both sides)
(Horizontal Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails at 300mm centres

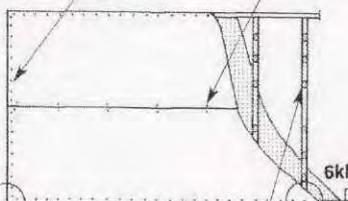


**Gib® 3 (lined both sides)
Gib® 10 (lined one side)
Gib® 11 (lined both sides)
(Vertical Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails where sheets cross studs

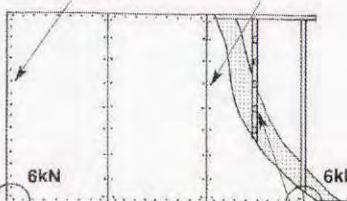


**UL1 (lined one side)
UL2 (lined both sides)
(Horizontal Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm x 6g Gib® Grabber screws or 30mm Gib® Nails at 150mm centres to perimeter of Bracing Element

Single 32mm screws or Gib® Nails at 300mm centres



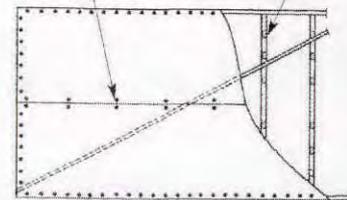
**UL1 (lined one side)
UL2 (lined both sides)
(Vertical Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

Fastener Layouts - continued

32mm single screws or Gib® Nails where sheets cross studs

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

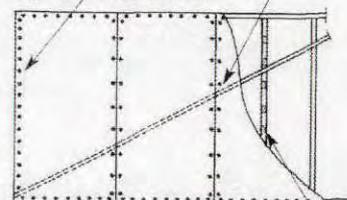


**BR1 (lined one side)
(Horizontal Fixing)**

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

Single 32mm screws or Gib® Nails at 300mm centres

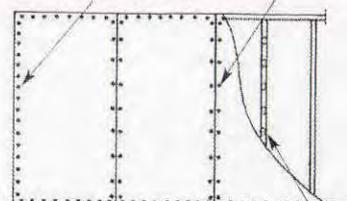


**BR1 (lined one side)
(Vertical Fixing)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

Single 32mm screws or Gib® Nails at 300mm centres

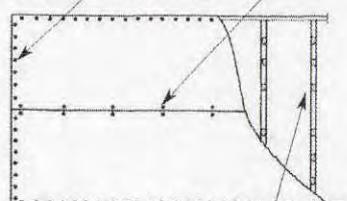


**BR2 (lined one side)
(Vertical Fixing Only)**

Daub of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

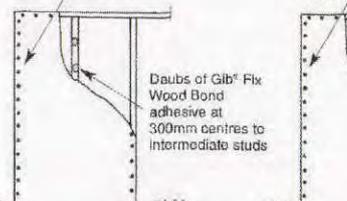
Single 32mm screws or Gib® Nails where sheets cross studs



**BR3 (lined one side)
(Horizontal Fixing Only)**

Daub of Gib® Fix Wood Bond adhesive only at 300mm centres to intermediate studs

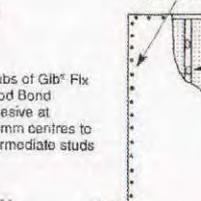
32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element



**BR4 (lined one side)
BR5 (lined one side)**

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element

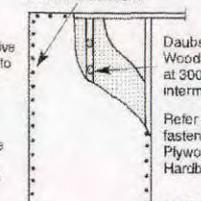
32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element



BR6 (lined both sides)

Daubs of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

32mm Gib® Braceline screws or 30mm Gib® Braceline clouts and washers at 150mm centres to perimeter of braced element



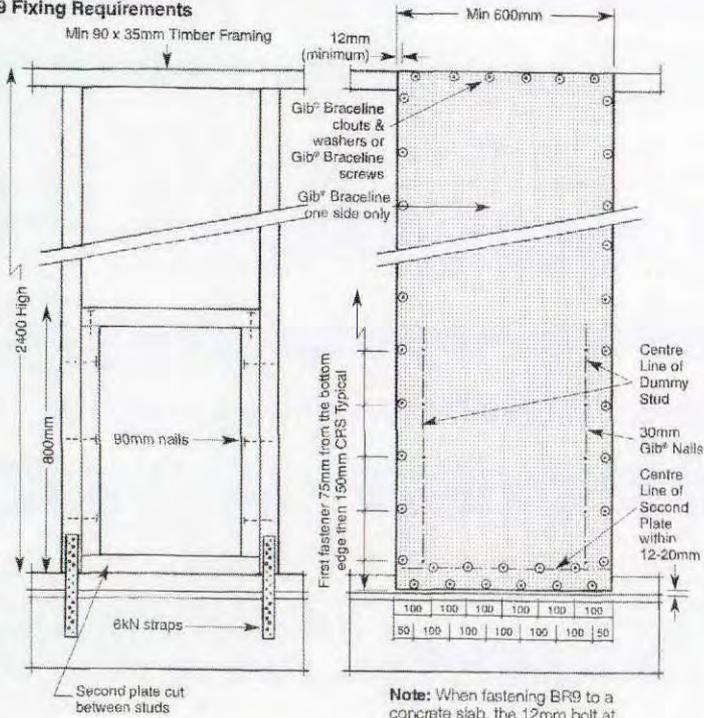
**BR7 (lined both sides)
BR8 (lined both sides)**

Daubs of Gib® Fix Wood Bond adhesive at 300mm centres to intermediate studs

Refer page 12 re fastener details for Plywood (BR7) Hardboard (BR8)

Note: If the length of the braced element using systems BR4, BR5, BR6, BR7 and BR8 exceeds 1.2m, then the sheet edges within the element are secured with single screws or nails at 300mm centres.

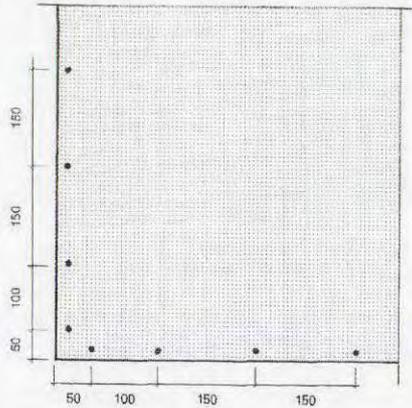
BR9 Fixing Requirements



Note: When fastening BR9 to a concrete slab, the 12mm bolt at each end of the element passes through both bottom plates.

IMPORTANT Corner Fastening Details

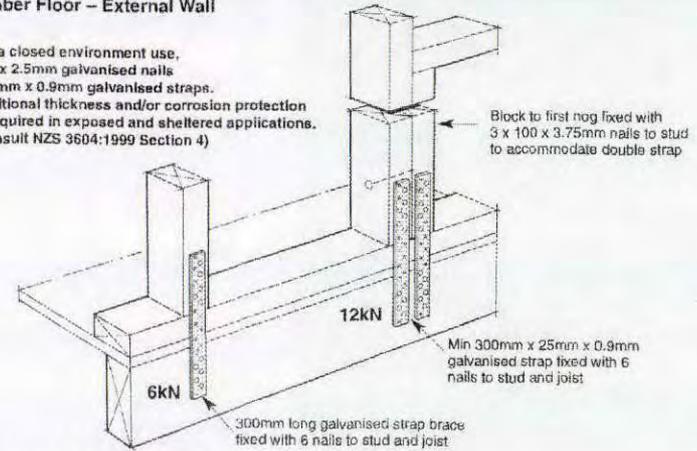
This pattern applies to ceiling diaphragms and to all wall bracing elements except BR9.



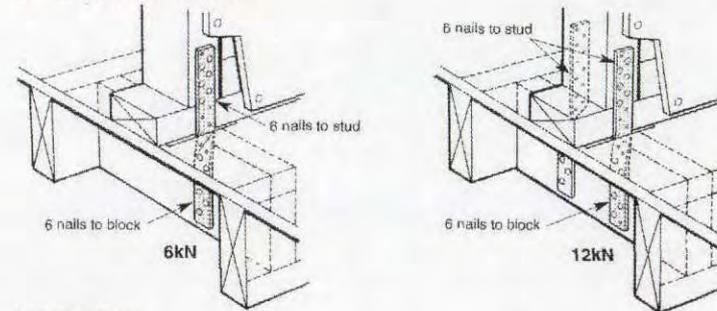
Hold-Down Straps

Timber Floor – External Wall

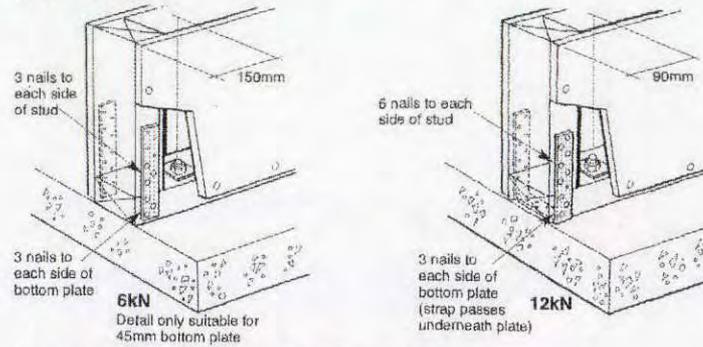
For a closed environment use,
 • 30 x 2.5mm galvanised nails
 • 25mm x 0.9mm galvanised straps.
 Additional thickness and/or corrosion protection is required in exposed and sheltered applications. (Consult NZS 3604:1999 Section 4)



Timber Floor – Internal Wall

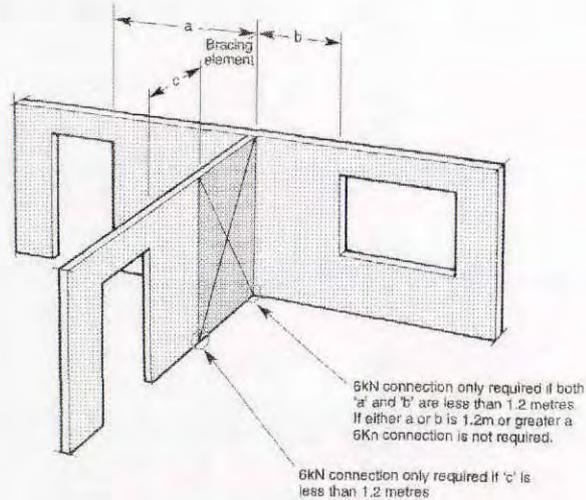


Concrete Floor



6kN Connections – UL1, UL2, BR4, BR5, BR7, BR8 & BR9
 12kN Connections – BR6

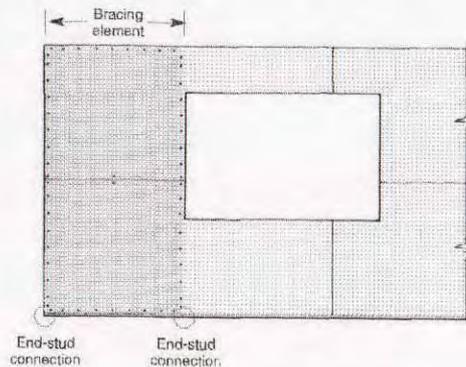
Hold-Down Strap Placement



Note: Where 12kN connections are specified (BR6) they must be installed at both ends of the bracing element in all cases.

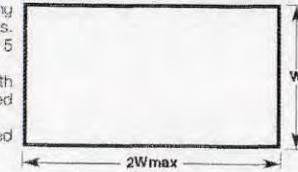
Horizontal Fixing (BR4, 5, 6, 7, 8, 9)

Gib® Braceline linings in systems BR4, 5, 6, 7, 8, 9 may be fixed horizontally when linings extend under/over door or window openings. Gib® Braceline fasteners are provided around the perimeter of the bracing element.



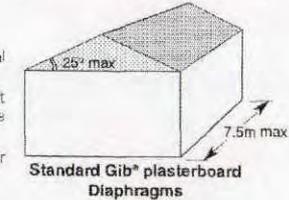
Ceiling Diaphragms

Gib® ceiling diaphragms are strong and stiff horizontal bracing elements which effectively transfer loads over large distances. They may be used to space bracing lines further apart than 5 metres (single top plate), or 6 metres (double top plate). A ceiling diaphragm may be square or rectangular. Its length shall not exceed twice its width. The width being measured horizontally between supporting walls. Ceiling diaphragms under light and heavy roofs are required to comply with NZS3604:1999.



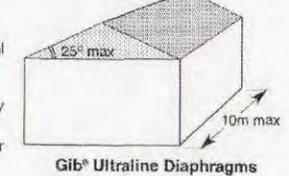
Limitations for 10mm or 13mm Gib® Standard plasterboard Ceiling Diaphragms

- Diaphragms not steeper than 25 degrees to the horizontal shall not exceed 7.5 metres in length.
- 10mm or 13mm Gib® Standard plasterboard is fastened at 150mm centres to the boundary members around the entire perimeter of the diaphragm.
Fasteners - 32mm x 6g Gib® Grabber drywall screws or 30mm x 2.8mm Gib® Nails.



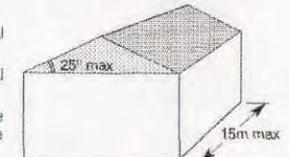
Limitations for 10mm or 13mm Gib® Ultralite Ceiling Diaphragms

- Diaphragms not steeper than 25 degrees to the horizontal shall not exceed 10 metres in length.
- Gib® Ultralite is fastened at 150mm centres to the boundary members around the entire perimeter of the diaphragm.
Fasteners - 32mm x 6g Gib® Grabber drywall screws or 30mm x 2.8mm Gib® Nails.



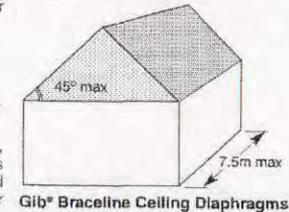
Gib® Braceline Ceiling Diaphragms

- Diaphragms not steeper than 25 degrees to the horizontal shall not exceed 15 metres in length.
- Diaphragms not steeper than 45 degrees to the horizontal shall not exceed 7.5 metres in length.
- Gib® Braceline is fastened at 150mm centres to the boundary members around the entire perimeter of the diaphragm.
Fasteners - 32mm Gib® Grabber Braceline screws or 30mm Gib® Braceline nails and washers.



General Fixing Requirements for Gib® Ceiling Diaphragms

- Linings shall be installed over the entire area of the diaphragm.
- Fastening shall be no less than 12mm from sheet edges.
- Sheets shall be supported by framing members (e.g., ceiling battens) spaced at no more than 450mm centres for 19mm Gib® Standard, 10mm Gib® Ultralite and Gib® Braceline and at no more than 600mm centres for 13mm Gib® Standard and 13mm Gib® Ultralite.
- Sheets within the diaphragm area may be fastened and finished conventionally in accordance with the publication entitled, "Gib Living Solutions Site Guide" 1999. All joints shall be paper tape reinforced and stopped. It is recommended that sheet butt joints are formed off framing using Gib® back-blocking.
- Full width sheets with a length not less than 1800mm shall be used at the ends of the diaphragm. In the middle third of the diaphragm the sheet width may be reduced.
- Openings are allowed within the middle third of the diaphragm's length and width. Fixing of sheet material to opening trimmers shall be at 150mm centres. Neither opening dimension shall exceed a third of the diaphragm width. Larger openings, or openings in other locations, require specific engineering design.



Note: See Corner Fastening Detail, page 16.

Ceiling Diaphragms - Steel Battens

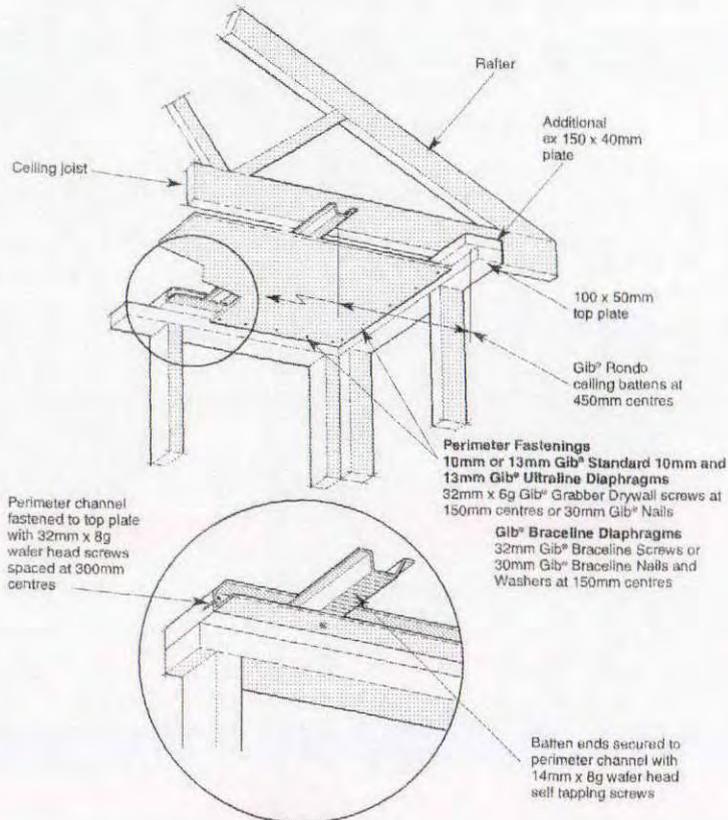
Steel Battens

The Gib® Rondo and USG DONN Screwfix (FC37 and FC50) battens may be used to construct Gib® Standard, Gib® Ultralite and Gib® Braceline ceiling diaphragms

- The battens shall be spaced at 450mm centres maximum for 10mm Gib® Standard, 10mm Gib® Ultralite and Gib® Braceline and at no more than 600mm centres for 13mm Gib® Standard and 13mm Gib® Ultralite. The battens are fastened through both flanges directly to the ceiling framing with 32mm x 8g Wafer Head screws.
- A steel perimeter channel is required at the perimeter of the diaphragm. The channel shall be fastened to the top plate with 32mm x 8g Wafer Head screws spaced at 300mm centres maximum.
- The linings are fastened to the perimeter channel at 150mm centres maximum with 25mm x 6g self tapping screws
- Within the diaphragm area sheets may be fastened as described in "General Fixing Requirements for Gib® Ceiling Diaphragms" (page 19).

Alternative Double Top Plate Detail

- Alternatively, should an additional top plate (ex 150 x 40mm) be used, Gib® Rondo steel battens (35mm deep) shall be installed as detailed below.



Notes

RECEIVED

13 OCT 2008

Application Form

Form 2, Section 33 & 45 of the Building Act 2004

South Taranaki District Council
Private Bag 902, Hawera

Telephone: 06 278 0555 or 0800 111 323

Facsimile: 06 278 8757



- Building or Relocation Consent
- Project Information Memorandum

1. Applicant Details

1a. I am the Property Owner Lessee Agent

1b. Name Fairfax Aluminium 8/10/08

1c. Postal Address P.O. Box 595 Hawera


 APP 080848

1d. Contact Numbers
 Phone 02788991 Mobile Fax

1e. Email

1f. Builder (Name & Address)
 Phone Mobile Reg No.

Plumber (Name & Address)
 Phone Mobile Reg No.

1g. Drainlayer (Name & Address)
 Phone Mobile Reg No.

Property Owner Details (if different from Applicant)

1h. Name M. M Drought

1i. Postal Address 24A Manawapu Road Hawera

1j. Contact Numbers
 Phone Mobile Fax

Property Details

1k. Site Address 24A Manawapu Road Hawera

1l. Legal Description Val 1227072111 - 1m. Rapid Number

2. The Project

2a. Type of work New building Alteration Log fire
 Plumbing & drainage only Relocation Addition
 Demolition/Removal Re-pile existing building

2b. Category of work Residential Accessory Building Farm Building
 Commercial/Industrial/Community Replacement or upgrade of septic tank

2c. Detailed description of the Development/Project
Close inbetween Brick Pillars - Wind Break

2d. Total floor area affected by building work: 23 m²

2e. The completed building will be: Single storey, single unit building Multi-storey, or multi-unit building
 Number of units: Number of storeys:

2f. Intended life of the building Indefinite but not less than 50 years Less than 50 years
 please specify number of years

2g. Estimated value of the building work (including GST) \$ 12500.00

3. Building Consent - Do not fill in this section if the application is for a PIM only

The following plans and specifications are attached to this application:

- Three sets of plans (at least one in A3) drawn to a recognised metric scale; include a north arrow, in black ink (not pencil or red pen). Two sets of specifications and other documentation
- Site / location plan (clearly showing distances to the site's boundaries)
- Floor plan
- Foundation plan
- Bracing design and calculations
- Manufacturer's specifications
- Elevations
- Cross sections and building design details
- Specific engineering design
- Plumbing and drainage design
- Other - please specify

4. Compliance with New Zealand Building Code - Do not fill in this section if the application is for a PIM only

(Refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications. If not applicable, write N/A)

Clause Tick relevant building code clauses	Means of Compliance	Clause Tick relevant building code clauses	Means of Compliance
<input type="radio"/> B1 Structure	B 1-1	<input type="radio"/> F8 Signs	NA
<input type="radio"/> B2 Durability	B 2-1	<input type="radio"/> G1 Personal Hygiene	u
<input type="radio"/> C1 Outbreak of fire	NA	<input type="radio"/> G2 Laundering	u
<input type="radio"/> C2 Means of escape	NA	<input type="radio"/> G3 Food preparation and prevention of contamination	u
<input type="radio"/> C3 Spread of fire	NA	<input type="radio"/> G4 Ventilation	G 4-1 G 4-3/1
<input type="radio"/> C4 Structural stability during fire	NA	<input type="radio"/> G5 Interior Environment	NA
<input type="radio"/> D1 Access routes	NA	<input type="radio"/> G6 Airborne and impact sound	NP
<input type="radio"/> D2 Mechanical installations for access	NA	<input type="radio"/> G7 Natural Light	G 7-1 G 7-3-2
<input type="radio"/> E1 Surface water	NA	<input type="radio"/> G8 Artificial Light	NA
<input type="radio"/> E2 External moisture	NA	<input type="radio"/> G9 Electricity	1
<input type="radio"/> E3 Internal moisture	E 3-1	<input type="radio"/> G10 Pipes services	1
<input type="radio"/> F1 Hazardous agents on signs	NA	<input type="radio"/> G11 Gas as an energy source	u
<input type="radio"/> F2 Hazardous building materials	NA	<input type="radio"/> G12 Water supplies	u
<input type="radio"/> F3 Hazardous substances and processes	NA	<input type="radio"/> G13 Foul water	u
<input type="radio"/> F4 Safety from falling	NA	<input type="radio"/> G14 Industrial liquid waste	u
<input type="radio"/> F5 Construction and demolition hazards	NA	<input type="radio"/> G15 Solid waste	u
<input type="radio"/> F6 Lighting for emergency	NA	<input type="radio"/> H1 Energy efficiency	u
<input type="radio"/> F7 Warning systems	NA		

If you need more space to detail how you propose to comply with the building code, please attach a separate sheet.

5. Project Information Memorandum (PIM) - Do not fill in this section if the application is for a Building Consent only

- 5a. The project involves:
- Land undergoing subdivision, where title has not yet been issued
 - Alterations to land contours
 - New or altered connections to public utilities (water / stormwater / sewer)
 - New or altered locations and/or external dimensions of buildings

- Building work over, or adjacent to, any road or public place
- New or altered access for vehicles
- Disposal of stormwater and wastewater
- Other matters known to the applicant that may require authorisations from the Council

please specify:

6. COMPLIANCE SCHEDULE APPLICATION FORM - Do not fill in this section if the application is for a PIM only

- There are no specified systems in the building - Proceed to section 7
- The specified systems for the building are indicated below (Please tick)

SS1	Automatic systems for fire suppression (for example sprinkler systems)	SS10	Building maintenance units providing access to exterior and interior walls of buildings
SS2	Automatic or manual emergency warning systems for fire	SS11	Laboratory fume cupboards
SS3	Electromagnetic or automatic doors or windows	SS12	Audio Loops or other assistive listening systems
SS4	Emergency lighting systems	SS13	Smoke control systems
SS5	Escape route pressurisation systems	SS14/1 SS14/2	Emergency Power systems for or Signs relating to a specified system in any of specified systems 1-13
SS6	Riser mains	SS15 SS15/2 SS15/4	Other fire safety systems or features - Final Exits/Mean of escape from fire - Signs for communicating information intended to facilitate evacuation
SS7	Automatic back-flow preventers connected to a potable water supply	CS14	Safety Barriers
SS8	Lifts, escalators, travelators, or other systems for moving people or goods within buildings	CS15	Access and facilities for disabled
SS9	Mechanical ventilation or air conditioning systems	CS16	Fire Hose Reels

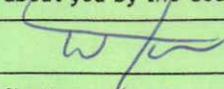
7. Applicant's Declaration

I understand that as the applicant, the Council will send all invoices to me, and all correspondence related to the application will be made to me.

I confirm that I have read and understood the Privacy Statement and that the information provided on the Application Form is true and correct.

Privacy Statement

Information on these forms is required to be provided under the Acts, Regulations and bylaws administered by the Council and is required to process your application. This information has to be made available to members of the public, including business organizations. In appropriate circumstances, it may also be made available to other units of the Council, Council's approved contractors, Department of Building and Housing, Building Research Association of NZ, Statistics NZ and other government agencies. Under the Privacy Act 1993, you have the right to access the personal information held about you by the Council and you can also request that the Council correct any personal information it holds about you.

 8 / 10 / 08

Signature

Date

Wayne Jones - FairView Aluminium

Name (print clearly)



Code Compliance Certificate

Form 7, Section 95, New Zealand Building Act 2004

Private Bag 902
Hawera 4640
Phone: 06 278 0555
Freephone: 0800 111 323
Fax: 06 278 8757
Website: www.stdc.co.nz

Owner

M J Drought, M M Drought
24A Manawapou Road
Hawera 4610

Project

Building Consent No	BC080848
Consent Issue Date	31/10/2008
Description	Create Windbreak: Close in Pillars of Dwelling
Intended Life (Years)	Specified as 30
Estimated Value	\$ 12,500.00
Location	24A Manawapou Road Hawera 4610
Applicant	Fairview Aluminium
Legal Description	Lot 2 DP 354172
Valuation No	1227072111

Signed for and on behalf of the Council:

Name: Owen Steer *P.A. [Signature]*
Senior Building Control Officer

Date: 16/09/2009