

Michael Reid Ltd

SPECIFICATION of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

NEW DECK

TENNET NEW DECK

113 KING EDWARD ST, MOTUEKA, New Zealand

Project Ref: 18014

Printed: 29 October 2014

Specification built using masterspec software
Masterspec ID: 106387; Version ID: 19472

masterspec

Tasman District Council	
BUILDING CONSENT AUTHORITY	
APPROVED DRAWINGS	
Consent Number BC	145738
Signed	
Date	20/11/2014
ALL WORK IS TO COMPLY WITH THE NZ BUILDING CODE DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL	

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1210 PROJECT.

1. GENERAL

1.1 PROJECT

Street address:	113 King Edward St Motueka
Legal description:	Part 3 sect 177 DP 2616 , C.T. NL 94/141
Site area:	1012 m2
Project type:	Addition
Intended use:	Single residential building
Intended life:	Indefinite but not less than 50 years

1.2 PROJECT DESCRIPTION

THE PROJECT INVOLVES THE REMOVAL OF THE EXISTING DECK AND THE REPLACEMENT WITH A NEW DECK OF SLATED TIMBER DECKING . A NEW ALUMINIUM POWDER COATED BALUSTRADE SYSTEM WITH GLAZED PANEL. WIDTH IS 1.88 PLUS A CANTILEVER OF 450MM SUPPORTING POSTS ARE TO BE INCORPORATED IN THE EXISTING PLANTING/ LANDSCAPING SO AS NO TO AFFECT THE EXISTING SEALED DRIVEWAY WHERE POSSIBLE . AT THE STREET END OF THE DECK , THE DECK LINES UP FLUSH WITH THE GABLE END AT THE OTHER END ,THE DECK FINISHES SHORT OF THE FINAL POST IN ORDER TO ALLOW FOR A PRACTICAL RETURN OF BALUSTRADING. MAIN BEAM AND POST ARE ENGINEERED AND TREATED TIMBER . POSTS SET 1200MM INTO CONCRETE HAVE THEIR INDIVIDUAL BRACING COMPONENT WHICH DOES AWAY WITH THE NEED FOR DIAGONAL BRACING.

1.3 CATEGORY AND LBP REQUIREMENT

Category 1:

- Single household dwellings with low- or medium-risk envelope design

Category 2

- Single household dwellings with high-risk envelope design, or other buildings with a building height of 10m or less.

Category 3

- Building 10m or greater in building height, except single household dwellings.

Any site license LBP's shall have a minimum:

Site license in area of practice 1

Bricklaying and Blocklaying 1 : Brick / masonry veneer

Bricklaying and Blocklaying 2: Structural masonry

Carpentry

External Plastering 1: Solid plastering

External Plastering 2: Proprietary Plaster Cladding Systems

Foundations 1: Concrete foundation walls and concrete slab-on-ground

Foundations 2: Concrete or timber pile foundations

Roofing 1: Concrete or clay tile roof

Roofing 2: Profiled metal roof and/or wall cladding

Roofing 3: Metal tile roof

Roofing 4: Roof membrane

Roofing 5: Torch on roof membrane

Roofing 6: Liquid membrane roof

Roofing 7: Shingle or slate roof

1.4 OWNER

Name:	Elizabeth Tennet
Mailing address:	POBox 5893 lambton Quay Wellington
Telephone:	04 4604463 0272950928
Email:	elizabeth@clca.co.nz

1.5 DESIGNER

Name:	Michael reid Ltd
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1.6

CONTRACTOR

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1211 DOCUMENTATION

1. GENERAL

1.1 DRAWINGS

Number	Revision	Title
01	~	SITE PLAN
02	~	EXIST NEW PLANS
03	~	CROSS-SECTIONS
04	~	ELEVATIONS
05	~	DETAILS
~	~	~
~	~	~
~	~	~
~	~	~

1.2 OTHER DOCUMENTS ADDITIONAL INFO A4 FOLDER

1.3 PRODUCER STATEMENTS PROLAM, JURALCO VIKING BALUSTRADING

1.4 MANUFACTURERS LITERATURE PROLAM, JURALCO VIKING BALUSTRADING

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1213 SELECTIONS

1. GENERAL

The following selections are to be read in conjunction with the related work sections, where they are available, and the general sections.

2. SITE

<< 2100 DEMOLITION WORK >>

2.1 DEMOLITION ITEMS FOR REUSE

See clause 2.2 below

2.2 DEMOLITION ITEMS FOR RETURN TO THE OWNER

Remove existing cantilevered joist /decking and balustrading and store as required by owner

<< 2310 PILE FOUNDATIONS >>

2.3 FOOTINGS TO PROLAM H5 POSTS

Form footings according to Prolam footing information and as shown on the drawings sheet 03

3. STRUCTURE

4. ENCLOSURE

<< 4160 DAMP-PROOFING, UNDERLAYS AND RIGID AIR BARRIERS >>

There is no work section specification relating to the following selections

4.1 WALL UNDERLAY/ROOF UNDERLAY

Brand/Type: Thermakraft / Watergate Plus

<< 4220 WALL CLADDING >>

4.2 CLADDING

Brand/Type: James Hardie Frontier Woodgrain to match existing hardiplanks

Fixings: ~

Jointers: Upvc

Finish: Paint Finish : Resene Lumbersider (low sheen) 2 coats

<< 4337 TIMBER & PLYWOOD, DECKING & ROOFING >>

4.3 TIMBER SPACED BOARD DECKING

Brand/size: 90mm x 32mm

Species/grade: Radiata pine, dressed, Treated H3.2 CCA (preservative code 01 or 02)

Textured face: up

<< 4820 FLASHINGS >>

There is no work section specification relating to the following selections

4.4 FLASHINGS - GENERALLY

Type: coloursteel

4.5 FLASHINGS - CONCEALED

Type: coloursteel

5. INTERIOR

6. FINISH

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<< 6700 PAINTING >>**6.1 EXTERIOR PAINTING**

Walls Resene Lumbersider (low sheen) 2 coats
 Timber joinery: Resene Quickdry waterbourne Primer Undercoat, Resene Lumbersider (low sheen) 2 coats

7. SERVICES**<< 7700 ELECTRICAL >>****7.1 ELECTRICAL OUTLETS AND SWITCHES**

Brand/type/reference: External P/Point - located as directed by owner
 Brand/type/reference: Relocated existing wiring from heat pump that is currently underneath the existing Deck

7.2 SMOKE ALARMS

Brand/type/reference: Domestic battery type with Hush Button and tester button

8. EXTERNAL**<< 8000 LANDSCAPE >>**

There is no work section specification relating to the following selections

8.1 DRIVEWAY

Type/finish: Repair damage to Driveway/footpath paving/sealing and kerbing

8.2 PATHS

Type/finish: Repair damage to Driveway/footpath paving/sealing and kerbing



3800 TIMBER FRAMING

1. GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

Use experienced competent carpenter familiar with the materials and techniques specified. Work to be carried out by or supervised by the appropriate LBP.

2. PRODUCTS

2.1 TIMBER FRAMING GENERALLY

Species, grade and level of treatment to [NZBC B2/AS1](#), [NZS 3602](#), tables 1 to 3 **Requirements for wood-based building components**..., and moisture content to [NZS 3602](#), table 4 **Allowable moisture content**..... Structural Grade (SG) to [NZS 3604](#), [NZS 3622](#) with properties to [NZS 3603](#).

2.2 ENGINEERED TIMBER

Utilise Prolam engineered beam and posts as noted on the drawings

2.3 ACCESSORIES

Damp-proof course:	High impact embossed polyethylene
Stud straps	Polypropylene tape run horizontal at 300mm centres over flexible wall underlay, for drained cavities with stud spacings greater than 450mm.
Nails, bolts and screws:	Steel, stainless steel, galvanized steel of pattern to suit the location and to BRANZ BU 519: Fasteners selection. To NZS 3604 , 4 Durability and NZBC E2/AS1 .
Nail plates connectors:	Stainless steel and/or galvanized steel toothed or nailed plates to the plate manufacturer's design for the particular locations as shown on the drawings and to NZS 3604 , 4 Durability . Galvanized steel and stainless steel connectors and brackets to the connector manufacturer's design for locations shown on drawings and to NZS 3604 , 4 Durability and NZBC E2/AS1
Corrosion risk	For exterior timber, timber in damp areas and timber subject to occasional wetting, use only stainless steel (or equivalent) fixings and connectors, when the timber is treated with; Copper Azole (CuAz, Preservative code 58), Alkaline Copper Quaternary (ACQ, Preservative code 90), Micronise Copper Azole (code 88) or Micronised Copper Quaternary (code 89).

3. EXECUTION

3.1 ATTENDANCE

Provide and fix blocks, nogs, openings and other items as required by others.

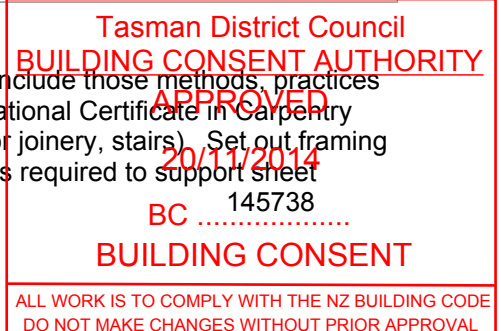
3.2 MOISTURE CONTENT

Maximum allowable moisture content to [NZS 3602](#), table 4 **Allowable moisture content**..., for framing supporting interior linings:

Framing at erection	24%
Framing at enclosure	20%
Framing at lining	16%

3.3 EXECUTION GENERALLY

To [NZS 3604](#) except as varied in this specification. To include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs). Set out framing in accordance with the requirements of [NZS 3604](#) and as required to support sheet linings and claddings.



- 3.4 **INSTALL SUB-FLOOR FRAMING**
Frame up off foundation walls and piles, all fabricated, fastened and braced to [NZS 3604](#), **6 Foundation and subfloor framing**.
- 3.5 **INSTALL FLOOR, WALL AND ROOF FRAMING**
Floors and bottom plates framed and fastened to [NZS 3604](#), **7 Floors**. Frame walls to required loading and bracing complete with lintels, sills and nogs, all fabricated and fastened to [NZS 3604](#), **8 Walls**. Frame roof to required loading and bracing complete with valley boards, ridge boards and purlins to [NZS 3604](#), **10 Roof framing**. Design and fit roof trusses complete with anchorage. All fabricated and fastened to [NZS 3604](#), **9 Posts**, and [NZS 3604](#), **10 Roof framing**.



4220 WALL CLADDING

1. GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work using persons competent and experienced in the trade.

2. PRODUCTS

2.1 FIBRE CEMENT WEATHERBOARD

Cellulose cement autoclaved boards.

2.2 TIMBER FASCIAS AND BARGE BOARDS

As selected, or radiata pine to [NZS 3631](#) for grading and to [NZS 3602](#), table 2 **Requirements for wood-based building components...**, for selection and treatment.

2.3 ACCESSORIES

Wall underlay:	Breather type, waterproof.
Rigid Air Barriers:	Proprietary rigid sheet pre-cladding systems.
Jointers:	To suit cladding type and thickness.
Nails, screws, fastenings:	Metal, size and pattern, to cladding manufacturer's requirements and complying with the relevant aspects of NZS 3604 , section 4: Durability and E2/AS1.

3. EXECUTION

3.1 MOISTURE CONTENT

Maximum allowable moisture content to [NZS 3602](#), table 4 **Allowable moisture content....**

3.2 EXECUTION GENERALLY

To [NZBC E2/AS1](#) except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

3.3 INSTALL WALL UNDERLAY/RIGID AIR BARRIER

Fix to the manufacturer's requirements. Refer to 1213 SELECTIONS for type

3.4 CAVITY BATTENS OR JAMB BATTENS

As specified in the section 3800 TIMBER FRAMING, to suit the selected wall cladding and construction type.

3.5 INSTALL FIBRE CEMENT WEATHERBOARD

Install level, true to line and face, to the manufacturer's requirements and [NZBC E2/AS1](#), 9.5 **Fibre cement weatherboards.**

3.6 INSTALL EXTERIOR TIMBER FINISHINGS

Install timber fascias, barge boards, facings, beads, trim and enclosures level, true to line and face, with all end grain sealed and joints mitred.

3.7 INSTALL FLASHINGS

Install flashings, covers and soakers as detailed on the drawings and to [NZBC E2/AS1](#) 4.0 **Flashings.**

3.8 USE OF SEALANTS

Selection and use of sealants to follow BRANZ BU 441: Sealed joints in external claddings - 2. Sealants.

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3.9

COMPLETE

Complete all flashings, finishings and trim so the cladding system is completely weathertight.



4337 TIMBER & PLYWOOD, DECKING & ROOFING

1. GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

2. PRODUCTS

2.1 TIMBER SPACED BOARDING FOR EXTERIOR DECKS

Selected radiata pine, treated to H3.2 to [NZS 3602](#), table 2A. Dressed four sides and with arrises.

2.2 FIXINGS FOR DECKING

Galvanised 60mm X 3.15mm annular grooved jolt head nails for up to 21mm thick boards, 75mm nail length for boards over 21mm.

Use stainless steel nails for Exposure Zones D & E, refer to section 1212 COMPLIANCE for project zone.

3. EXECUTION

3.1 LAY TIMBER DECKING

Drill for all fixings. Stagger end joints. Space boards a minimum of 2mm apart in general conditions, or minimum 3mm apart if boards are likely to swell after fixing. Leave a 12mm minimum gap between the exterior wall and the adjacent timber slat. Fix using annular grooved jolt head nails, heads driven flush with the board surface.



6700 PAINTING

1. GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 QUALIFICATIONS

Carry out work using competent and experienced painters.

1.2 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety in Employment Act 1992 and if elimination or isolation is not possible, then minimise the hazards in this work. Refer to OSH publication, Repainting lead based paints, for the required procedures and precautions when treating or removing lead based paint, burning or sanding off paint, or using solvent based paint removers.

1.3 SELECTIONS

Confirm all selections, colours and finishes with the owner.

2. PRODUCTS

2.1 PAINT

As selected and to the paint manufacturer's standards for exterior and/or interior primers, undercoats, sealers, stains, clear coatings, solvent-borne and water-borne paints.

2.2 GAP FILLERS

Linseed oil, putty, plastic wood, wood filler or plastic filler, to suit and to match the surface being prepared.

3. EXECUTION

3.1 INSPECT SURFACES

Inspect surfaces being painted and report to the owner any that will not, after the preparatory work laid down by the paint manufacturer, allow work of the required standard. Confirm that all areas have adequate lighting and are sufficiently free of other construction activities to enable painting work to proceed.

3.2 PROTECT

Cover up adjoining surfaces and areas liable to damage or over-painting.

3.3 REMOVE HARDWARE

Remove hardware and door/window furniture and replace on completion. Do not paint over permanently attached hinges, or any hardware items which cannot be removed.

3.4 PRIMING AND SEALING

Ensure that priming and sealing work needed before or during construction is carried out when required.

3.5 ENVIRONMENTAL CONDITIONS

Carry out work within acceptable temperature and humidity limits, with timber dry, all to the requirements of the paint manufacturer.

3.6 SHARP EDGES, CRACKS AND HOLES

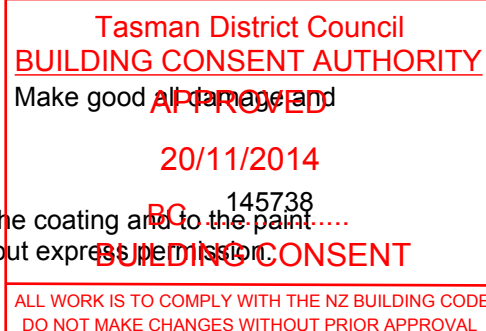
Repair as required by the paint manufacturer.

3.7 PREPARE SURFACES

Prepare surfaces as required by the paint manufacturer. Make good all damage and defects.

3.8 PAINT APPLICATION

Apply paint by brush and/or roller to suit the location of the coating and to the paint manufacturer's requirements. Do not spray on site without express permission.



- 3.9 **MANUFACTURER'S MANUALS**
Refer to the paint manufacturers' manuals and follow their preparation, sequence and application requirements applying to each system. Ensure all paint coats in any system are supplied by the same manufacturer.
- 3.10 **SCUFF BETWEEN COATS**
Scuff between all coats to remove any dust pick-up, protruding fibres and coarse particles.
- 3.11 **FINISHED PAINT SURFACES**
Finished paint surfaces to show uniformity of gloss and colour, with the correct thickness for each coat, and freedom from painting defects. Ensure finished work is clean and free of any disfigurement.
- 3.12 **CLEAN**
Clean adjoining surfaces, glass and fittings of any paint contamination.
- 3.13 **REFIT HARDWARE**
Refit hardware without damage to the hardware or the adjoining surfaces.



7700 ELECTRICAL

1. GENERAL

Refer to 1213 SELECTIONS/drawings for specific product, material, accessories and finish selections.

1.1 COMPLY

Comply with the Electricity (Safety) Regulations 2010, [AS/NZS 3000](#) for listed and prescribed work and with the NUO's requirements. Apply for the service connection. Arrange for the required inspections of listed work. Pay all fees.

1.2 QUALIFICATIONS

Carry out work by or under the direct supervision of an electrical licensed supervisor under the Electricity (safety) Regulations 2010.

1.3 ELECTRICAL CERTIFICATE OF COMPLIANCE

Provide, prior to connection, a Certificate of Compliance (CoC) as required by the Electricity (Safety) Regulations 2010, to the owner and if required to the NUO. Allow the NUO to view before the meter installation, listed work inspection, polarity check and livening of supply.

1.4 ELECTRICAL SAFETY CERTIFICATE

Provide an Electrical Safety Certificate (ESC), as required by the Electricity (Safety) Regulations 2010, to the owner and when required the BCA. To be provided at completion of the work, prior to Practical Completion.

1.5 SAFETY OF INSTALLATION

Before installation work commences, provide a declaration of conformity to Electrical (Safety) Regulations 2010, regulations 57 & 58

2. PRODUCTS

2.1 CABLES

Tough plastic sheathed copper conductors. Minimum sizes are indicated below. Increase these as necessary due to method of installation, cable length or load.
Lighting circuits: 1.5mm² on 10 amp MCBs for domestic construction
Power circuits: 2.5mm² on 16 amp MCBs for domestic construction

2.2 ELECTRICAL ACCESSORIES

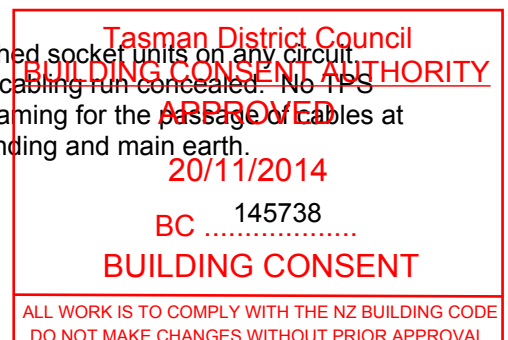
As selected and to the following details:

Switch units	Minimum 16 amp, 230 volt flush polycarbonate units. For number of switches per unit, dimmer units, neon (indicator or toggle) units, locator units and 2-way units refer to the electrical drawings.
Switched socket units:	10 amp, 230 volt flush polycarbonate 3 pin combined switch units.
Hot water system switch:	One way 20 amp switch complete with clamp for flexible PVC conduit.
Stove/range socket outlet and switch:	32 amp, 230 volt flush polycarbonate 3 pin combined switch unit, with remote isolating switch.

3. EXECUTION

3.1 CABLING

Install with a maximum of 10 light outlet units or 6 switched socket units on any circuit. Separate circuits for all electric heating appliances. All cabling run concealed. No TFS cable laid directly in concrete. Locate holes in timber framing for the passage of cables at the centre line of the timber member. Provide earth bonding and main earth.



3.2 INSTALL SWITCH AND SOCKET UNITS

Fit single and double switch units and socket units level and plumb where shown on the drawings. Install at the following heights (to the centre of the unit) unless shown otherwise on the drawings or to match existing.

Switch Units:	1000mm above floor
Socket Units:	400mm above floor
	150mm above work benches

Mount switches vertically and socket units horizontally. Label switch units which control electrical equipment by engraving on the rocker switch.

3.3 INSTALL LIGHT FITTINGS

Install selected light fittings in the locations and heights shown on the drawings and in accordance with the fitting manufacturer's requirements. Recessed fittings to [AS/NZS 3000](#), types IC-F, IC, CA-80 or CA-135 only (no clearance to insulation required for these types).

3.4 ELECTRIC POWERED FITTINGS AND EQUIPMENT

Install and wire selected fittings and equipment to the Electricity (Safety) Regulations 2010 and the individual fittings and equipment manufacturer's requirements. Refer to the drawings for required layouts and locations for equipment.

3.5 COMPLETION

Leave all fittings, lamps and tubes operational, with equipment and diffusers clean.



ADDITIONAL INFORMATION

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Additional Information

Elizabeth Tennet – New Deck – 113 King Edward St Motueka

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STANDARD NOTES.

ALL DIMENSIONS TO BE VERIFIED ON SITE PRIOR TO CONSTRUCT
ALL CONSTRUCTION TO COMPLY WITH NZS 3604:2011,
THE NZ BUILDING CODE AND THE TASMAN DISTRICT COUNCIL BYLAWS
ALL TIMBER TREATMENT TO BE TO MINIMUM STANDARDS AS SET OUT IN B2/AS1
NZBC DURABILITY CLAUSE AND NZS 3602.2003
ALL INTERNAL WALL FRAMING TO BE 90X45MM H 1.2 STUDS AT 600 MM MAX C/CS
-DWANGS AT 800MM C/CS
ALL TIMBER TO BE GRADED AS PER NZS 3631
STRESS GRADING: ALL FRAMING TIMBERS TO BE SG8 ACCORDING TO NZS
3604 ;2011 UNLESS NOTED OTHERWISE

REFER TO ALL PRODUCT MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO
INSTALLATION.



BRIEF

THE PROJECT INVOLVES THE REMOVAL OF THE EXISTING DECK AND THE REPLACEMENT WITH A NEW DECK OF SLATED TIMBER DECKING . A NEW ALUMINIUM POWDER COATED BALUSTRADE SYSTEM WITH GLAZED PANEL. WIDTH IS 1.88 PLUS A CANTILEVER OF 450MM SUPPORTING POSTS ARE TO BE INCORPORATED IN THE EXISTING PLANTING/ LANDSCAPING SO AS NO TO AFFECT THE EXISTING SEALED DRIVEWAY WHERE POSSIBLE . AT THE STREET END OF THE DECK , THE DECK LINES UP FLUSH WITH THE GABLE END AT THE OTHER END ,THE DECK FINISHES SHORT OF THE FINAL POST IN ORDER TO ALLOW FOR A PRACTICAL RETURN OF BALUSTRADING. MAIN BEAM AND POST ARE ENGINEERED AND TREATED TIMBER . POSTS SET 1200MM INTO CONCRETE HAVE THEIR INDIVIDUAL BRACING COMPONENT WHICH DOES AWAY WITH THE NEED FOR DIAGONAL BRACING.

NOTE THAT AS WITH ALL ALTERATIONS - FURTHER STRUCTURAL REQUIREMENTS MAY BECOME APPARENT ONCE THE BUILD IS UNDERWAY. NOTIFICATION TO THE DESIGNER SHALL BE MADE IN ANY SUCH OCCASSIONS TO RECTIFY THESE STRUCTURAL REQUIREMENTS.

DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATION, A4 INFORMATION AND PRODUCT INFORMATION



WIND ZONE- LOW

REFER TO CALCULATIONS AS FOLLOWING AS DETERMINED FROM NZS 3604:2011
SECTION 5 - BRACING DESIGN

ELIZABETH TENNET, 113 KING EDWARD ST, MOTUEKA
WIND ZONE = LOW

SECTION 5 – BRACING DESIGN

NZS 3604:2011

Table 5.2 – Procedure for determination of topographic class, T1 – T4

Steps	Action	Reference	Values available
1	Determine hill height and formation	Figure 5.2	Hill, Escarpment
2	Determine smoothed gradient value and class	Figure 5.2	Low to Steep
3	Determine topography	Figure 5.2	Crest / Outer
4	Determine site exposure	5.2.4	Sheltered/exposed
5	Determine topographic class	5.2.5, table 5.3	–
In this table	Gentle = Low = Mild = Moderate = Steep =	Gradient Gradient Gradient Gradient Gradient	< 0.05 0.05 < 0.1 0.1 < 0.15 0.15 < 0.2 > 0.2
		i.e. slope max.	1:20 1:10 1:6.7 1:5 1:5

Table 5.3 – Determination of topographic class

Topography	Gentle	Low	Mild	Moderate	Steep
Crest	T1	T2	T3	T4	T4
Outer	T1	T1	T2	T2	T3

All sites outside the outer and crest zones are topographic class T1 except that:

- Sites within valleys which are known to have accelerated wind flows within them because of their shape and exposed mouths shall be classed as T4.
- Sites in areas with undulations of less than 10 m in height, and gradients less than 1:20 shall be classed as T1.

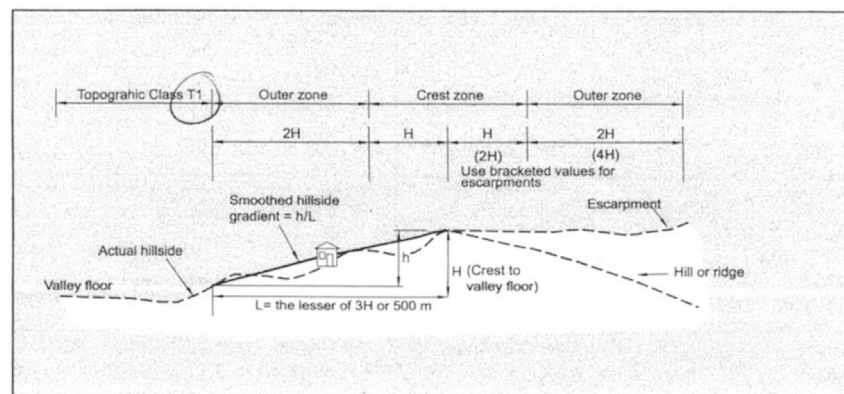


Figure 5.2 – Topography (including escarpment conditions)

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WIND ZONE contd

SECTION 5 – BRACING DESIGN

NZS 3604:2011

Table 5.4 – Determination of wind zone

Region	Ground roughness	Topographic class and site exposure							
		T1		T2		T3		T4	
		Sheltered	Exposed	Sheltered	Exposed	Sheltered	Exposed	Sheltered	Exposed
A	Urban	L	M	M	H	H	H	H	VH
	Open	M	H	H	VH	H	VH	VH	EH
W	Urban	M	H	H	VH	H	VH	EH	EH
	Open	H	VH	VH	EH	VH	EH	SED	SED

NOTE –
 Wind speeds below are the maximum ultimate limit state wind speed for each wind zone.
 L = Low wind speed of 32 m/s M = Medium wind speed of 37 m/s
 H = High wind speed of 44 m/s VH = Very high wind speed of 50 m/s
 EH = Extra high wind speed of 55 m/s
 SED = Specific engineering design (not covered by this Standard)

Winds in lee zones shall be increased as follows:
 Low wind becomes High
 Medium wind becomes Very high
 High wind, and above become SED

C5.2.6

For roof pitches below 25° the horizontal loads on the roof are small compared with the loads on the walls. For this reason the gable overhang and eaves are ignored for calculation purposes.

For steeper roofs the horizontal loads on the roof are significant and the overall roof length (including overhangs) is used for calculations.

5.2.6 Determination of wind bracing demand

The influence on the wind bracing demand of the building size and shape and location of bracing elements within the building height is incorporated in tables 5.5 to 5.7.

The overall wind bracing demand on the building shall be determined by multiplying the value obtained from tables 5.5 to 5.7 (including the factor in the notes) by the building length (for calculating bracing demand across) and width (for calculating bracing demand along), where length and width are measured perpendicular to the direction of the wind (figure 5.3). The building wall length and width shall be used where the roof pitch is 25° or less, and the roof dimensions where the roof pitch is greater than 25°.

5.2.7 Mono-pitch roofs

For buildings with mono-pitch roofs the roof height above eaves shall be taken as the difference between the lower eaves height and the roof apex.

The wind demand in BU/m in both the ALONG and ACROSS directions shall be taken as the higher of the two.

5.2.8 Roofs with hip ends

For buildings with hip roofs the ACROSS values in tables 5.5 to 5.7 shall be used to determine the bracing demand in both ALONG and ACROSS directions.

5.2.9 Wind bracing demand for decks

Wind bracing demand for decks may be ignored.

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RISK MATRIX

TENNET DECK - RISK MATRIX = 5 1/5
 - DIRECT FIX
 - FIBRE CEMENT WEATHERED

Acceptable Solution E2/AS1

EXTERNAL MOISTURE

Table 1: Definitions of risk levels
Paragraph 3.1.1, Figure 1

Risk Factor	Score(5)	Risk severity	Comments
A: Wind zone	0	Low risk	Low wind zone as described by NZS 3604
	0	Medium risk	Medium wind zone as described by NZS 3604
	1	High risk	High wind zone as described by NZS 3604
	2	Very high risk	Very High wind zone as described by NZS 3604
		Extra high risk	Extra High wind zone as described in NZS 3604(4)
B: Number of storeys	0	Low risk	One storey
	1	Medium risk	Two storeys in part
	2	High risk	Two storeys
	4	Very high risk	More than two storeys
C: Roof/wall junctions	0	Low risk	Roof-to-wall intersection fully protected (e.g. hip and gable roof with eaves)
	1	Medium risk	Roof-to-wall intersection partly exposed (e.g. hip and gable roof with no eaves)
	3	High risk	Roof-to-wall intersection fully exposed (e.g. parapets, enclosed balustrades or eaves at greater than 90° to vertical with soffit lining)
	5	Very high risk	Roof elements finishing within the boundaries formed by the exterior walls (e.g. lower ends of aprons, chimneys, dormers etc)
D: Eaves width (1)(2)	0	Low risk	Greater than 600 mm for single storey
	1	Medium risk	451–600 mm for single storey, or over 600 mm for two storey
	2	High risk	101–450 mm for single storey, or 451–600 mm for two storey, or greater than 600 mm above two storey
	5	Very high risk	0–100 mm for single storey, or 0–450 mm for two storey, or less than 600 mm above two storey
E: Envelope complexity	0	Low risk	Simple rectangular, L, T or boomerang shape, with single cladding type
	1	Medium risk	Moderately complex, angular or curved shapes (e.g. Y or arrowhead) with no more than two cladding types
	3	High risk	Complex, angular or curved shapes (e.g. Y or arrowhead) with multiple cladding types
	6	Very high risk	As for High risk, but with junctions not covered in C or F of this table (e.g. box windows, pergolas, multi-storey re-entrant shapes etc)
F: Decks(3)	0	Low risk	None, timber slat deck or porch at ground floor level
	2	Medium risk	Fully covered in plan by roof, or timber slat deck attached at first or second floor level
	4	High risk	Enclosed deck exposed in plan or cantilevered at first floor level
	6	Very high risk	Enclosed deck exposed in plan or cantilevered at second floor level or above

NOTES:

(1) Eaves width measured horizontally from external face of wall cladding to outer edge of overhang, including fascias and external gutters/spoutings.

(2) Balustrades and parapets count as 0 mm eaves.

(3) The term deck includes balconies, as described in the Definitions.

(4) For buildings in Extra High wind zones, refer to Table 3 for rigid underlay and drained cavity requirements

(5) Refer also to Table 2.

Amend 2
Jul 2005

Amend 2
Jul 2005

Amend 2
Jul 2005

Amend 2
Jul 2005

Amend 5
Aug 2011

DEPARTMENT OF BUILDING AND HOUSING

1 August 2011

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RISK MATRIX

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EXTERNAL MOISTURE

Acceptable Solution E2/AS1

Amend 5
Aug 2011

Table 2: Building envelope risk scores
Paragraph 3.1.2, Figure 1

Risk factor	Risk severity				Subtotals for each risk factor	
	LOW score	MEDIUM score	HIGH score	VERY HIGH (1) score		
Wind zone (per NZS 3604)(1)	0	0	1	2	=	0
Number of storeys	0	1	2	4	=	2
Roof/wall intersection design	0	1	3	5	=	0
Eaves width	0	1	2	5	=	1
Envelope complexity	0	1	3	6	=	0
Deck design	0	2	4	6	=	2
(Enter the appropriate risk severity score for each risk factor in the score columns. Transfer these figures across to the right-hand column. Finally, add up the figures in the right-hand column to get the total risk score.)					Total risk score for use in Table 3:	
					5	

Amend 5
Aug 2011

NOTE: (1) For buildings in Extra High wind zones, refer to Tables 1 and 3 for rigid underlay and drained cavity requirements.

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1 August 2011

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RISK MATRIX

3/
OF 3

Acceptable Solution E2/AS1

EXTERNAL MOISTURE

Table 3: Suitable wall claddings
Paragraphs 3.1.2, 7.4, 9.1.1, 9.1.7.2, 9.4.1.2, 9.4.1.3, 9.6, 9.6.1, Figure 1

Risk Score from Table 2	Suitable wall claddings(1)	
	Direct fixed to framing	Over nominal 20 mm drained cavity
Amend 5 Aug 2011		Claddings on parapets, enclosed balustrades, and in Extra High wind zones shall be installed over drained cavities (5)(6)
0 – 6	a) Timber weatherboards – all types b) Fibre cement weatherboards ✓ c) Vertical profiled metal – corrugated and symmetrical trapezoidal (3) d) Fibre cement sheet (4) (Jointed finish) e) Plywood sheet	a) Masonry veneer (2) b) Stucco c) Horizontal profiled metal (3) – corrugated and trapezoidal only d) Fibre cement – flush-finished e) EIFS
Amend 5 Aug 2011		
Amend 2 Jul 2005 Amend 5 Aug 2011	7 – 12 a) Bevel-back timber weatherboards b) Vertical timber board and batten c) Vertical profiled metal – corrugated only (3)(6)	a) Masonry veneer (2) b) Stucco c) Horizontal profiled metal – corrugated and trapezoidal only d) Rusticated weatherboards e) Fibre cement weatherboard f) Fibre cement sheet – flush and jointed finish g) Plywood sheet h) EIFS
Amend 5 Aug 2011		
13 – 20	a) Vertical profiled metal – corrugated only (3)(6)	a) Masonry veneer (2) b) Stucco c) Horizontal profiled metal – corrugated and trapezoidal only d) Rusticated weatherboards e) Fibre cement weatherboards f) Fibre cement sheet – flush and jointed finish g) Plywood sheet h) EIFS i) Bevel-back weatherboards
Amend 2 Jul 2005 Amend 5 Aug 2011		
Over 20	a) Redesign the building to achieve a lower score, or b) Specific design – The design may need changing to reduce the risk – The building consent authority may require more comprehensive details and documentation providing evidence of weathertightness – The building consent authority, designer or owner may require more inspections – A third party audit of the design may be required.	
Amend 2 Jul 2005		
Amend 2 Jul 2005		
Amend 5 Aug 2011		
NOTES: (1) The wall claddings in this table are limited to those covered in this Acceptable Solution. (2) Traditional masonry veneer as per SNZ HB 4236, with minimum 40 mm cavity. (3) Refer Figure 38 for profiles. (4) Except stucco over a fibre cement backing. (5) Claddings in Extra High wind zones require rigid underlays – refer to Paragraph 9.1.7.2 (6) Direct fix vertical corrugated steel is included as cavity construction.		

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DURABILITY – ZONE C –MEDIUM

REFER TO FIG 4.2 EXPOSURE ZONE MAP

SECTION 4 – DURABILITY

NZS 3604:2011

Table 4.1 – Protection required for steel fixings and fastenings excluding nails and screws⁽¹⁾ (see 4.4.1)

ZONES	FIXING FASTENING	ENVIRONMENT		MATERIAL
ALL ZONES	Nail plates	CLOSED AND ROOF SPACES		Continuously coated galvanized steel ⁽²⁾
	Wire dogs & bolts			Hot-dipped galvanized steel ⁽²⁾
	All other structural fixings	CLOSED		Mild steel (uncoated, non-galvanized) ⁽³⁾
ZONE D	All structural fixings	SHELTERED ⁽⁴⁾ AND EXPOSED		Type 304 stainless steel ⁽⁵⁾
ZONES B AND C	Treated timber pile connections more than 600 mm from the ground and all subfloor connections	Subfloors vented 7000 mm ² or less	SHELTERED ⁽⁴⁾	Hot-dipped galvanized steel ⁽²⁾
		Subfloors vented more than 7000 mm ²	EXPOSED	Type 304 stainless steel ⁽⁵⁾
	Treated timber pile connections within 600 mm of the ground	SHELTERED ⁽⁴⁾ AND EXPOSED		Type 304 stainless steel ⁽⁵⁾
	All other structural fixings, except fabricated brackets ⁽⁶⁾	SHELTERED ⁽⁴⁾		Hot-dipped galvanized steel ⁽²⁾
		EXPOSED		Type 304 stainless steel ⁽⁵⁾

- (1) Items described in this table are steel fasteners required to last not less than 50 years, used for joining timber, such as nail plates, bolts, brackets, wire dogs and similar, but not including nails or screws (which are described in table 4.3).
- (2) All galvanizing weights to steel shall be as given in table 4.2.
- (3) Steel fixings in timber treated with copper-based timber preservatives shall be as per 4.4.4.
- (4) "Sheltered" shall be that above a 45° line drawn from the lower edge of a projecting weathertight structure such as a floor, roof or deck. "Exposed" shall be below that 45° line. See figure 4.3(a) and (b).
- (5) Type 304 stainless steel is sufficient to comply with NZBC requirements, but may have surface rust. Type 316 may be used where appearance is a consideration but exceeds the requirements of the NZBC.
- (6) "Fabricated brackets" shall be made from 5 mm (minimum thickness) mild steel and shall be hot-dipped galvanized.

4.4.2

Galvanized steel components shall have galvanized coating masses in accordance with table 4.2.

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DURABILITY CONTD

SECTION 4 – DURABILITY

NZS 3604:2011

Table 4.2 – Galvanizing of steel components other than nails and screws (see 4.4.2)

Component	Standard	Protection required
Bolts in any location that require galvanizing (see table 4.1)	AS/NZS 4680 and AS 1214	600 g/m ² average
Nail plates used in sheltered locations Nail plates used in exposed locations	AS 1397 AS/NZS 4680	Z275 pre-galvanized sheet 390 g/m ²
Brackets used in sheltered locations Brackets used in exposed locations	AS/NZS 4680 AS/NZS 4680	390 g/m ² 600 g/m ²
Nail plates used in roof spaces	AS 1397	Z275 pre-galvanized sheet
Wire dogs in any location that require galvanizing (see table 4.1)	AS/NZS 4534	150 g/m ² (Zn + 5 % Al)

4.4.3 Nails

The materials for nails and screws shall be as given in table 4.3.

Table 4.3 – Steel items such as nails and screws used for framing and cladding (see 4.4.3)

Building location	Nail or screw use				
	Cladding that acts as bracing (50-year durability)	Non-structural cladding (15-year durability)	Framing in "Closed" areas ⁽¹⁾ including roof spaces	Framing in "Sheltered" areas ⁽¹⁾	Framing in "Exposed" areas ⁽¹⁾
Zone D	Stainless steel ⁽²⁾ or silicon bronze or protected galvanized steel ⁽³⁾	Galvanized steel ⁽⁴⁾	Mild steel ⁽⁵⁾	Galvanized steel ⁽⁵⁾	Stainless steel ⁽²⁾
Zones B & C	Galvanized steel ⁽⁴⁾	Galvanized steel ⁽⁴⁾	Mild steel ⁽⁵⁾	Galvanized steel ⁽⁵⁾	Galvanized steel ⁽⁵⁾

(1) For definitions of "closed", "sheltered", and "exposed" see table 4.1 and figure 4.3(a) and (b).
 (2) Stainless steel nails shall be minimum Type 304 and shall have annular grooves to provide similar withdrawal resistance to hot-dipped galvanized nails.
 (3) Protection of galvanized steel nails shall consist of putty and an exterior painting system consisting of a primer undercoat and 2 top coats of oil-based or acrylic paint.
 (4) Where the cladding is a corrosive timber, such as western red cedar or redwood, or is treated with copper-based ACQ or CuAz preservatives, use stainless steel⁽²⁾ or silicon bronze.
 (5) Steel fixings in timber treated with copper-based preservatives shall be as per 4.4.4.
 (6) Irrespective of the above, nails and screws shall be compatible with any fixing plate that is used with them.
 (7) Nails and screws and other fixings into piles within 600 mm of the ground shall be stainless steel.
 (8) Galvanized nails shall be hot-dipped galvanized to a minimum of 320 g/m²; galvanized screws shall be mechanically zinc plated in accordance with AS 3566: Part 2, Class 4.
 (9) Type 304 stainless steel is sufficient to comply with NZBC requirements, but may have surface rust. Type 316 may be used where appearance is a consideration but exceeds the requirements of the NZBC.

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PROLAM POST AND BEAM



Worksheet

28 October 2014

Page 1 of 8

PROLAM SUMMARY

Customer/Project: Worksheet **ELIZABETH TENNET**
Physical Address: **113 KING EDWARD ST, MOTUEKA**
Designer: michael reid, mr
Company: michael reid ltd architectural design
Postal Address: 104 white road hope, Richmond 7020
Email: michaelreid@xtra.co.nz
Snow Region: No Snow. Altitude: 0 m. Roof Snow: 0 kPa. Ground Snow: 0 kPa

Phone: 035447102
Fax: n/a

Matt Galvin Deck Bearer

Prolam Bearers Supporting Deck

Deflection	5.8 mm	Capacity	1.9 mm
End Reaction (down)	9.8 kN	End Reaction (uplift)	1.1 kN
Load Comb. (down)	1.2G + 1.5Q	Load Comb. (uplift)	0.9G + W _{uplift}
Building Type	House	Timber	Pine, Machined
Treatment	H3.2	Visual	No
Exposed	Yes	Snow Load	See above
Joist Span	1.88 m	Bearer Span	3.75 m
Bearer Type	0	Cantilever	Yes
Joist Single Span	0.45 m		

Use Prolam PL16H3 250MC — 240 x 90mm — GL16



This Specification only applies to Prolam® Branded Products

PRODUCER STATEMENT

Tasman Consulting Engineers Ltd have been engaged by Prowood to prepare span tables and charts for the PROLAM® lintels, beams and posts as presented in the PROLAM® Post and Beam Manual.

The design has been carried out using sound and widely accepted engineering principles to the requirements of AS/NZS1170:2002, NZS3603:1993 and NZS3604:2011 using the timber properties for GLB, GL12 and GL16 glue laminated timber.

David King

David King

ME(Civil) MIPENZ (No.145511) CPEng IntPE

for Tasman Consulting Engineers Limited

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PO Box 3631, Richmond, NELSON 7050

1 October 2013

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Worksheet

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PROLAM SUMMARY

Customer/Project: Worksheet **ELIZABETH TENNET**
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Designer: michael reid, mr
Company: michael reid ltd architectural design
Postal Address: 104 white road hope, Richmond 7020
Email: michaelreid@xtra.co.nz
Snow Region: No Snow. Altitude: 0 m. Roof Snow: 0 kPa. Ground Snow: 0 kPa

Phone: 035447102
Fax: n/a

Matt Galvin posts bracing

Prolam Deck Posts - bracing

Building Type	House	Timber	Radiata Pine, Machined
Treatment	H5	Exposed	Yes
Snow Load	See above	Area	21.00 sq m
Post Height	2.56 m		

Use Min. of 4 x Prolam PLP16 200MC. Use 156 BUs. — 180 x 180mm — GL16



This Specification only applies to Prolam® Branded Products

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Tasman Consulting Engineers Ltd have been engaged by Prowood to prepare span tables and charts for the PROLAM® lintels, beams and posts as presented in the PROLAM® Post and Beam Manual.

The design has been carried out using sound and widely accepted engineering principles to the requirements of AS/NZS1170:2002, NZS3603:1993 and NZS3604:2011 using the timber properties for GL8, GL12 and GL16 glue laminated timber.

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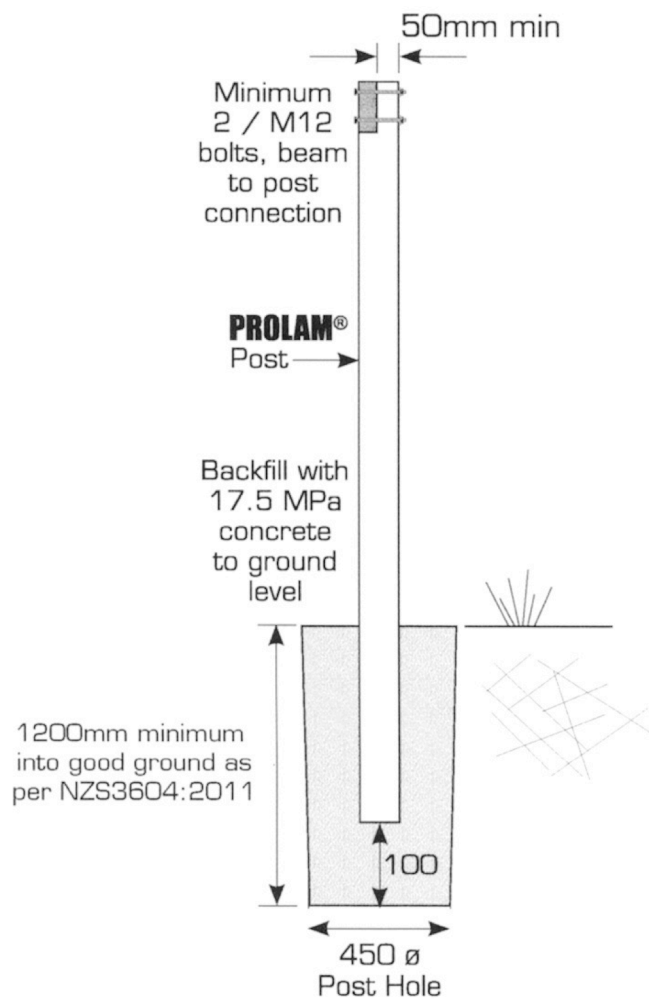
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Bracing Posts

For bracing posts of deck, provide 6 Kn connection-bearer to pile/joist to bearer (as for cantilever piles tp NZS3604:2011)



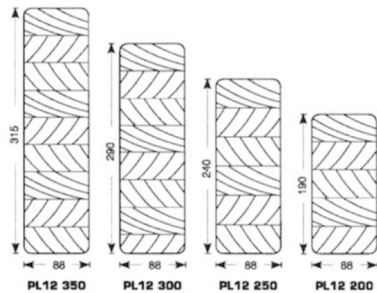
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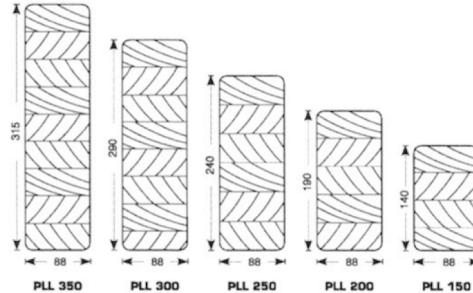


BEAM SIZES / CODES AND USES STRUCTURAL

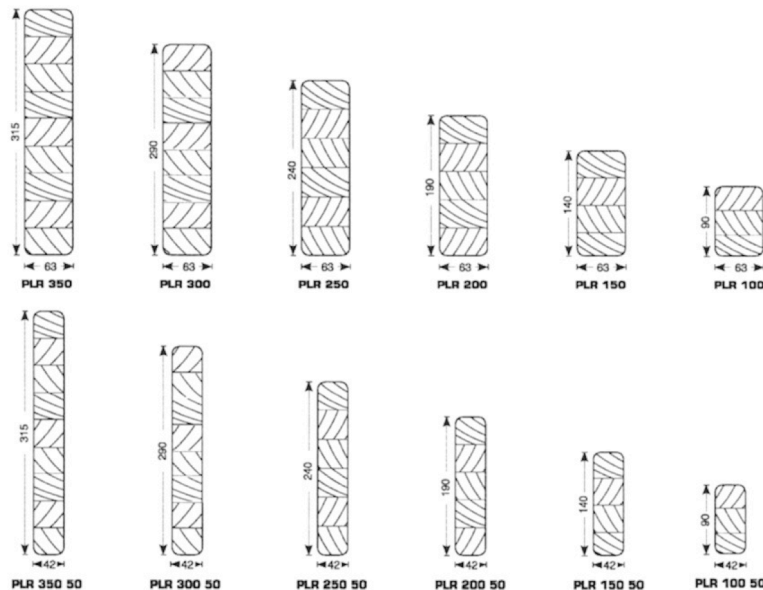
PL12 Prolam® GL12 H3.2 KD precambered. Extra high performance beam for high load, high spanning situation.



PLL Prolam® Lintel/Deck Bearer GL8 H3.2 KD precambered high performance beam using MSG B, economy beam for high load situations. Will span most garage doors.



PLR Prolam® Verandah Rafter GL8 H3.2 KD. Precambered high performance beam using MSGB, economy beam for high load situations. Excellent for above ceiling rafters, and floor joists.



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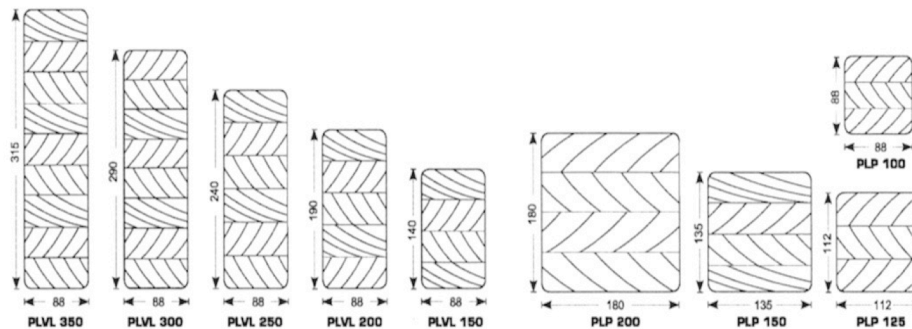
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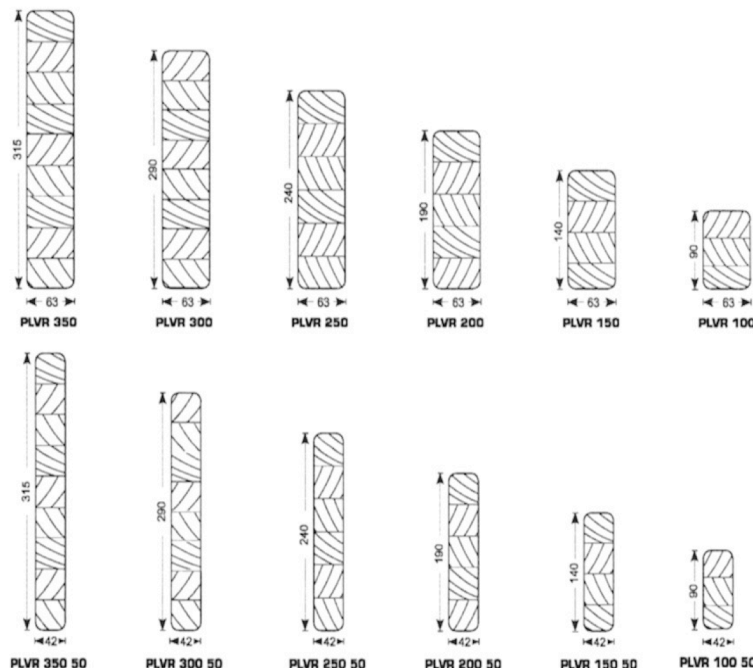
BEAM SIZES / CODES AND USES VISUAL NO 2 CLEARS

PLVL Prolam® Verandah Lintel GL8 H3.2 KD No 2 clears. Precambered high performance beam in a No 2 clear grade for high visual applications.

PLP Prolam® Posts GL8 H5 KD No 2 clears. Superior laminated posts in a No 2 clears H5 treated for inground use.



PLVR Prolam® Verandah Rafter GL8 H3.2 KD No 2 clears. Precambered high performance beam in a No 2 clear grade for high visual applications.



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TIMBER PROPERTIES

DRY USE

Characteristic Strengths and Elastic Moduli for Glulam Grades

PL Grade	Characteristic Strengths (MPa)				Elastic Moduli (MPa)	
	Bending	Tension parallel to grain	Shear in Beam	Compression parallel to grain	Short modulus of elasticity parallel to the end grain	Short duration modulus of rigidity for beams
PL 17	42	21	3.7	35	16700	1100
PL 12	25	12.5	3.7	29	11500	770
PL 8	19	10	3.7	24	8000	530

Note:

1. Higher grades (i.e. PL12, PL17) will give greater span and load carrying capability than GL8 for the same section size.

WET USE - (H3.2 treated)

Characteristic Strengths and Elastic Moduli for Glulam Grades

PL Grade	Characteristic Strengths (MPa)				Elastic Moduli (MPa)	
	Bending	Tension parallel to grain	Shear in Beam	Compression parallel to grain	Short modulus of elasticity parallel to the end grain	Short duration modulus of rigidity for beams
PL 17	33.6	16.8	2.5	28.0	13400	880
PL 12	20.0	10.0	2.5	23.2	9200	610
PL 8	15.2	8.0	2.5	19.2	6400	420

Note:

1. Higher grades (i.e. PL12, PL17) will give greater span and load carrying capability than GL8 for the same section size.

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PAINTING SPECIFICATIONS

IMPORTANT PLEASE READ!

This laminated treated product must be protected from the elements until it is sealed. Timber naturally absorbs moisture from the surrounding environment. This can cause the product to alter dimensionally. Sealing the product with a quality paint system dramatically reduces the incidence of dimensional change and increases longevity.

Recommended procedure:

1. Fill nail holes with an exterior grade woodfiller.
2. Sand back until surface is smooth and completely free from dirt and dust.
3. If painting, prime all surfaces and cut ends and joints with a good quality alkyd primer and allow drying as per paint manufacturer's instructions.
4. Apply two full coats of a premium brand acrylic or enamel topcoat.
5. If staining apply three full coats of a premium stain including cut ends and joints.
6. Product must be recoated every 2 years.

NOTE: Light colours are recommended. As timber moves with environmental changes, resin bleeding, distortion and cracking may occur.

NO WARRANTY APPLIES TO ANY PRODUCT THAT HAS NOT BEEN KEPT DRY, OR HAS NOT BEEN PAINTED AS RECOMMENDED ABOVE.

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PROLAM® products are manufactured to the requirements of AS/NZS 1328.1:1998 Glue Laminated Structural Timber, and AS/NZS 1491:1996 Finger Jointed Structural Timber under an approved quality system based on the ISO 9000 series of standards. As such if the product is used in accordance with **PROLAM®** product literature, it will meet the durability clauses of the New Zealand Building Code B2.

Subfloor Applications:

- ☒ **PROLAM®** may be used where approved practices for clearance and ventilation are used.

External Use:

- ☒ **PROLAM®** is recommended for weather exposed applications if sealed and maintained in accordance with **PROLAM®** literature.

Preservative Treatment:

- ☒ **PROLAM®** Beams are CCA H3.2 treated as defined by NZS 3640:2003, for weather exposed applications, such as verandah beams, deck bearers, and subfloor applications.
- ☒ **PROLAM®** Posts are CCA H5 treated as defined by NZS 3640:2003 for in-ground and weather exposed applications, such as deck piles, verandah posts and similar applications.

Storage of **PROLAM®**:

- ☒ To ensure **PROLAM®** remains straight and true at the time of installation, follow the below recommendations:
 1. Store under cover so that it remains dry until installation.
 2. Stack clear of the ground for good ventilation.
 3. Stack on bearers to keep flat and straight.

Branded **PROLAM®**:

- ☒ **PROLAM®** is branded for your protection. Look-alike materials may not perform to the standard of **PROLAM®**. For your protection do not accept unauthorized substitution

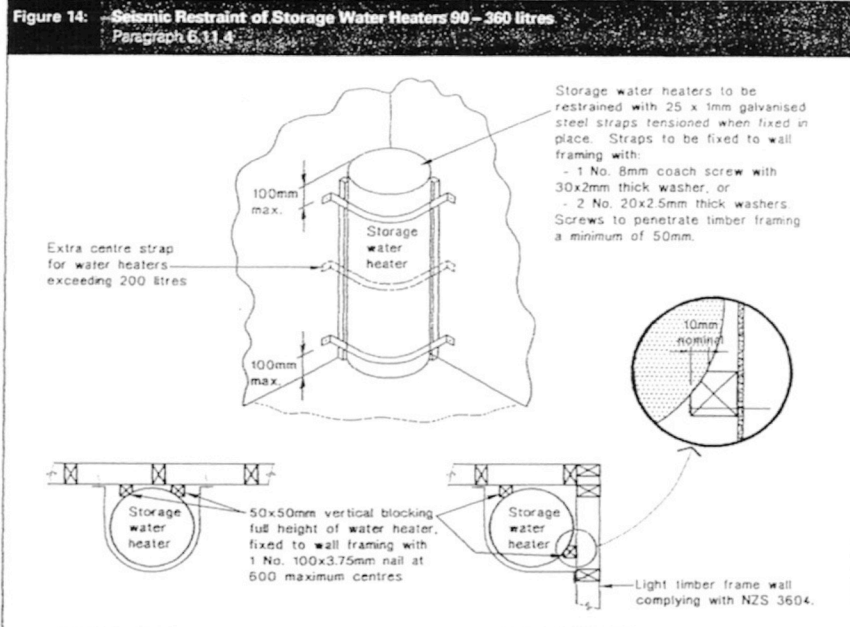


SEISMIC RESTRAINT FOR HWC

WATER SUPPLIES

Acceptable Solution G12/AS1

Amend 5
Feb 2004



suitably located to easily empty the vessel for maintenance, or

- ii) terminate outside the building with a cap only.

6.11.4 Structural Support

NZBC B1.3.2 requires *building elements* (including *storage water heaters*) to be adequately supported including support against earthquake forces. The method illustrated in Figure 14 is acceptable for *water heaters* up to 360 litre capacity. Where fittings and pipework are attached to the *water heater* through the supporting platform or floor a 50 mm minimum clearance shall be provided between the fitting and the support structure.

6.11.5 An alternative acceptable solution for securing *storage water heaters* against seismic forces is given in Section 203 of NZS 4603.

Amend 5
Feb 2004

6.12 Hot water pipe sizes

6.12.1 The *diameter* of hot water supply pipes from *storage water heaters* and to *sanitary fixtures* shall be no less than those required by Table 4.

6.13 Wet-back water heaters

6.13.1 Wet-back *water heaters* shall be:

- a) Connected only to *open vented storage water heaters*, or a *water storage vessel* (see Figure 15), and
- b) Made of copper.

6.13.2 Copper pipework shall be used between the wet-back and the *water tank*.

Amend 5
Feb 2004

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WATER TEMPERING VALVE

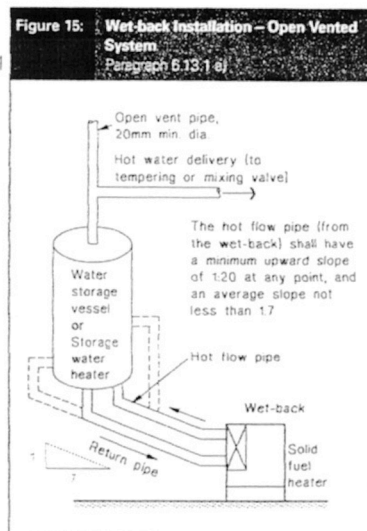
Plumber to ensure suitable tempering valve (Apex, Methven or similar) is installed to comply with NZS 4617 or AS 1357.2

See Water Supplies Acceptable Solution G12/AS1 Fig 16 diagram included

Acceptable Solution G12/AS1

WATER SUPPLIES

Amended 5 Feb 2004



6.14 Safe water temperatures

6.14.1 Maximum temperatures

The delivered hot water temperature at any *sanitary fixture* used for personal hygiene shall not exceed:

- 45°C for early childhood centres, schools, old people's homes, institutions for people with psychiatric or physical disabilities, hospitals, and
- 55°C for all other *buildings*.

COMMENT:

- At greatest risk from scalding are children, the elderly, and people with physical or intellectual disabilities, particularly those in institutional care.
- Sanitary fixtures* used for personal hygiene includes showers, baths, hand basins and bidets.

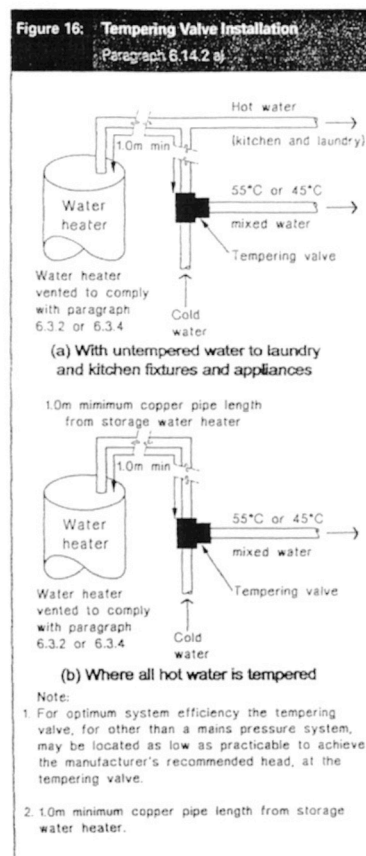
6.14.2 Hot water delivered from storage water heaters

- An acceptable method of limiting hot water temperature delivered from *storage water heaters* is to install a mixing device between the outlet of the *water heater* and the *sanitary fixture* (see Figure 16).

Amended 5 Feb 2004

BUILDING INDUSTRY AUTHORITY

Amended 5 Feb 2004



- Tempering valves shall comply with NZS 4617 or AS 1357.2.

6.14.3 Legionella bacteria

Irrespective of whether a mixing device is installed, the *storage water heater* control thermostat shall be capable of being set at a temperature of not less than 60°C to prevent the growth of Legionella bacteria.

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JURALCO VIKING BALUSTRADE SYSTEM



PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on page 2)

Building Code Clause(s).....B1.....

ISSUED BY:.....Nancekivell Cairn Ltd.....
(Design Firm)

TO:.....Juralco Aluminium Building Products Ltd.....
(Owner/Developer)

TO BE SUPPLIED TO:.....Non Specific.....
(Building Consent Authority)

IN RESPECT OF:.....Juralco Viking Balustrade System.....
(Description of Building Work)

AT:.....Non Specific.....
(Address)

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

We have been engaged by the owner/developer referred to above to provide ... structural engineering design ...
... and review of prototype testing..... services in respect of the requirements of
(Extent of Engagement)

Clause(s) B1, B2, F4..... of the Building Code for
All ☐ or Part only ☒ (as specified in the attachment to this statement), of the proposed building work.

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

☒ Compliance Documents issued by the Ministry of Business, Innovation & Employment .B1/VM1, B2/AS1, F4/AS1..or
(verification method / acceptable solution)
☐ Alternative solution as per the attached schedule.....

The proposed building work covered by this producer statement is described on the drawings titled

... Juralco Balustrade Systems Manual..... and numbered Issue 1/14.....
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

- (i) Site verification of the following design assumptions ... Supporting structures are designed to suit.....
- (ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ☐ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☒ as per agreement with owner/developer (Architectural)

I, Scott Lawrence..... am:
(Name of Design Professional)

☒ CPEng1005722.....#

☐ Reg Arch#

I am a Member of: ☒ IPENZ ☐ NZIA and hold the following qualifications:.....MEng (Hons).....

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

The Design Firm is a member of ACENZ: ☒

SIGNED BY Scott Lawrence..... ON BEHALF OF Nancekivell Cairn Ltd.....
(Design Firm)

Date.....23 May 2014..... (signature).....

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

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

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

PRODUCER STATEMENT PS1

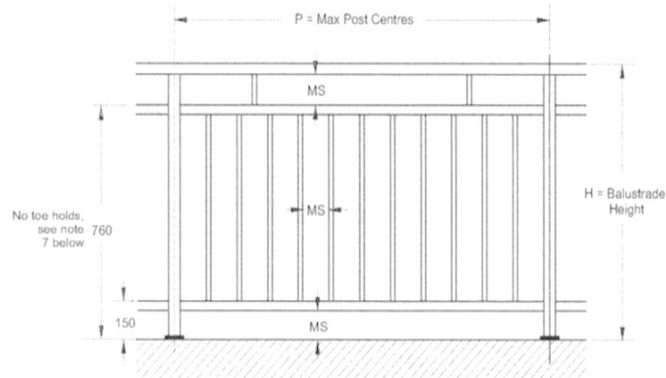
Tasman District Council BUILDING CONSENT AUTHORITY APPROVED 20/11/2014 BC145738..... BUILDING CONSENT ALL WORK IS TO COMPLY WITH THE NZ BUILDING CODE DO NOT MAKE CHANGES WITHOUT PRIOR APPROVAL
--

Alterations to House for Elizabeth Tennet



Juralco Viking Balustrade System

BALUSTRADE DESIGN GUIDE



BALUSTRADE DESIGN GUIDE - for building types below

All other applications please contact Juralco Aluminium Building Products Technical Manager

NZBC REQUIREMENTS - SECTION F4 : SAFETY FROM FALLING

H = HEIGHT OF BALUSTRADE (Measured from floor level to top of handrail)	BUILDING TYPE	LOCATION	HEIGHT(mm)
	Detached dwellings and within household units of multi-unit dwellings	Stairs and ramps and their landings	900
		Balconies and decks, and edges of internal floors or mezzanine floors	1000
	All other buildings, and common areas of multi-unit dwellings	Stairs or ramps (excluding landings)	900
		Barriers within 530mm of the front of fixed seating	800
		All other locations	1100
	Swimming Pools		1200
MS = MAX OPENING SIZE			100 [use 99]
P = MAX POST CENTRES * refer to chart 1 But not more than MAX spacing for given height indicated on chart 1	with baluster rails		1500*
	with 6mm toughened glass infill panels		1500*
	with 10mm toughened glass & JVB011 frameless post for up to & including 1200mm high & High wind zone		1500*

- Heights are measured vertically from finished floor level (ignoring carpet or vinyl, or similar thickness coverings) on floors, landings and ramps. On stairs the height is measured vertically from the pitch line or stair nosings.
- A landing is a platform with the sole function of providing access.
- Household unit does not include a hostel, boarding house, motel or other specialised accommodation.
- Stairs or ramps for all other buildings does not include landings - use all other locations
- The triangular opening formed by the riser, tread, and bottom rail of the barrier on a stair shall be of such a size that a 150mm diameter sphere can not pass through it, except for swimming pool stairs where the diameter is 100mm.
- Barriers to swimming pools shall have in addition to performance F4.3.4:
 - All gates and doors fitted with latching devices not readily operated by children, and constructed to automatically close and latch when released from any stationary position 150mm or more from the closed and secured position but excluding sliding and sliding-folding doors that give access to the immediate pool surround from a building that forms part of the barrier and,
 - No permanent objects on the outside or inside of the barrier that could provide a climbing step.
- No toe-holds between the heights of 150mm and 760mm above floor level (or stair nosing).

Juralco EDGE Balustrade System building code compliance documentation requires all balustrade installations are to be completed in accordance with the requirements of our authorised installer certification.



Juralco Viking Balustrade System

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Alterations to House for Elizabeth Tennet



Juralco Viking Balustrade System

BALUSTRADE DESIGN GUIDE

Chart 2 - Residential Buildings, Offices and Work Areas. Up to 2.0kPa

Design Wind Speed exceeding 50m/sec or a Design Wind Pressure exceeding 1.5kPa and up to a max Design Wind Pressure of 2.0kPa
Occupancy A,B and E, C3 AS/NZS1170

- 1 - See Floating Deck comment below
- 2 - See p4 for Balustrade Height defined
- 3 - Minimum Post height 760mm above deck to comply with 'Toe hold' requirements of F4/AS1

For timber decks only
The First page references below,
Complies with NZS3604:2011
Double Boundary Joists

Group 1

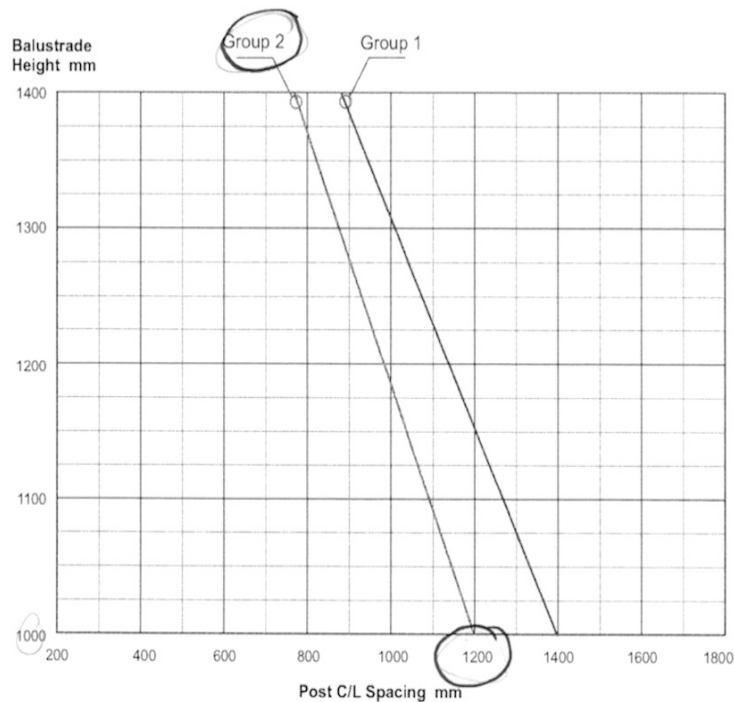
Applies to Mountings

- p19, 35 - FACE fix to timber, Screws, Gutter Bracket
- p20, 36 - FACE fix to timber, Bolts, Gutter Bracket
- p21, 37 - FACE fix to waterproof deck, Gutter Bracket
- p24 - TOP fix to concrete - Baseplate JVB 100
- p25 - TOP fix to concrete - Baseplate JVB 101
- p26 - TOP fix - Embedded in concrete
- p28 - FACE fix to concrete, Gutter Bracket
- p29 - FACE fix to steel, Gutter Bracket
- p30 - FACE fix Post to concrete
- p31 - FACE fix Post to steel

Group 2

Applies to Mountings

- p17, 33 - TOP fix to timber - Baseplate JVB 121
- p18, 34 - TOP fix to timber - Baseplate JVB 114
- p22, 38 - FACE fix Post to timber
- p23, 39 - FACE fix Post to Waterproof deck
- p27 - TOP fix to steel (with timber deck) - Baseplate JVB 121
- p32 - TOP fix to timber - Baseplate JVB 100



Floating Decks - the distance between the top of the boundary joists and the top of the floating deck must be added to the post height.
This will result in the post c/l spacing being reduced. A floating deck is not a structural item and therefore can not be used for the primary fixing of fasteners.



Juralco Viking Balustrade System

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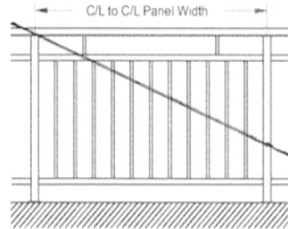
ALL WORK IS TO COMPLY WITH THE NZ BUILDING CODE
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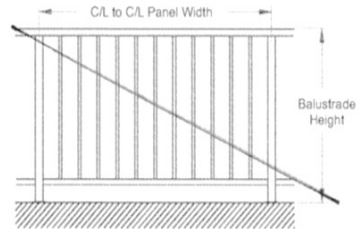
Juralco Viking Balustrade System

TYPICAL CONFIGURATIONS

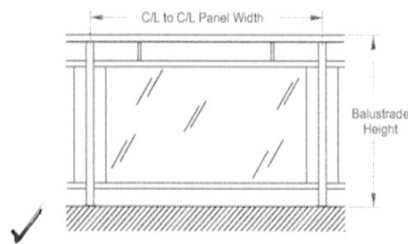
Balustrade Height is always measured from Deck Level



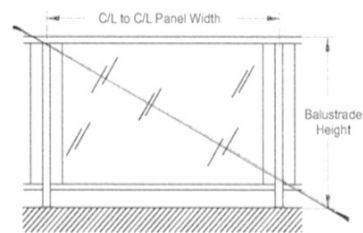
Split Rail Baluster



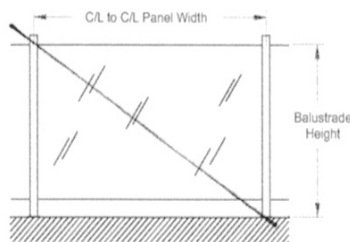
Full Height Baluster



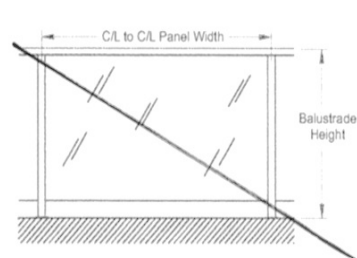
Split Rail Glass



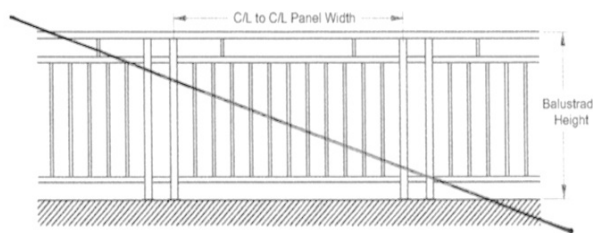
Full Height Glass



Semi Frameless Glass



Semi Frameless Glass and Handrail



Split Rail Baluster, Double Post



Handrail - Nib Wall



Handrail - Wall mount



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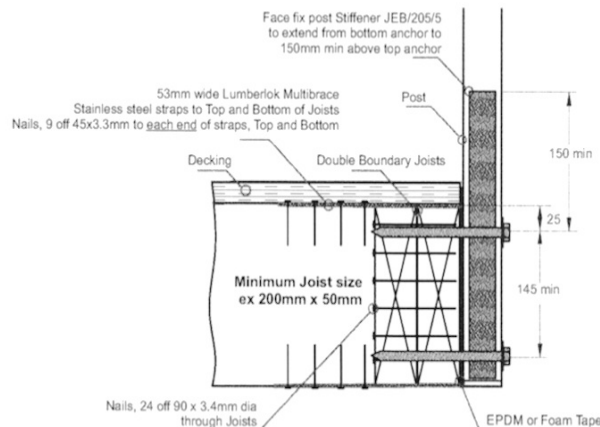
Alterations to House for Elizabeth Tennet



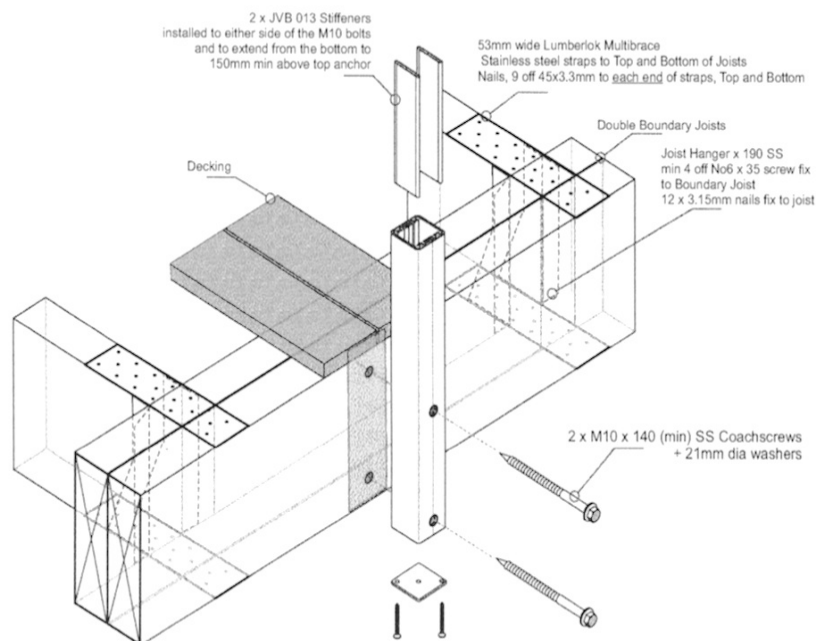
Juralco Viking Balustrade Systems - Typical Post Fixings Complies with NZS3604:2011 - Double Boundary Joists

Typical Face fit Post to Timber - Coachscrews or Bolts

Design engineer must ensure deck can support appropriate load applied at each post



- 1 - Coachscrews - 90mm min engagement into joists
- 2 - Bond all coachscrews with SIKa Supergrip to full depth
- 3 - A Rubber, EPDM or Foam Tape layer must be installed between the Post and Timber



All fixings must be Stainless steel



Juralco Viking Balustrade System

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Juralco Aluminium Building Products Ltd

Specifications for Juralco Viking Balustrade System

1 Scope

This specification details the documents the Juralco Viking Balustrade System refers to in relation to the New Zealand Building Code, the manufacturer's documents; products used in the System, requirements in relation to fixing and surface finishing.

2 NZBC Compliance

- The Juralco Viking Balustrade System has been tested by Nancekivell Cairn Ltd, Civil and Structural Engineers, to demonstrate compliance with the structural requirements of the New Zealand Building Code and AS/NZS 1170 : 2002 occupancy A, B, E, C3, NZS 3604 Low, Medium, High, Very High Wind Zone, max design wind pressure 2.0KPa
- The Structural Engineering design includes the requirements of B1 Structure, B2 Durability and F4 Safety from falling of the Building Code
- Verification Method B1 / VM1, B2/AS1, F4 / AS1
- All glass used in the Juralco Viking Balustrade System must conform to AS/NZS 2208

3 Manufacturer's Documents

- The Juralco Viking Balustrade System manual details all extrusions and components used for the fabrication and installation/fixing of the system.
- A Producer Statement 1(Design) is available.
- Copies of the above documents are available from:
Juralco Aluminium Building Products Ltd
48 Bruce McLaren Rd, Henderson, Auckland
Phone: 09 478 8018
Fax: 09 478 7883
Email: specify@juralco.co.nz
- Any deviation from the standard fabrication or installation/fixing must be accompanied by a site specific PS1 with site specific calculations and drawings

4. Products

- Only extrusions, components and hardware supplied by or specified by JABP may be used in the Viking System.
- AS/NZS 2208 as confirmed by the Safety Stamp detailing the manufacturer's description and licence number.



Alterations to House for Elizabeth Tennet

- Aluminium extrusions, components and hardware – unless specified are manufactured to 6060 T5 specifications.
- Stainless Steel components, hardware, fixings – all components to 316 grade Glass - all glass used in the Juralco Viking Balustrade System must conform to the specifications as listed in the Juralco Viking manual with each panel conforming to AS/NZS 2208 as confirmed by the Safety Stamp detailing the manufacturer's description and licence number.

5. Surface Finishing

- Juralco Aluminium Building Products Ltd is a Dulux Registered Applicator site, registration number 2101
- JABP uses only Dulux branded powder coating materials
- Unless specified otherwise, Dulux Duralloy powder coating systems are used for properties greater than 100 metres from high tide level where AAMA 2603 performance is required.
- Dulux Duratec powder coating systems must be used for all properties greater than 10 metres and up to 100 metres from high tide level, where AAMA 2604 performance is required.
- Dulux Duralloy has a 10 year film and colour integrity warranty, Dulux Duratec has a 15 year film and colour integrity warranty.

6. Installation and Fixing

- The Juralco Viking Balustrade System must only be installed in accordance with the Juralco Viking Balustrade System manual
- Any deviation from that specified in the Viking manual must only be in accordance with the site specific PS1 with site specific calculations and drawings listing the non standard details.
- The Juralco Viking Balustrade System must only be fabricated/installed by a Juralco approved fabricator.
- Upon completion of the installation the fabricator must supply the owner with a PS3 (Construction)



JURALCO PRODUCT WARRANTY



Juralco warrants that all Juralco products comply with the requirements of the Consumer Guarantees Act 1993; specifically that products supplied by Juralco will be free from manufacturing defects under normal use.

Juralco products come with a minimum 5 year warranty, in accordance with its standard warranties, in effect at date of delivery. That is provided the goods are genuine Juralco components, have been fabricated and installed by an authorised Juralco dealer and used in accordance with recommendations given, including that the goods have been, or are being used for the purpose for which they were designed.

This limited warranty does not cover apparent defects caused by unfair wear and tear or abnormal use of the product, modification or alteration of the product, improper assembly or failures resulting from inadequate inspection and maintenance or extreme weather.

Juralco may repair or replace at its option any portion of the subject product which proves to be defective under the terms of this warranty at no further cost to the buyer.

Juralco shall be liable under this limited warranty only for the cost or at its option, the repair or replacement of defective products.

Accidental or consequential damages which may arise including, but not limited to business and personal property damage and third party liabilities are hereby excluded.

Also expressly excluded under this warranty is any material or product that may be included in the manufacture of the product covered by the warranty of another supplier.



PURCHASER RESPONSIBILITIES

Be able to show that:

- the product defect or damage has occurred because of faulty products or workmanship.
- the product has been used expressly for its intended purpose.
- the product maintenance obligations have been fulfilled.
- they are the original purchaser.
- the claim is within the warranty period as set for the product.

WARRANTY CATEGORIES

PRODUCT CATEGORY	DESCRIPTION	WARRANTY	EXCLUSIONS
AWNINGS	Fabric & Working Parts	5 Years	Nice Automation - 2 year warranty
BALUSTRADES	Aluminium & Toughened Glass	5 Years	
GATES & FENCING	Aluminium Gate/Fence	5 Years	Working Parts - 2 year warranty Nice Automation - 2 year warranty
INSECT SCREENS	Aluminium & Working Parts	5 Years	Insect Mesh (Fibreglass Mesh)
SECURITY SCREENS	SupaScreen Screens	10 Years	
	Clearguard Screens	7 Years	
ROLLER BLINDS	Amplimesh Grille & Screens	5 Years	Insect Mesh (Fibreglass Mesh)
	Working Parts & Fabric	5 Years	Nice Automation - 2 year warranty
ROLLERGRILLES & SHUTTERS	Grille/Shutter & Working Parts	5 Years	Nice Automation - 2 year warranty
SHOWERS	Toughened Safety Glass, Aluminium & Working Parts	5 Years	
WINTERGLAZE	Working Parts & Aluminium	5 Years	IGU Units (Metrotech) - 10 year warranty
WARDROBE DOORS	Working Parts & Aluminium	5 Years	
WARDROBE ORGANISERS	Aluminium, Wire or Melamine	5 Years	Wire Baskets - 12 month warranty
DURALLOY POWDER COAT	Powder Coated Aluminium	10 Years	
DURATEC POWDER COAT	Powder Coated Aluminium	20 Years	

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CARE & MAINTENANCE



Juralco Balustrades

Aluminium and glass balustrades are low maintenance, (compared to other materials such as wood), but still require some general cleaning to preserve their good looks.

MAINTENANCE:

The maintenance of aluminium and glass balustrades are both similar and the recommended cleaning schedule is identical. In urban areas cleaning should take place every three months and every rural areas every six months. In industrial and marine environments (within 1km of the sea), cleaning with a cold water wash should be monthly, as well as six monthly with a warm water detergent wash.

Regular visual inspections will help to identify and fix any issues before they could become serious and should be done every few months.

CLEANING:

ALUMINIUM: Instructions on the care & maintenance of your powder coated or anodised aluminium balustrade is available on the next page.

GLASS: Cleaning your glass balustrade panels is similar to how you would clean most household glass.

- 1 - Wash down with clean water to loosen any residues, deposits or dirt.
- 2 - If needed, wipe with a mild detergent and a soft cloth.
- 3 - Rinse off with lots of clean water, to ensure that all detergents and grime are rinsed off.
- 4 - For a streak free finish, you can dry the glass with a soft cloth.

DO make sure the glass is cool to touch when cleaning; do not clean while in the direct sunlight.

DO NOT leave any cleaning solution on the glass sealants for long periods.

DO NOT use abrasive cleaning solutions or materials.

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CARE & MAINTENANCE

Powder Coated & Anodised Aluminium

To comply with warranty requirements and to extend the effective life of anodised/powder coated finishes, very simple maintenance and regular visual inspections should be scheduled and undertaken.

MAINTENANCE:

In general, anodised or powder coated aluminium in urban areas should be cleaned every three months and in rural areas every six months. In industrial and marine environments (within 1km of the sea), monthly cold water washing **as well as** six monthly washes, with warm water & detergent, is necessary.

CLEANING:

- 1 - Carefully remove any loose deposits with a wet sponge.
- 2 - Wash down using a soft brush (non abrasive) and a mild household detergent solution to remove dust, salt, dirt and other deposits.
- 3- **Anodised** finishes with greasy deposits or hard to remove grime, should be cleaned with a soft cloth dipped in white spirit, turpentine or kerosene, then wiped with a dry rag.
- 4 - Rinse off with lots of clean fresh water.

DO remove obvious deposits as they occur.

DO NOT use abrasive-steel wool, scrapers, scouring liquids or powders to remove paint splashes - these will damage your anodised/powder coating.

DO NOT use aggressive solvents, thinners, petrol etc, on **powder coating** as these solvents will attack gloss levels and reduce its life expectancy.

DO NOT let any solvents used on **anodised** finishes come in contact with any rubber components as they can degrade them.

DO NOT expose your anodised/powder coatings to excessive heat, heaters or hot air guns - these may damage the coating.

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