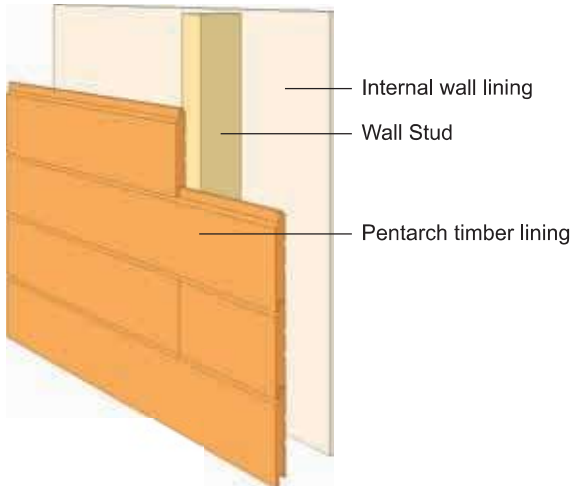


5. Installation of Timber Linings

5.1 LINING INSTALLATION-HORIZONTAL DIRECT FIXING TO INTERIOR FRAMED WALL

The lining battens are normally fixed into the solid timber studs (timber frame sub-structure) at maximum 600mm centres.

Figure 17: Horizontal fixing – direct fix



1. Check studs for straightness and plumb. Pack or plane level as required. Studs at maximum 600mm centres.
2. Fixing is to occur at a maximum of 600mm centres and using two fixings per crossing.
3. Nailing through overlaps must be avoided but must still provide restraint to the inner board, as shown in Figure 15. Boards also should be nailed 15mm away from edges to avoid splitting of thinner sections, or rebated overlaps. Board ends should be pre-drilled to prevent splitting.
4. Install a starter lining board at the bottom. Ensure bottom of the board is well clear of horizontal surface.
5. Install lining boards on top of starter board. Follow the increment markings or use spacers to maintain an expansion gap. Check level of each board.
6. Place butt end joints over a stud. Stagger any butt end joints up the wall.
7. Ensure end grain of each board is sealed prior to installation.

5.2 LINING INSTALLATION-VERTICAL DIRECT FIXING TO INTERIOR FRAMED WALL

For fixing lining diagonally, a maximum stud spacing of 600mm is recommended (this is to provide a 600mm spacing for cladding).

1. Check studs for straightness and plumb. Pack or plane level as required. Studs maximum 600mm centres.
2. For corner details see Figures 12, 13 and 14.
3. Mark the board increments on the battens. Make sure to allow for loose fitting/expansion gaps.
4. Fixing is to occur at a maximum of 600mm centres and using one (secret fixing) or two fixings (face fixing) per crossing.
5. Nailing through overlaps must be avoided but must still provide restraint to the inner board. Boards also should be nailed 15mm away from edges to avoid splitting of thinner sections, or rebated overlaps. Board ends should be pre-drilled to prevent splitting.
6. Ensure bottom of the boards is above finished ground level.
7. Install subsequent cladding boards on top of starter board. Follow the increment markings or use spacers to maintain an expansion gap. Check level of each board before fixing.
8. Place butt end joints over a stud or batten. Use double battens to support abutting boards. Stagger any butt end joints up the wall.
9. Ensure end grain of each board is sealed prior to installation.

5.3 LINING INSTALLATION-DIAGONAL DIRECT FIXING TO INTERIOR FRAMED WALL

For fixing lining diagonally a maximum stud spacing of 400mm is recommended (this is to provide a 600mm spacing for cladding).

1. Check studs for straightness and plumb. Pack or plane level as required. Studs maximum 400mm centres.
2. For corner details see Figures 12, 13 and 14.
3. Mark the board increments on the battens. Make sure to allow for loose fitting or expansion gaps.
4. Fixing is to occur at a maximum of 600mm centres and using two fixings per crossing (face fixing is recommended).
5. Nailing through overlaps must be avoided but must still provide restraint to the inner board. Boards also should be nailed 15mm away from edges to avoid splitting of thinner sections, or rebated overlaps. Board ends should be pre-drilled to prevent splitting.
6. Ensure bottom of the boards is above finished ground level.

7. Install subsequent cladding boards on top of starter board. Follow the increment markings or use spacers to maintain an expansion gap. Check level of each board before fixing.
8. Place butt end joints over a stud or batten. Use double battens to support abutting boards. Stagger any butt end joints up the wall.

Ensure end grain of each board is sealed prior to installation.

5.4 FACE FIXING OF LINING

Tables 6 and 7 provide further details on specific nail types and sizes for face fixing of lining for different underlying framing of 80mm lining boards, respectively. All nails are to be flat, D or bullet headed. The recommended nail diameter should not be exceeded otherwise splitting may occur. Where lining is installed over a cavity the battens need to be fixed to studs as per minimum recommendations detailed under each lining installation method.

Table 6: Minimum hand driven nail sizes for face fixing of 80mm lining boards to timber framing or cavity battens

Timber framing/ batten type	Hardwood	Softwood
Nail size and type	50 x 2.0mm plain	60 x 2.8mm twisted or annular treaded
Minimum penetration	30mm	40mm

Table 7: Minimum hand driven nail sizes for face fixing of 130mm lining boards to timber framing or cavity battens

Timber framing/ batten type	Hardwood	Softwood
Nail size and type	50 x 2.5mm plain	60 x 2.8mm twisted or annular treaded
Minimum penetration	30mm	40mm

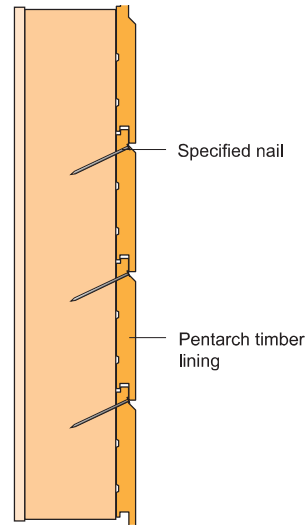
Nails should be placed at least 15mm from from the edge and end of lining board.

Where machine nails or screws are used they need to be equivalent in performance to nails defined in Table 6 and 7. As machine nails and screws vary from manufacturer to manufacturer, the manufacturer should be consulted regarding the adequacy of the fixing. T-nails should never be used.

5.5 SECRET FIXING OF LINING

Pentarch lining profiles may be secret fixed using one fixing per intersection with batten, stud or bottom chord – driven into tongue at an angle. See Figure 18 below.

Figure 18: Secret fixing linings



Secret fixed boards also need to be glued to the batten.

A continuous bead (6mm to 10mm approximately) of adhesive rated for exterior use is to be applied to the batten before fixing.

Tables 8 and 9 provide further details on specific nail types and sizes for secret fixing of lining for different underlying framing of 80mm lining boards, respectively. All nails to be flat, D or bullet headed. The recommended nail diameter should not be exceeded otherwise splitting may occur. Where lining is installed over a cavity the battens need to be fixed to studs as per minimum recommendations detailed under each lining installation method.

Table 8: Minimum hand driven nail sizes for secret fixing of 80mm lining boards to timber framing or cavity battens

Timber framing/ batten type	Hardwood	Softwood
Nail size and type	50 x 2.5mm plain	60 x 2.8mm twisted or annular treaded
Minimum penetration	30mm	40mm

Table 9: Minimum hand driven nail sizes for face fixing of 130mm lining boards to timber framing or cavity battens

Timber framing/ batten type	Hardwood	Softwood
Nail size and type	50 x 3.75mm plain	60 x 3.75mm twisted or annular treaded
Minimum penetration	30mm	40mm

5.6 SOFFITS AND EAVES

For design of soffits, external ceiling and eaves in terms of connections and sub structure please refer to cladding design and installation sections.