Floor assembly

BE 1.1 Xlam wall + concrete floor slab
BE 1.2 Xlam + perimeter foundation
BE 1.3 Xlam + perimeter foundation
BE 1.4 Xlam + timber sub-floor
BE 1.5 Xlam + pole sub-floor
BE 1.6 Xlam floor + support beam
BE 1.7 Interior Xlam wall to floor
BE 1.8 Interior Xlam wall to concrete floor

Mid - floor assembly

BE 2.1 Xlam mid floor - balloon construction
BE 2.2 Xlam mid floor - platform construction - CLT wall
BE 2.3 Xlam mid floor - platform construction - frame wall

Roof assembly

BE 3.1 Xlam roof - soffit
BE 3.2 Xlam roof - ridge
BE 3.3 Xlam roof - barge

Plan details

BE 4.1 Internal corner - plan detail
BE 4.2 External corner - plan detail
BE 4.3 Xlam wall ‘T’ junction - plan detail

Window details

BE 5.1 Window head
BE 5.2 Window jamb
BE 5.3 Window sill

Acoustic construction

BE 6.1 Xlam Acoustic floor
BE 6.2 Xlam Acoustic wall
BE 6.3 Xlam Acoustic ceiling
BE 6.4 Xlam Acoustic inter-tenancy wall
BE 6.5 Xlam Acoustic inter-tenancy wall

Wet area construction

BE 7.1 Xlam wet area floor
BE 7.2 Xlam shower floor
BE 7.3 Xlam wet area wall

Thermal resistance calculations

BE 8.1 Guide to calculating thermal resistance for a CLT envelope

Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.

THERMAL RESISTANCE OF WALL - R 3.1
(REFER BE 8.1)
Details shown are indicative only and subject to project-specific design.

**VAPOR PERMEABLE MEMBRANE**

**25mm PHENOLIC INSULATION BOARD**

**45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD**

**VAPOUR PERMEABLE MEMBRANE**

**CAVITY BASE CLOSER**

**50mm MINIMUM OVERLAP**

**GROUND CLEARANCE TO CODE REQUIREMENTS**

**DETAILED VIEW**

**THERMAL RESISTANCE OF WALL - R 2.6**

**THERMAL RESISTANCE OF FLOOR - R 3.1**

*(REFER BE 8.1)*
VERTICAL TIMBER CLADDING, FIXED TO CAVITY BATTENS

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

CAVITY BASE CLOSER

50mm MINIMUM OVERLAP

XLAM 75mm CLT WALL PANEL

13mm PLASTERBOARD

BATTEN (BETWEEN METAL ANGLE CLEATS)

THERMAL RESISTANCE OF WALL - R 2.6
THERMAL RESISTANCE OF FLOOR - R 3.1
(REFER BE 8.1)
HORIZONTAL TIMBER CLADDING, FIXED TO CAVITY BATTENS
VAPOUR PERMEABLE MEMBRANE
25mm PHENOLIC INSULATION BOARD
45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD
VAPOUR PERMEABLE MEMBRANE
CAVITY BASE CLOSER
50mm MINIMUM OVERLAP

XLAM 75mm CLT WALL PANEL
13mm PLASTERBOARD
SELECTED FLOORING
XLAM 130mm CLT FLOOR PANEL
60mm EPS SHEET INSULATION

THERMAL RESISTANCE OF WALL - R 2.6
THERMAL RESISTANCE OF FLOOR - R 3.1
(REFER BE 8.1)
Details shown are indicative only and subject to project-specific design.

THERMAL RESISTANCE OF WALL - R 2.6
THERMAL RESISTANCE OF FLOOR - R 3.1
(REFER BE 8.1)
Details shown are indicative only and subject to project-specific design.
**INTERIOR XLAM WALL TO FLOOR**

- XLAM 75mm CLT WALL PANEL
- 13mm PLASTERBOARD
- SELECTED FLOORING
- XLAM 130mm CLT FLOOR PANEL
- 60mm EPS SHEET INSULATION

**THERMAL RESISTANCE OF FLOOR - R 3.1**

*(REFER BE 8.1)*

Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.

INTERIOR XLAM WALL TO CONCRETE FLOOR

Telephone: +64 (0) 3 538 0930
Email: enquiries@xlam.co.nz
Web: www.xlam.co.nz
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
Date. 08.05.13
Scale. 1:5 at A4
HORIZONTAL TIMBER CLADDING, FIXED TO CAVITY BATTENS

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)
Details shown are indicative only and subject to project-specific design.

**V 1.1**
Date. 08.05.13
Scale. 1:5 at A4

**BE 2.2**

**XLAM MID FLOOR - PLATFORM CONSTRUCTION - CLT WALL**

Telephone: +64 (0) 3 538 0930
Email: enquiries@xlam.co.nz
Web: www.xlam.co.nz
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

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**VERTICAL TIMBER CLADDING, FIXED TO CAVITY BATTENS**

**XLAM 75mm CLT WALL PANEL**

**13mm PLASTERBOARD**

**45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD**

**25mm PHENOLIC INSULATION BOARD**

**VAPOUR PERMEABLE MEMBRANE**

**CAVITY BASE CLOSER**

**FLASING TO CODE REQUIREMENTS**

**THERMAL RESISTANCE OF WALL - R 2.6**
* REFER BE 8.1
Details shown are indicative only and subject to project-specific design.
SELECTED ROOFING OVER UNDERLAY, ON GALVANISED MESH

PURLINS FIXED TO CLT WITH ENGINEERED WOOD SCREW

XLAM VENTILATING SPACER BATTEN OVER PURLIN

PURLIN ON SPACED PACKERS

FASCIA BOARD

PERIMETER SOFFIT VENT

SOFFIT LINING

XLAM 90mm CLT ROOF PANEL

XLAM 75mm CLT WALL PANEL

VERTICAL TIMBER CLADDING, FIXED TO CAVITY BATTENS

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

THERMAL RESISTANCE OF WALL - R 2.6
THERMAL RESISTANCE OF ROOF - R 3.8
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.

SELECTED ROOFING OVER UNDERLAY, ON GALVANISED MESH

PURLINS FIXED TO CLT WITH ENGINEERED WOOD SCREW

PURLIN ON SPACED PACKERS

XLAM VENTILATING SPACER BATTEN OVER PURLIN

XLAM 90mm CLT ROOF PANEL

XLAM 90mm CLT WALL PANEL

THERMAL RESISTANCE OF ROOF - R 3.8
(REFER BE 8.1)
SELECTED ROOFING OVER UNDERLAY, ON GALVANISED MESH

**XLAM** VENTILATING SPACER
BATTEN OVER PURLIN

**XLAM** 75mm CLT WALL PANEL

HORIZONTAL TIMBER CLADDING, FIXED TO CAVITY BATTENS

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

THERMAL RESISTANCE OF WALL - R 2.6
THERMAL RESISTANCE OF ROOF - R 3.8
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.

**INTERNAL CORNER - PLAN DETAIL**

- **HORIZONTAL TIMBER CLADDING,** FIXED TO CAVITY BATTENS
- 45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD
- VAPOUR PERMEABLE MEMBRANE
- 25mm PHENOLIC INSULATION BOARD
- VAPOUR PERMEABLE MEMBRANE
- **XLAM** 75mm CLT WALL PANELS
- 75 x 75mm FLASHING

**THERMAL RESISTANCE OF WALL - R 2.6**

*(REFER BE 8.1)*
EXTERNAL CORNER - PLAN DETAIL

Details shown are indicative only and subject to project-specific design.

HORIZONTAL TIMBER CLADDING, FIXED TO CAVITY BATTENS

45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

XLAM 75mm CLT WALL PANELS

VAPOUR PERMEABLE MEMBRANE CONTINUOUS AROUND CORNER

75 x 75mm FLASHING

SOAKER FLASHING

THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)
Details shown are indicative only and subject to project-specific design.

**XLAM WALL 'T' JUNCTION - PLAN DETAIL**

- **VERTICAL TIMBER CLADDING, FIXED TO CAVITY BATTENS**
- **45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD**
- **VAPOUR PERMEABLE MEMBRANE**
- **25mm PHENOLIC INSULATION BOARD**
- **VAPOUR PERMEABLE MEMBRANE**
- **XLAM 75mm CLT WALL PANELS**

**THERMAL RESISTANCE OF WALL - R 2.6**

(*REFER BE 8.1*)

**Telephone:** +64 (0) 3 538 0930  
**Email:** enquiries@xlam.co.nz  
**Web:** www.xlam.co.nz  
**57 Beatty St, Tahunanui, Nelson 7041, New Zealand**

**BE 4.3**

**V 1.1**

**Date:** 08.05.13  
**Scale:** 1:5 at A4
Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.

10mm MINIMUM COVER OVER CLADDING
HEAD FLASHING TO EXTEND 20mm BEYOND WINDOW FRAME
VAPOUR PERMEABLE MEMBRANE
25mm PHENOLIC INSULATION BOARD
VAPOUR PERMEABLE MEMBRANE
RETURN VAPOUR PERMEABLE MEMBRANE INTO OPENING
CONTINUOUS AIR SEAL
XLAM 75mm CLT WALL PANEL

THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)
SILL SUPPORT BAR

VERTICAL TIMBER CLADDING, FIXED TO CAVITY BATTENS

45mm CAVITY BATTEN, FIXED TO CLT THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

THERMAL RESISTANCE OF WALL - R 2.6 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design.
XLAM ACOUSTIC FLOOR PANEL

FLOORING LAID OVER BATTENS ON ACOUSTIC SHOE

ACOUSTIC INSULATION TO CAVITY

Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.
XLAM ACOUSTIC INTER-TENANCY WALL

Details shown are indicative only and subject to project-specific design.

XLAM CLT WALL PANELS
ACOUSTIC INSULATION TO CAVITY
CEILING LINING ON ACOUSTIC BATTEN
XLAM WET AREA FLOOR

Details shown are indicative only and subject to project-specific design.
Details shown are indicative only and subject to project-specific design.

XLAM SHOWER FLOOR

FLOOR TILE
WATERPROOFING MEMBRANE
TILE UNDERLAY
STAINLESS STEEL TRAY LAID OVER XLAM PANEL,
TURN TRAY 100mm UP WALLS. PROVIDE EMERGENCY
OVERFLOW TO EXTERIOR OF BUILDING.

XLAM CLT FLOOR PANEL
Details shown are indicative only and subject to project-specific design.
# Guide to Calculating Thermal Resistance for a CLT Building Envelope

<table>
<thead>
<tr>
<th>Building Element</th>
<th>R-Value</th>
<th>Floor</th>
<th>Wall</th>
<th>Roof</th>
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</thead>
<tbody>
<tr>
<td>Internal surface resistance</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
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<tr>
<td>Interior lining 13mm plaster board</td>
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<tr>
<td>20mm still air gap</td>
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<td>60mm CLT panel</td>
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<td>75mm CLT panel</td>
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<td>90mm CLT panel</td>
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<td>105mm CLT panel</td>
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<td>130mm CLT panel</td>
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<td>145mm CLT panel</td>
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<td>175mm CLT panel</td>
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<td>60mm EPS sheet insulation</td>
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<td>25mm phenolic insulation board</td>
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<td>90mm fibreglass batt insulation</td>
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<td>19mm wood cladding</td>
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<td>Metal roofing</td>
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<tr>
<td>Total Construction R-Value</td>
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<td>3.08</td>
<td>2.595</td>
<td>3.76</td>
</tr>
</tbody>
</table>

Note: In practice the total construction R-values will vary from the above to take account of factors such as thermal bridging through purlins and battens, penetrations etc.