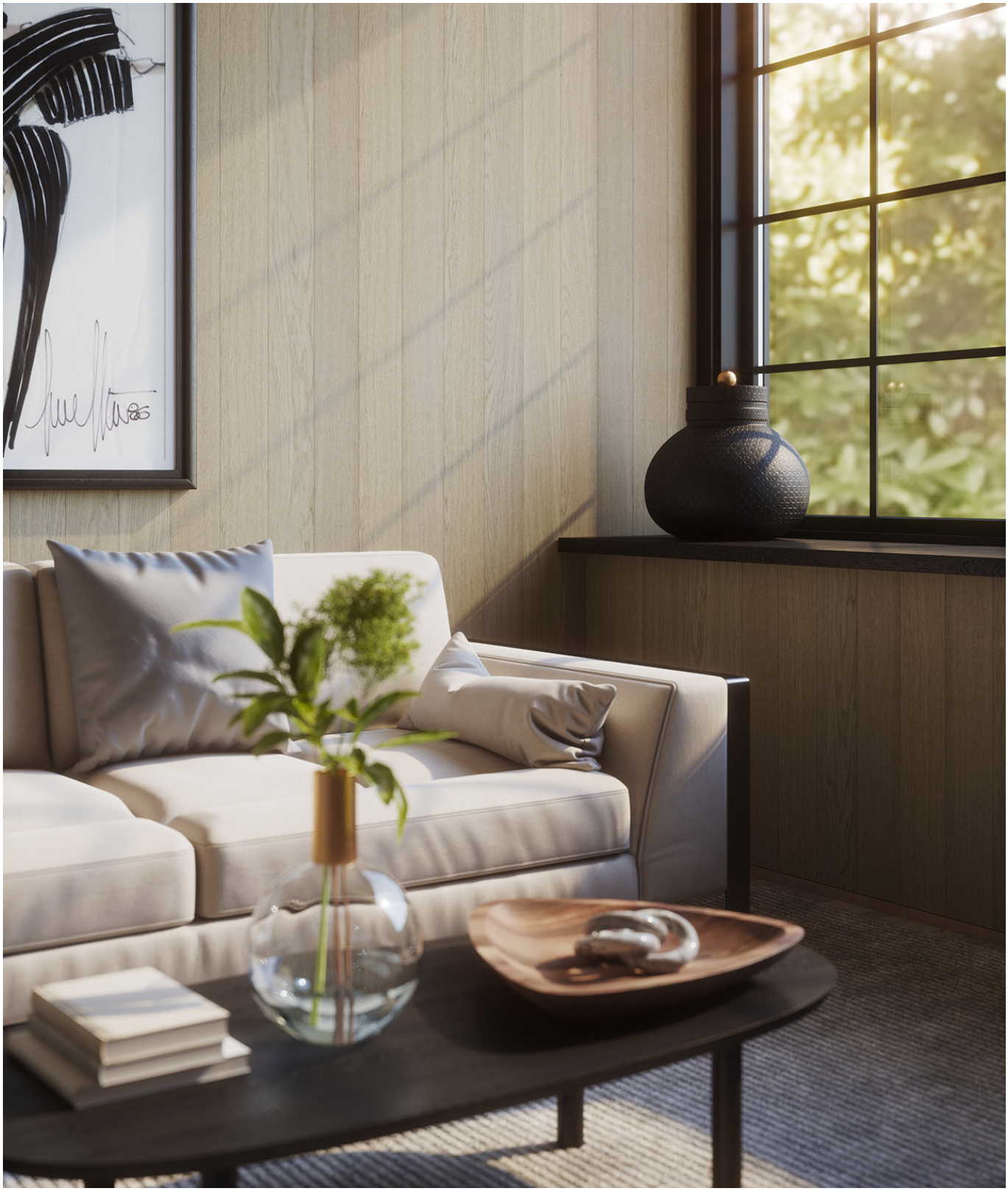
EDITION 2.0 — DECEMBER 2023

Wall Panelling Design & Installation Guide – Engineered Plank



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1. Muuro Timber Panelling

1.1 DESIGN REQUIREMENTS/LIMITATIONS

- For internal use only.
- Ensure the wall is load-rated to handle the weight of the product.
- Commercial spaces: must meet Group 1-S fire rating.
- 5-10mm expansion gaps around the perimeter and all fixed items must be considered and allowed for in design.
- Not recommended for use in areas subject to high moisture content (more information below).
- Maximum 400mm spacing when fixing directly to wall framing/battens.

1.2 STORAGE

The panelling should be left flat in the original unopened packaging in the areas it is to be installed in for at least 48 hours prior to installation, this allows the product to acclimatise to the room temperature and minimise the likelihood of any shrinkage or swelling. The timber should be stored out of direct sunlight, away from walls and radiators. It is recommended to place stored packs on battens/dunnage to minimise moisture absorption from the sub-floor.

The product should be kept in a shaded and protected dry place (18°C to 25°C). Do not store the panelling outside.

1.3 WALL PREPARATION GUIDELINES

The wall should be checked for any unevenness and should be flat across the face of the wall before installation (±3 mm for every 3m in any direction as per NZS 3604 for timber walls).

1.4 INSTALLATION

Before proceeding to installation, please check if any of the below points are applicable to your installation.

Installation in Wet Areas
Forté does not recommend installing Engineered Timber Panelling into areas subject to high moisture content or water splashes such as kitchen splashbacks, bathrooms, toilets or laundries and shall not be held responsible for any water or moisture-related damage sustained by our timber panelling. If you wish to install the product into one of these areas, please contact Forté.

If you decide to install in one of these areas;

- Use zinc-coated finishing brads/nails in wet areas.
- All edges and cut-outs that may be vulnerable to water splashes or condensation must be protected from moisture egress with a silicone type sealant suitable for wet areas.
- If the product is unfinished, we recommend that a sealing coat should be applied.
- Ensure there is enough ventilation, and we recommend a suitable extractor fan is installed in the room to prevent the room from sustaining a humidity level over 60%.

1. Before you Start

- Ensure the building is closed in and fully weather tight.
- Ensure wall is load rated to handle weight of product.

2. Tools/Equipment

- Mitre saw/Drop saw.
- Circular saw/table saw.
- Measuring tape.
- Finishing/Brad nailer gun.
- Fixings:
  - » If fixing over Gib/Plasterboard; 16-gauge (1.6mm) x 50mm Finishing Brad/Nail.
  - » All other substrates; 16-gauge (1.6mm) x 45mm Finishing Brad/Nail.
- Adhesive: We recommend using Mapei Ultrabond S997 1K Adhesive in sausages.
- Caulking Sausage Gun.
- Spirit level.
- Rags/wipes for cleaning up excess adhesive.

3. Installation Conditions

The surface temperature of the substrate, at the time of installation, should be at least 15°C but never exceed 27°C, with the ideal indoor relative humidity between 45% and 55% (but never below 30% or exceed 60%). If temperatures are outside of this range, you may experience irreversible shrinkage or swelling of the boards. For this reason, we strongly recommend the use of a humidification or dehumidification system for temperatures outside this range.

4. Preparing to Install

a) Client approval
   - Where possible, open a pack of the panelling and show the client to confirm they are satisfied, and it meets their expectations.

b) Decide direction of panelling installation
   - Decide on the direction you would like the panelling to run.

c) Check substrate moisture content
   - At all times, the moisture content of the framing/plywood/battens you are fixing to must be no more than 12%, and the difference in moisture content between the substrate and panelling should be no more than 4%.

d) Allow for expansion
   - An allowance of 5-10mm should be provided around the perimeter as well as any fixed items in the area where the flooring is to be laid to allow for expansion (including doorways, heating tube outlets, connections with tiles, etc).
   - Spacing wedges/shims should be used to assist in maintaining the expansion gaps during installation.

e) Skirting/Scotia
   - Consider removing skirting/scotia from the walls where the panelling is being installed for a more seamless look.

f) Orientation
   - Always begin installation with the tongue side of the board facing in the direction you are installing. This allows you to fix through the tongue.

g) Level
   - You will want to make sure your first plank is installed straight, so the rest of the planks line up correctly. Before fixing the first plank, hold it in place while you check the edge of the plank with a spirit level. If this is not level, you will need to trim down the outside edge of the plank.

h) Width
   - Before starting installation, you should calculate the layout to allow for the last row to be at least a half-board width. This is to avoid getting to the last row and having to fit a very narrow plank, which does not look good, particularly if the wall is not straight.

5. Installation Method

- As Muuro is a veneer product, there will be planks with identical grain pattern. To avoid repeating the grain pattern during installation, we suggest you check each board before installation and always work out of 2-3 different packs concurrently.
- During installation, a wooden block should be held against the tongue to tap the boards together. Do not use force during the joining. Never hit the product directly with the hammer. This is to avoid either the tongue or finished edges from being damaged.

- For horizonal installations, start at the bottom of the wall and work your way up. Gravity will hold the planks in place making it easier to install.
- The first row should be started using a full-length plank, and you can use the off-cut to start the next row. This allows you to stagger the end joints.
- **End joints should always be a minimum of 30cm apart.**

a) <u>When installing directly to framing timber</u>

When installing horizontally, fix to the studs. When installing vertically, fix to the nogs. The spacing of these should be a maximum of 400mm. If greater than 400mm, you will need to install more framing to achieve this. If this not possible, install plywood and follow Method C ('When installing to Plywood').

1. **Apply adhesive:** Evenly squiggle adhesive to the framing in the immediate area of installation.
2. **Fix panelling:** Fasten planks to the framing using the brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 400mm.

b) <u>When installing to Gib/Plasterboard</u>

When installing to plasterboard, you will need to fix to the framing behind. When installing horizontally, fix to the studs. When installing vertically, fix to the nogs.

Use a stud finder to ensure the framing is no greater than 400mm apart. If greater than 400mm, you will need to install plywood and follow Method C ('When installing to Plywood').

Note: If the plasterboard has been painted, we recommend you sand this with 60-grit before installing to ensure good adhesion when installing.

1. **Marking:** Mark out where the framing is on the plasterboard so you can locate these when fixing.
2. **Apply adhesive:** Evenly Squiggle (diagonal beads 5cm apart) adhesive onto the back of each board. Keep 10mm away from all edges.
3. **Fix panelling:** Fasten planks to the framing using the brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 400mm.

c) <u>When installing to Plywood</u>

When installing to Plywood, you can fix directly to it and not the framing behind. To do this the Plywood must be at least 9mm thick.

1. **Sand:** Prepare the plywood surface by sanding with 60-grit to smooth the surface and ensure there is no lipping between plywood sheets.
2. **Apply adhesive:** Evenly Squiggle (diagonal beads 5cm apart) adhesive onto the back of each board. Keep 10mm away from all edges.
3. **Fix panelling:** Fasten planks to the plywood using the brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 400mm.

d) <u>When installing to Concrete/Brick/Blockwork</u>

Firstly, ensure that moisture does not get through the substrate. If applicable, apply a waterproof membrane to seal the substrate and prevent moisture ingress.

1. **Install Battens:** You will need to install timber battens onto the substrate at 400mm centres. The battens should be a minimum of 50x25mm and should be dressed. Predrill the substrate, then fix the battens to the substrate using concrete screws.
2. **Apply Adhesive:** Evenly squiggle adhesive to the battens in the immediate area of installation.
3. **Fix Panelling:** Fasten planks to the battens using a brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 400mm.

6. Post-Installation Checklist

- Perform touch-ups and clean up marks/glue spillages as required.
- Remove expansion shims and install any mouldings as required.
- Fill any gaps around planks with a matching filler.
- Caulking/Silicone where required.

2. Salvare, Tactile and Imondi Timber Panelling

2.1 DESIGN REQUIREMENTS/LIMITATIONS

- For internal use only.
- Ensure the wall is load-rated to handle the weight of the product.
- Commercial spaces: must meet Group 1-S fire rating.
- 5mm expansion gaps around the perimeter and all fixed items must be considered and allowed for in design.
- Not recommended for use in areas subject to high moisture content (more information below).
- Maximum 600mm spacing when fixing directly to wall framing/battens.

2.2 STORAGE

The panelling should be left flat in the original unopened packaging in the areas it is to be installed in for at least 48 hours prior to installation, this allows the product to acclimatise to the room temperature and minimise the likelihood of any shrinkage or swelling. The timber should be stored out of direct sunlight, away from walls and radiators. It is recommended to place stored packs on battens/dunnage to minimise moisture absorption from the sub-floor.

The product should be kept in a shaded and protected dry place (18°C to 25°C). Do not store the panelling outside.

2.3 WALL PREPARATION GUIDELINES

The wall should be checked for any unevenness and should be flat across the face of the wall before installation (±3 mm for every 3m in any direction as per NZS 3604 for timber walls).

2.4 INSTALLATION

Before proceeding to installation, please check if any of the below points are applicable to your installation.

Installation in Wet Areas
Forté does not recommend installing Engineered Timber Panelling into areas subject to high moisture content or water splashes such as kitchen splashbacks, bathrooms, toilets or laundries and shall not be held responsible for any water or moisture-related damage sustained by our timber panelling. If you wish to install the product into one of these areas, please contact Forté.

If you decide to install in one of these areas;

- Use zinc-coated finishing brads/nails in wet areas.
- All edges and cut-outs that may be vulnerable to water splashes or condensation must be protected from moisture egress with a silicone type sealant suitable for wet areas.
- If the product is unfinished, we recommend that a sealing coat should be applied.
- Ensure there is enough ventilation, and we recommend a suitable extractor fan is installed in the room to prevent the room from sustaining a humidity level over 60%.

1. Before you Start

- Ensure the building is closed in and fully weather tight.
- Ensure wall is load rated to handle weight of product.

2. Tools/Equipment

- Mitre saw/Drop saw.
- Circular saw/table saw.
- Measuring tape.
- Finishing/Brad nailer gun.
- Fixings:
  - » If fixing over Gib/Plasterboard; 16-gauge (1.6mm) x 50mm Finishing Brad/Nail.
  - » All other substrates; 16-gauge (1.6mm) x 45mm Finishing Brad/Nail.
- Adhesive: We recommend using Mapei Ultrabond S997 1K Adhesive in sausages.
- Caulking Sausage Gun.
- Spirit level.
- Rags/wipes for cleaning up excess adhesive.

3. Installation Conditions

The ambient temperature of the room at the time of installation should be at least 15°C but never exceed 27°C, with the ideal indoor relative humidity between 45% and 55% (but never below 30% or exceed 60%). If temperatures are outside of this range, you may experience irreversible shrinkage or swelling of the boards. For this reason, we strongly recommend the use of a humidification or dehumidification system for temperatures outside this range.

4. Preparing to Install

a) Client approval
   - Where possible, open a pack of the panelling and show the client to confirm they are satisfied, and it meets their expectations.

b) Decide direction of panelling installation
   - Decide on the direction you would like the panelling to run.

c) Check substrate moisture content
   - At all times, the moisture content of the framing/plywood/battens you are fixing to must be no more than 12%, and the difference in moisture content between the substrate and panelling should be no more than 4%.

d) Allow for expansion
   - An allowance of 5-10mm should be provided around the perimeter as well as any fixed items in the area where the wall panelling is to be installed to allow for expansion.
   - Spacing wedges/shims should be used to assist in maintaining the expansion gaps during installation.

e) Skirting/Scotia
   - Consider removing skirting/scotia from the walls where the panelling is being installed for a more seamless look.

f) Orientation
   - Always begin installation with the tongue side of the board facing in the direction you are installing. This allows you to fix through the tongue.

g) Width
   - Before starting installation, you should calculate the layout to allow for the last row to be at least a half-board width. This is to avoid getting to the last row and having to fit a very narrow plank, which does not look good, particularly if the wall is not straight.

h) Level
   - You will want to make sure your first plank is installed straight, so the rest of the planks line up correctly. Before fixing the first plank, hold it in place while you check the edge of the plank with a spirit level. If this is not level, you will need to trim down the outside edge of the plank.

5. Installation Method

- Always work out of 2-3 different packs concurrently to ensure consistency throughout the area. Engineered Timber Panelling is a natural product and will showcase colour variation, every plank will be slightly different.
- During installation, a wooden block should be held against the tongue to tap the boards together. Do not use force during the joining. Never hit the product directly with the hammer. This is to avoid either the tongue or finished edges from being damaged.
- For horizonal installations, start at the bottom of the wall and work your way up. Gravity will hold the planks in place making it easier to install.

- The first row should be started using a full-length plank, and you can use the off-cut to start the next row. This allows you to stagger the end joints.
- **End joints should always be a minimum of 30cm apart.**

a) When installing directly to framing timber

When installing horizontally, fix to the studs. When installing vertically, fix to the nogs. The spacing of these should be a maximum of 600mm. If greater than 600mm, you will need to install more framing to achieve this. If this not possible, install plywood and follow Method C ('When installing to Plywood').

1. **Apply adhesive:** Evenly squiggle adhesive to the framing in the immediate area of installation.
2. **Fix panelling:** Fasten planks to the framing using the brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 600mm.

b) When installing to Gib/Plasterboard

When installing to plasterboard, you will need to fix to the framing behind. When installing horizontally, fix to the studs. When installing vertically, fix to the nogs.

Use a stud finder to ensure the framing is no greater than 600mm apart. If greater than 600mm, you will need to install plywood and follow Method C ('When installing to Plywood').

Note: If the plasterboard has been painted, we recommend you sand this with 60-grit before installing to ensure good adhesion when installing.

1. **Marking:** Mark out where the framing is on the plasterboard so you can locate these when fixing.
2. **Apply adhesive:** Evenly Squiggle (diagonal beads 5cm apart) adhesive onto the back of each board. Keep 10mm away from all edges.
3. **Fix panelling:** Fasten planks to the framing using the brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 600mm.

c) When installing to Plywood

When installing to Plywood, you can fix directly to it and not the framing behind. To do this the Plywood must be at least 9mm thick.

1. **Sand:** Prepare the plywood surface by sanding with 60-grit to smooth the surface and ensure there is no lipping between plywood sheets.
2. **Apply adhesive:** Evenly Squiggle (diagonal beads 5cm apart) adhesive onto the back of each board. Keep 10mm away from all edges.
3. **Fix panelling:** Fasten planks to the plywood using the brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 600mm.

d) When installing to Concrete/Brick/Blockwork

Firstly, ensure that moisture does not get through the substrate. If applicable, apply a waterproof membrane to seal the substrate and prevent moisture ingress.

1. **Install Battens:** You will need to install timber battens onto the substrate at 600mm centres. The battens should be a minimum of 50x25mm and should be dressed. Predrill the substrate, then fix the battens to the substrate using concrete screws.
2. **Apply Adhesive:** Evenly squiggle adhesive to the battens in the immediate area of installation.
3. **Fix Panelling:** Fasten planks to the battens using a brad nailer by secret nailing on an angle through the tongue. Ensure you have a fixing at least every 600mm.

6. Post-Installation Checklist

- Perform touch-ups and clean up marks/glue spillages as required.
- Remove expansion shims and install any mouldings as required.
- Fill any gaps around planks with a matching filler.
- Caulking/Silicone where required.

3. Salvare Lamella Timber Panelling

3.1 DESIGN REQUIREMENTS/LIMITATIONS

- For internal use only.
- Ensure the wall is load-rated to handle the weight of the product.
- Commercial spaces: must meet Group 1-S fire rating.
- 5mm expansion gaps around the perimeter and all fixed items must be considered and allowed for in design.
- Not suitable for wet areas or areas subject to high moisture content (more information below).
- Must be fixed to a suitable backing (more information below).

3.2 STORAGE

The lamella should be left flat in the original unopened packaging in the areas it is to be installed in for at least 48 hours prior to installation, this allows the product to acclimatise to the room temperature and minimise the likelihood of any shrinkage or swelling. The timber should be stored out of direct sunlight, away from walls and radiators. It is recommended to place stored packs on battens/dunnage to minimise moisture absorption from the sub-floor.

The product should be kept in a shaded and protected dry place (18°C to 25°C). Do not store the lamella outside.

3.3 WALL PREPARATION GUIDELINES

The wall should be checked for any unevenness and should be flat across the face of the wall before installation (±3 mm for every 3m in any direction as per NZS 3604 for timber walls).

3.4 INSTALLATION GUIDELINES

1. Before you Start

- Ensure the building is closed in and fully weather tight.
- Ensure wall is load rated to handle weight of product.

2. Tools/Equipment

- Mitre saw/Drop saw.
- Circular saw/table saw.
- Measuring tape.
- 18/20-gauge finishing/brad nailer.
  - » Fixings: 18/20-gauge (1.2mm) x 20mm finishing/brad nail.
  - » Adhesive: We recommend using **Mapei Ultrabond S997 1K Adhesive** in sausages.
- Caulking Sausage Gun.
- Spirit level.
- Rags/wipes for cleaning up excess adhesive.

3. Installation Conditions

The ambient temperature of the room at the time of installation should be at least 15°C but never exceed 27°C, with the ideal indoor relative humidity between 45% and 55% (but never below 30% or exceed 60%). If temperatures are outside of this range, you may experience irreversible shrinkage or swelling of the boards. For this reason, we strongly recommend the use of a humidification or dehumidification system for temperatures outside this range.

4. Preparing to Install

a) Client approval
   - Where possible, open a pack of the lamella and show the client to confirm they are satisfied, and it meets their expectations.

1. Before you Start

- Ensure the building is closed in and fully weather tight.
- Ensure wall is load rated to handle weight of product.

2. Tools/Equipment

- Mitre saw/Drop saw.
- Circular saw/table saw.
- Measuring tape.
- 18/20-gauge finishing/brad nailer.
  - » Fixings: 18/20-gauge (1.2mm) x 20mm finishing/brad nail.
  - » Adhesive: We recommend using **Mapei Ultrabond S997 1K Adhesive** in sausages.
- Caulking Sausage Gun.
- Spirit level.
- Rags/wipes for cleaning up excess adhesive.

3. Installation Conditions

The ambient temperature of the room at the time of installation should be at least 15°C but never exceed 27°C, with the ideal indoor relative humidity between 45% and 55% (but never below 30% or exceed 60%). If temperatures are outside of this range, you may experience irreversible shrinkage or swelling of the boards. For this reason, we strongly recommend the use of a humidification or dehumidification system for temperatures outside this range.

4. Preparing to Install

a) Client approval
   - Where possible, open a pack of the lamella and show the client to confirm they are satisfied, and it meets their expectations.

b) Decide direction of lamella installation
   - Decide on the direction you would like the lamella to run.

c) Prepare substrate and ensure it is structurally sound
   - Ensure substrate is completely dry and free of cracks, mould and dust and is structurally sound before proceeding with installation (do not install over wallpaper or flaking paint).

d) Check substrate moisture content (if Plywood substrate)
   - At all times, the moisture content of the Plywood you are fixing to must be no more than 12%, and the difference in moisture content between the Plywood and lamella should be no more than 4%.

e) Allow for expansion
   - An allowance of 5-10mm should be provided around the perimeter as well as any fixed items in the area where the lamella is to be installed to allow for expansion.
   - Spacing wedges/shims should be used to assist in maintaining the expansion gaps during installation.

f) Skirting/Scotia
   - Consider removing skirting/scotia from the walls where the lamella is being installed for a more seamless look.

g) Width
   - Before starting installation, you should calculate the layout to allow for the last row to be at least a half-board width. This is to avoid getting to the last row and having to fit a very narrow plank, which does not look good, particularly if the wall is not straight.

h) Level
   - You will want to make sure your first plank is installed straight, so the rest of the planks line up correctly. Before fixing the first plank, hold it in place while you check the edge of the plank with a spirit level. If this is not level, you will need to trim down the outside edge of the plank.

5. Installation Method

- Always work out of 2-3 different packs concurrently to ensure consistency throughout the area. Lamella is a natural product and will showcase colour variation, every plank will be slightly different.
- For horizontal installations, start at the bottom of the wall and work your way up. Gravity will hold the planks in place making it easier to install.
- End joints should be a minimum of 30cm apart and randomly staggered.

a) <u>When installing to Gib/Plasterboard</u>

Note: If the plasterboard has been painted, we recommend you sand this with 60-grit before installing to ensure good adhesion when installing.

1. **Apply adhesive:** Evenly squiggle (diagonal beads 5cm apart) adhesive onto the back of each plank. Keep 10mm away from all edges.
2. **Fix lamella:** Fasten planks to the substrate using the brad nailer. Space the brads from one side of the plank to the other at 400mm–600mm centres. Ensure fixings are a minimum of 15mm-20mm from the outside edges of the plank, as well as each corner of the plank.
   Tip: To minimise the appearance of the brads, angle down if above eye level and angle up if below eye level.

b) <u>When installing to Plywood</u>

When installing to Plywood, you can fix directly to it and not the framing behind. To do this the Plywood must be at least 9mm thick.

1. **Sand:** Prepare the plywood surface by sanding with 60-grit to smooth the surface and ensure there is no lipping between Plywood sheets.
2. **Apply adhesive:** Evenly squiggle (diagonal beads 5cm apart) adhesive onto the back of each board. Keep 10mm away from all edges.
3. **Fix lamella:** Fasten planks to the substrate using the brad nailer. Space the brads from one side of the board to the other at 400mm–600mm centres. Ensure fixings are a minimum of 15mm-20mm from the outside edges of the plank, as well as each corner of the plank.
   Tip: To minimise the appearance of the brads, angle down if above eye level and angle up if below eye level.

6. Post-Installation Checklist

- Perform touch-ups and clean up marks/glue spillages as required.
- Remove expansion shims and install any mouldings as required.
- Fill any gaps around planks with a matching caulking/filler where required (avoid getting caulking/filler on the lamella surface as it is difficult to get off).

4. CARE & MAINTENANCE

Refer to www.forte.co.nz/careandmaintenance

5. RETURNS POLICY

Refer to www.forte.co.nz/returns

6. WARRANTY CLAIMS

Refer to www.forte.co.nz/warranty