

MultiProof - compliance assessment report

The following example is for a semi-detached house, and shows the type of information you should provide as part of an application.

MultiProof Application – Compliance Assessment Report	
Design name	Luna 2-bed
Design description	2 bedroom single storey semi-detached with garage, floor area 139m ² . Timber framed with zone, foundation, plan, cladding, window and heating options.
Classified Use	Housing - Multi-unit dwelling (attached dwelling)
Importance level	Importance level 2
General	
Wind zones	Medium; High; Very high
Earthquake zone	Up to Zone 3
Subsoil classification	Up to Class E – Very soft soil types
Live loads	Up to 2 kPa
Snow loads	Up to 1.0 kPa
Exposure	Up to Zone C
Climate	Zones 1 & 2; Zone 3
Specified intended life	Not less than 50 years
Clause /Element / Component	How complies
B1 Structure	
Ground	Foundation option limited to good ground as defined in NZS 3604 – ultimate bearing capacity of 300kPa. Site specific foundation option permitted where bearing capacity is less than this.
Foundation option 1	Concrete complying with NZS 3604. 20Mpa concrete complying with NZS 3104 for manufacture and NZS 3109 for construction Reinforcing complying with AS/NZS 4671. Bars shall be grade 300E. Mesh shall be grade 500N or 500E. 1:10 details provided (sheet 8) for foundation edge details, to internal loadbearing walls, and bottom plate fixings. Details based on NZS 3604.
Foundation option 2	RibRaft – CodeMark – Certificate of Conformity CMA-CM40015 (Rev 2) Calculations, details and specifications, Producer Statement PS1 Design and Certificate of Design Work provided by LBP Rod Bridges CPEng 9999999. 1:10 details provided (sheet 8a)
Framing	B1/AS1 specified as means of compliance. Timber complying with NZS 3602. Table on framing plan (sheet 3) specifies sizes and grades of all wall, roof and ceiling framing and sizes for Medium, High and Very high wind zones. Table in specification schedules all fixings.
Wall framing	Loadbearing and non-loadbearing walls defined on framing plan (sheet 3). All walls except intertenancy wall are 2.4m. 90 x 45 SG 8 used for all framing. Studs at 400mm centres for load bearing walls in Very high wind zones. 600mm centres for all other wind zones and non-

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	<p>loadbearing walls. Trimming studs thickness 90mm from Table 8.5 Intertenancy walls framed from 140 x 45 framing with centres reducing and studs doubled as wall increases up to maximum 4.2 height. Centres for different wind zones specified in framing table.</p>																																								
Lintels	Lintels shown on framing plan (sheet 3). Sizes to NZS 3604 Table 8.9 for light roof																																								
Bracing	<p>Calculations provided for each wind zone. GIB EzyBrace 2011 Software used.</p> <table border="1"> <thead> <tr> <th colspan="2">Bracing summary</th> <th colspan="3">Wind zones</th> </tr> <tr> <th></th> <th></th> <th>Med</th> <th>High</th> <th>Very high</th> </tr> </thead> <tbody> <tr> <td>Wind</td> <td>Demand across</td> <td>x</td> <td>xx</td> <td>xxx</td> </tr> <tr> <td></td> <td>Demand along</td> <td>y</td> <td>yy</td> <td>yyy</td> </tr> <tr> <td></td> <td>Achieved across</td> <td>x+</td> <td>xx+</td> <td>xxx+</td> </tr> <tr> <td></td> <td>Achieved along</td> <td>y+</td> <td>yy+</td> <td>yyy+</td> </tr> <tr> <td>Earthquake</td> <td>Demand</td> <td>z</td> <td>z</td> <td>z</td> </tr> <tr> <td></td> <td>Achieved</td> <td>z+</td> <td>z++</td> <td>z++</td> </tr> </tbody> </table> <p>Bracing coded and dimensioned on framing plan. Technical specifications for bracing elements included in the specification.</p>	Bracing summary		Wind zones					Med	High	Very high	Wind	Demand across	x	xx	xxx		Demand along	y	yy	yyy		Achieved across	x+	xx+	xxx+		Achieved along	y+	yy+	yyy+	Earthquake	Demand	z	z	z		Achieved	z+	z++	z++
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Roof framing	<p>Verification Method B1/VM1 referenced for truss design. Trusses calculations uses Eze-span NZ Ltd truss design program. Calculations, layout, fixings, Producer Statement PS1, Design and Certificate of Design Work provided by LBP Rod Steel CPEng 888888. All other members and fixings to NZS3604. Roof framing plan provided locating roof bracing, and ancillary framing members.</p>																																								
Ceiling framing	Sizes to NZS 3604 shown in table (sheet 3).																																								
B2 Durability																																									
Foundation option 1	<p>20 Mpa concrete complying with NZS 3101 Concrete Structures Part 1 Section 3. Reinforcing cover dimensioned.</p>																																								
Foundation option 2	RibRaft – CodeMark – Certificate of Conformity CMA-CM40015 (Rev 2) covers compliance with B2																																								
Walls	<p>NZS 3604 and B2/AS1 Table 1A referenced. H1.2 for all wall framing. H3.1 for cavity battens. H3.2 for weatherboard, external trim, window/door reveals</p>																																								
Roof	<p>B2/AS1 Table 1A referenced. H1.2 for all trusses, roof framing, bracing and purlins. Coated steel roofing specified. Two products nominated as alternatives. uPVC gutters and downpipes specified. Technical specifications provided.</p>																																								
Other	<p>Windows and flashings specified as prefinished anodised aluminium. Anodising 25 micron thickness complying with NZ Specification WANZ SFA 3503-03:2005</p>																																								
Steel fixings and	Specified as galvanised steel complying with NZS 3604 4.4																																								

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fastenings																																									
Compatibility of materials	Compliance with tables 21 and 22 of E2/AS1 referenced in specification.																																								
C Protection from fire	C/AS1 specified as means of compliance Risk group SH																																								
C2 Prevention of fire occurring	Gas burning appliances specified as options for heating, hot water and cooking. C/AS1 referenced. Recess downlights specified as complying with C/AS1.																																								
C3 Fire affecting areas beyond the fire source	Intertenancy wall required to be 30/30/30 FRR. 2 layers of 10mm xxx standard plaster board specified. Products and installation specification nominated and provided. Sealants specified. 1:5 details provided at floor, ceiling, roof and external wall junctions. Note on drawings - services penetrations not permitted. C3.2 does not apply. Building height less than 10m. C3.3 does not apply. Building eaves noted on plan as to be located not less than 1m from any boundary. C3.4 does not apply within household units in multi-unit dwellings.																																								
C4 Movement to a place of safety	Type 1 smoke alarm to F7/AS1 specified. Alarms located on the services plan. Dead end open path of 12.5m (max) is less than the 25m allowed.																																								
C5 Access and safety for firefighting operations	C5.3 - C5.8 do not apply within household units in multi-unit dwellings																																								
C6 Structural stability	Intertenancy wall required to be 30/30/30 FRR.																																								
D1 Access Routes	D/AS1 specified as means of compliance. Single 190 mm step dimension at entrance doors. All other access is site specific.																																								
D2 Mechanical installations for access	Does not apply.																																								
E1 Surface Water	E1/AS1 specified as means of compliance. Roof pitch, areas of roof, downpipe and gutter locations shown on the roof plan (sheet 5). uPVC gutter profile specified. Nominal cross sectional area of gutter allows for a maximum of 45m ² of roof at a roof pitch of 0-25° (from fig 15). Downpipe allows for up to 60m ² at roof pitch of 0-25°. <table border="1" data-bbox="528 1514 1401 1904"> <thead> <tr> <th colspan="5">Gutters and downpipes</th> </tr> <tr> <th>Roof section</th> <th>Areas (m²)</th> <th>Downpipes (65NB)</th> <th>Min gutter size (mm²)</th> <th>Proposed gutter (mm²)</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>23</td> <td>1</td> <td>4000</td> <td>> 5130</td> </tr> <tr> <td>B</td> <td>26</td> <td>1</td> <td>4000</td> <td>> 5130</td> </tr> <tr> <td>C</td> <td>35</td> <td>1</td> <td>4000</td> <td>> 5130</td> </tr> <tr> <td>D</td> <td>32</td> <td>1</td> <td>4000</td> <td>> 5130</td> </tr> <tr> <td>E</td> <td>44*</td> <td>1</td> <td>~5000</td> <td>> 5130</td> </tr> <tr> <td>F</td> <td>44*</td> <td>1</td> <td>~5000</td> <td>> 5130</td> </tr> </tbody> </table> <p>* Includes handed area of roof of the adjacent unit.</p>	Gutters and downpipes					Roof section	Areas (m ²)	Downpipes (65NB)	Min gutter size (mm ²)	Proposed gutter (mm ²)	A	23	1	4000	> 5130	B	26	1	4000	> 5130	C	35	1	4000	> 5130	D	32	1	4000	> 5130	E	44*	1	~5000	> 5130	F	44*	1	~5000	> 5130
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E2 External Moisture	E2/AS1 specified as means of compliance. Risk matrix provided on sheet 7.																																								

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	Risk factor	Wind zones - subtotals		
	Risk factor	Med	High	Very high
	Wind zone	0	1	2
	No. of storeys	0	0	0
	Roof/Wall intersection	0	0	0
	Eaves width	1	1	1
	Envelope complexity	0	0	0
	Deck design	0	0	0
	Risk score	1	2	3
Achieves a total risk score of less than 6 for Med, High and Very high wind zones.				
Floor	DPM specified and installation detailed for foundation option 1. BRANZ appraisal provided for specified product.			
Walls	<p>Minimum height above ground specified.</p> <p>Bevel-backed weatherboard direct fixed. 1:5 details (sheets 9-10) provided at base, internal and external corners, eaves and barges; sill, jambs and head of windows and doors; and services penetrations. Detail also provided for optional deck fixing.</p> <p>Details all based on E2/AS1. Flashings, underlay and weatherboard joints specified.</p> <p>Flashings dimensioned.</p> <p>BRANZ appraisals provided for specified wall underlay and flashing tapes.</p>			
Windows/doors	<p>Window brand and range specified. Manufacturer required to be a member of WANZ and provide test results on request.</p> <p><i>NZS 4211: 2008 Specification for the Performance of Windows</i> referenced.</p> <p>Specification requires windows the frames to be labelled, in accordance with NZS 4211, to show the brand, the standard, the wind zone or wind pressures and the air infiltration level.</p> <p><i>The WANZ Guide to Window Installation as described in E2/AS1 Amendment 5</i> referenced.</p>			
Roof	<p>0.4mm corrugated roofing specified. Two products nominated. Roof pitch 15^o.</p> <p>1:5 details provided (sheet 11) for eaves, barge, ridge, and roof penetrations. Roofing, flashings, underlay, fixings, installation, and manufacturing standards specified.</p> <p>Alternative solution for roof lights: design of flashings to roof lights, and roofing installation detailed to comply with NZ Metal Roofing Manufacturers Inc. code of practice <i>Metal Roofing Design and Installation Handbook</i></p>			
E3 Internal moisture	E3/AS1 specified as means of compliance.			
Floor	<p>Water splash areas identified.</p> <p>Wet areas: Tile underlay, membrane and sealants specified. 1: 5 details (sheet 15) provided for edges, junctions and drainage outlets. BRANZ appraisal provided for membrane.</p> <p>Vinyl and tile options provided to laundry. Minimum area defined.</p> <p>Coving detailed. Overflow to tub and floor outlet specified (sheet 18).</p>			

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Walls	Water splash areas identified. Paint finishes specified. Wet areas: Tile underlay, membrane and sealants specified. 1: 5 details (sheet 15) provided for edges, junctions and penetrations. BRANZ appraisal provided for membrane.												
Thermal resistance	R 2.2 fibreglass insulation specified to external walls and internal garage wall. R 3.6 fibreglass insulation specified to ceilings increasing to R 4.0 in Zone 3. R-value calculations provided. <table border="1"> <thead> <tr> <th colspan="3">R-values</th> </tr> <tr> <th></th> <th>Minimum</th> <th>Achieved</th> </tr> </thead> <tbody> <tr> <td>Walls</td> <td>1.5</td> <td>Min 2.07</td> </tr> <tr> <td>Ceiling</td> <td>1.5</td> <td>Min 3.1</td> </tr> </tbody> </table> Insulation detailed and brand options specified.	R-values				Minimum	Achieved	Walls	1.5	Min 2.07	Ceiling	1.5	Min 3.1
R-values													
	Minimum	Achieved											
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F1 Hazardous agents on site	Not applicable for MultiProof. Site specific.												
F2 Hazardous building materials	F2/AS1 specified as means of compliance. Safety glass specified to shower enclosure, window over bath, glazed doors, and barrier option. NZS 4223 Part 3 is referenced.												
F3 Hazardous substances and process	Not applicable.												
F4 Safety for falling	Only applies to deck option where deck or steps are 1m or more above the ground. F4/AS1 specified as means of compliance. Glazed and timber options detailed. Elevations and sections provided for 1m high deck barrier and 0.9m stair barrier.												
F5 Construction and demolition hazards	Not applicable.												
F6 Visibility in escape routes	Not applicable.												
F7 Warning systems	F7/AS1 specified as means of compliance. Type 1 Domestic smoke alarm system specified. Smoke alarms located on plan (sheet 16). Product standards nominated in specification.												
F8 Signs	Not applicable.												
G1 Personal hygiene	G1/AS1 specified as means of compliance. WC pan and cistern, basin, bath/shower options located and specified. Manufacturing standards specified. WC separated from kitchen by door. >200mm door clearance provided to pan.												
G2 Laundering	G2/AS1 specified as means of compliance. Laundry tub located and specified. Space and service connections specified for washing machine. Hot and cold water supplies specified.												
G3 Food preparation	G3/AS1 specified as means of compliance. Sink and sink bench material options specified. Layout options shown. Each contain a sink, cooker, space for a fridge, storage under sink bench, and list options for additional storage, dishwasher and range hood. Painted surfaces specified with glass and stainless steel options behind												

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	the cooking top.																																								
G4 Ventilation	<p>G4/AS1 specified as means of compliance. Table below provides the room areas, the minimum opening size of window required for compliance and the area of ventilation achieved. Ventilation areas shown on window/door schedule (sheet 11).</p> <table border="1"> <thead> <tr> <th colspan="5">Natural ventilation to comply with G4/AS1</th> </tr> <tr> <th></th> <th>Room area (m²)</th> <th>Min vent area (m²)</th> <th>Window options</th> <th>Achieved (m²)</th> </tr> </thead> <tbody> <tr> <td>Living/Kitchen</td> <td>55</td> <td>2.75</td> <td>D2/D3/W1</td> <td>5.4</td> </tr> <tr> <td></td> <td></td> <td></td> <td>D2/D3/D3</td> <td>5.94</td> </tr> <tr> <td>Bed 1</td> <td>18</td> <td>0.9</td> <td>W1 or D3</td> <td>1.08 - 1.62</td> </tr> <tr> <td>Bed 2</td> <td>14</td> <td>0.7</td> <td>W1 or W3</td> <td>1.08 – 1.62</td> </tr> <tr> <td>Bathroom</td> <td>8</td> <td>0.4</td> <td>W2</td> <td>0.5</td> </tr> <tr> <td>Garage /laundry</td> <td>20/8</td> <td>0/0.4</td> <td>D4</td> <td>0.4</td> </tr> </tbody> </table> <p>Vents specified for gas cooker and heating options.</p>	Natural ventilation to comply with G4/AS1						Room area (m ²)	Min vent area (m ²)	Window options	Achieved (m ²)	Living/Kitchen	55	2.75	D2/D3/W1	5.4				D2/D3/D3	5.94	Bed 1	18	0.9	W1 or D3	1.08 - 1.62	Bed 2	14	0.7	W1 or W3	1.08 – 1.62	Bathroom	8	0.4	W2	0.5	Garage /laundry	20/8	0/0.4	D4	0.4
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G5 Interior environment	G5.2.2 only applies. Heating appliance to be installed in accordance with the manufacturer's instructions.																																								
G6 Airborne and impact sound	<p>Not less than 55 STC required to fire rated intertenancy wall. Alternative solution proposed to achieve 58 STC and 30/30/30. 2 layers of 10mm xxx standard plasterboard each side of double stud loadbearing wall with R1.8 fibreglass insulation. Manufacturer's technical specification (name) and BRANZ appraisal provided. Framing and plasterboard at external wall based on G6/AS1 Detail D. Framing and plasterboard extend up to underside of roofing material. Note on drawings -services penetrations not permitted to intertenancy wall.</p>																																								
G7 Natural light	<p>G7/AS1 specified as means of compliance. Table below provides the room areas, the minimum areas of natural light required for compliance and the areas achieved. Glazing areas shown on window/door schedule (sheet 11).</p> <table border="1"> <thead> <tr> <th colspan="5">Natural light to comply with G7/AS1</th> </tr> <tr> <th></th> <th>Room area (m²)</th> <th>Min glazed area (m²)</th> <th>Window options</th> <th>Achieved (m²)</th> </tr> </thead> <tbody> <tr> <td>Living/Kitchen</td> <td>55</td> <td>5.5</td> <td>D2/D3/W1</td> <td>11.16</td> </tr> <tr> <td></td> <td></td> <td></td> <td>D2/D3/D3</td> <td>12.6</td> </tr> <tr> <td>Bed 1</td> <td>18</td> <td>1.8</td> <td>W1 or D3</td> <td>2.16 – 3.6</td> </tr> <tr> <td>Bed 2</td> <td>14</td> <td>1.4</td> <td>W1 or D3</td> <td>2.16 – 3.6</td> </tr> <tr> <td>Bathroom</td> <td>8</td> <td>0</td> <td>W2</td> <td>1</td> </tr> <tr> <td>Garage /laundry</td> <td>20/8</td> <td>0/0</td> <td>D4</td> <td>2.4</td> </tr> </tbody> </table>	Natural light to comply with G7/AS1						Room area (m ²)	Min glazed area (m ²)	Window options	Achieved (m ²)	Living/Kitchen	55	5.5	D2/D3/W1	11.16				D2/D3/D3	12.6	Bed 1	18	1.8	W1 or D3	2.16 – 3.6	Bed 2	14	1.4	W1 or D3	2.16 – 3.6	Bathroom	8	0	W2	1	Garage /laundry	20/8	0/0	D4	2.4
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G8 Artificial light	<p>G8/AS1 specified as means of compliance. 20 lux minimum required to access routes. Minimum requirement shown on services plan. Table shows calculated W/m².</p>																																								
G9 Electricity	<p>Compliance with AS/NZS 3000 and NZECP 51 referenced. Products and options identified in the specification. Earthing and equipotential bonding requirements noted.</p>																																								

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G10 Piped services	G10/AS1 specified as means of compliance. AS/NZS 5601.1 Gas Installations referenced. Specification provided.																																			
G11 Gas as an energy source	G11/AS1 specified as means of compliance in the specification. AS/NZS 5601.1 Gas Installations referenced in the specification. Specification provided.																																			
G12 Water supplies	G12/AS1 specified as means of compliance. Gas instantaneous water heater specified. Sizes, products and options identified in the specification.																																			
G13 Foul water	G13/AS1 specified as means of compliance. AS/NZS 3500.2 referenced. Specification provided. Fixture locations, pipe sizes and layout, traps, gradients and materials showing on plumbing plan.																																			
G14 Industrial liquid waste	Not applicable.																																			
G15 Solid waste	Not applicable.																																			
H1 Energy efficient provisions	<p>H1/AS1 specified as means of compliance. NZS 4218 referenced. Schedule method used (glazing is $\leq 30\%$). R-value calculations provided for floor, walls and ceilings. R-values for glazing from NZS 4218 Table C1.</p> <table border="1"> <thead> <tr> <th colspan="5">Construction R-values</th> </tr> <tr> <th></th> <th>Zone 1&2</th> <th>Achieved</th> <th>Zone 3</th> <th>Achieved</th> </tr> </thead> <tbody> <tr> <td>Roof ¹</td> <td>R 2.9</td> <td>R 3.1</td> <td>R 3.3</td> <td>R 3.3</td> </tr> <tr> <td>Wall ²</td> <td>R 1.9</td> <td>Min R 2.07</td> <td>R 2.0</td> <td>Min R 2.07</td> </tr> <tr> <td>Floor ³</td> <td>R 1.3</td> <td>Min R 1.35</td> <td>R 1.3</td> <td>Min R 1.35</td> </tr> <tr> <td>Windows & glazing ⁴</td> <td>R 0.26</td> <td>Min 0.26</td> <td>R 0.26</td> <td>Min 0.26</td> </tr> <tr> <td>Skylights ⁵</td> <td>R 0.26</td> <td>R 0.26</td> <td>R 0.31</td> <td>R 0.31</td> </tr> </tbody> </table> <p>Note:</p> <ol style="list-style-type: none"> R3.6 fibreglass changes to R4.0 for Zone 3. R-value achieved increases to 2.16 where studs at 600mm crs. Min R-value achieved is for uninsulated slab. R-value increases to > 1.86 when RibRaft used. Insulated glass units in aluminium frame – clear glazing min 12mm space. Other glass options permitted. Up to two skylights permitted – 1.2m² max. Inner pane to be Low E for Zone 3. <p>Pipe insulation requirements specified in plumbing section.</p>	Construction R-values						Zone 1&2	Achieved	Zone 3	Achieved	Roof ¹	R 2.9	R 3.1	R 3.3	R 3.3	Wall ²	R 1.9	Min R 2.07	R 2.0	Min R 2.07	Floor ³	R 1.3	Min R 1.35	R 1.3	Min R 1.35	Windows & glazing ⁴	R 0.26	Min 0.26	R 0.26	Min 0.26	Skylights ⁵	R 0.26	R 0.26	R 0.31	R 0.31
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