

Thermory thermo-ash ceiling
Building: Centro Arte Moderna Gulbenkian
Architect: Kengo Kuma & Associates
Photography: Fernando Guerra



Please read this guide in full before commencing installation. Incorrect installation will void any applicable warranty.

IMPORTANT INFORMATION

Smartdeck supplies several species of thermally modified timber for cladding and lining, in a variety of profiles, from Thermory, Novawood and other premium suppliers. Some profiles can be installed with hidden fastening clip systems, others require top fixing with screws or nails. This guide relates to profiles that require screw or nail installation through the timber. **Thermo-ash** and **thermo-oak** are dense hardwoods, almost identical in appearance and performance. **Thermo-ayous** is a lightweight hardwood and **thermo-pine** and **thermo-spruce** are softwoods. Appropriate termite protection methods must be used with all species. Thermal modification increases resistance to termites in ash, oak and spruce but none are completely resistant to termite attack.

In Europe, natural uncoated thermally modified wood does not require any special care other than cleaning, however in Australia's harsher climate **we strongly recommend pre-coating all cladding boards on all sides prior to installation** with a penetrating oil such as Equisol® or Cutek®. This minimises surface and end-checking. See the separate maintenance guide for recommended coating protocol after installation, particularly if the requirement is to maintain the colour of the timber.

Thermally modified cladding boards are durable and remain weather resistant for decades. **WHEN USING THERMALLY MODIFIED CLADDING OUTDOORS, THE SURFACE OF THE BOARDS WILL NATURALLY TURN GRAY OVER TIME, JUST LIKE ANY OTHER WOOD PRODUCT.** This process begins immediately after the products are installed and can take anything from a few months to several years depending on the species and intensity of UV radiation they're exposed to.

Check the boards thoroughly for possible transport-related damage prior to installation, and never install defective boards. **ONCE INSTALLED, PRODUCTS ARE DEEMED TO HAVE BEEN ACCEPTED IN TERMS OF QUALITY.** Sometimes a board will have a crack or split in the end. This should be docked and the cut end sealed with a penetrating oil prior to installation. A small crack or damage in a tongue

that is not visible when installed is acceptable, however a visible crack or missing section of tongue that exceeds 200mm should not be installed. Either cut this section out of the board and use the remainder, or set the board aside if there is insufficient useable board. **Please photograph and document all boards deemed defective and notify Smartdeck as soon as possible**, and within a month of receiving the boards. If we request it, please keep all defective boards for collection.

TIMBER COLOUR

Keep in mind that wood is a natural material and so any color changes may be uneven. Each board ages in its own way, and different sides of a building's facade will also age differently depending on the sun and rain they're exposed to. Cladding boards can be coated with a UV-resistant pigmented finish such as a stain, paint or penetrating oil to reduce discoloration or freshen up their appearance. Natural linseed-based oils are not recommended, as they contain substances that provide a food source for biological organisms such as bacteria, mold, etc, however modified linseed oil based coatings such as Equisol Pro E365 are recommended. Oil and paint should only be applied to clean, dust-free surfaces. Before using a tinted finishing product, mix it thoroughly and test the suitability of the shade on a small area. Note that oils appear darker for several weeks after application. Always follow the application instructions provided by the manufacturer as application and drying times can vary.

OILED CLADDING BOARDS

The expected service lifetime of pigmented oil is 1-3 years, depending on weather conditions and the orientation of the wall. The oil will continue to provide protection against moisture ingress beyond this timeframe, but the pigment will become powdery and the timber will need to be cleaned before re-coating, if using Equisol® or Cutek® (recommended coatings in Australia).



Thermory Benchmark
Thermo-Pine

Architect:
Catherine Pageau

Location:
GEORGIA, USA

1. STORAGE

Whenever possible, unoiled cladding boards should be stored indoors. The cladding should also be kept away from direct sunlight as UV rays will cause the color of the boards to fade where exposed.

If stored outside, the boards should be elevated at least 150 mm from the ground, stacked evenly, and protected with a waterproof, light-impermeable cover.

Leave the ends of the cover unfastened to allow for ventilation while still preventing moisture damage.

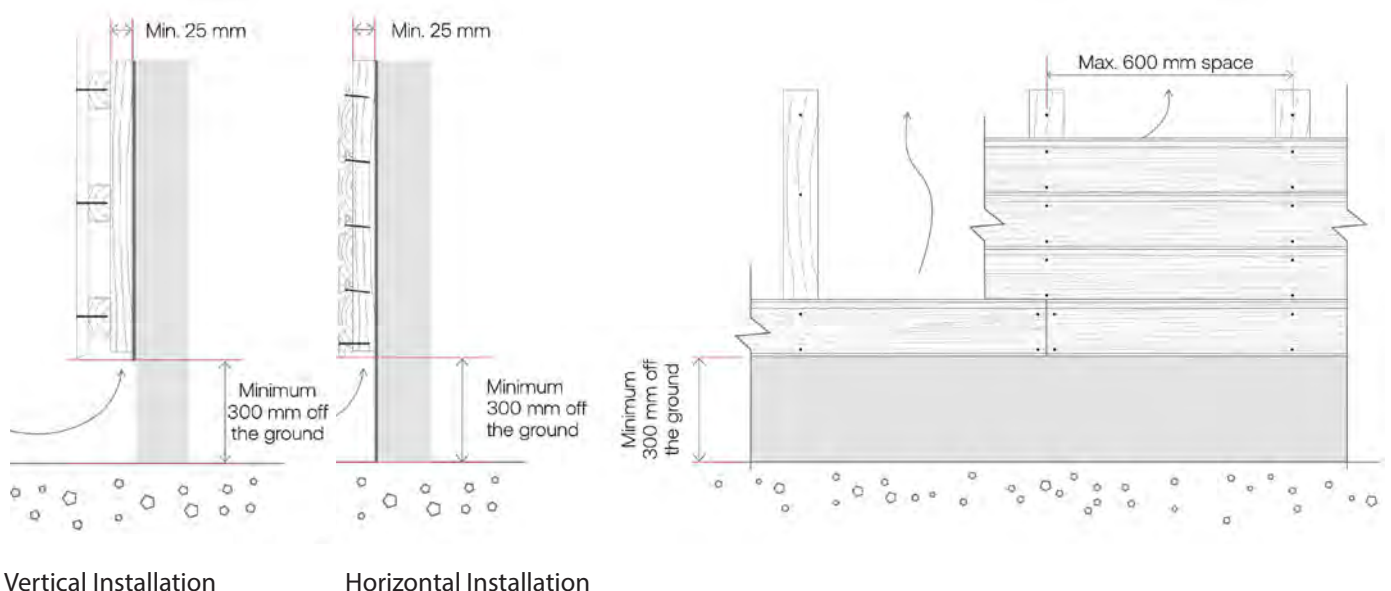
2. VENTILATION - AVOIDING MOISTURE DAMAGE

It is recommended to leave a gap of at least 300 mm between the ground and the cladding, and it is also important to prevent any grass growing nearby from coming into contact with the cladding.

It is best practice to leave an air gap of at least 25 mm behind the boards to prevent moisture damage by allowing for vertical air flow.

For **vertical cladding** installed with horizontal battens, install an **additional set of vertical battens behind the horizontal ones** to ensure sufficient air flow, or use **James Hardie structural battens** which have inbuilt ventilation and drainage channels. The ventilation space behind the cladding boards must also remain open from both above and below to ensure air circulation.

When installing thermally modified cladding, always use stainless steel nails or screws, or recommended fastening clips. Boards with a tongue and groove should be installed with the tongues pointing upwards. In vertical applications, the tongues should point in the direction that the wind most commonly blows from. If using nails, refer to the NCC requirements for installing profiled timber cladding.



SMARTDECK provides a pre-oiling service which ensures maximum protection for any timber, and saves time on site. We recommend oiling on all sides prior to installation, with an additional coat after installation if maintaining colour with a colourtone.



Thermory Benchmark
thermo-ash cladding

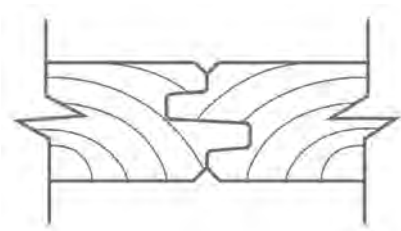
Building: Treehouse, USA

Architect:
Semple+Rappe Architects

Photography:
Tom Harris Photography

3. END-MATCHING JOINTS

With end-matching, the ends of the cladding boards do not need to rest on battens. This creates less waste, reducing labor costs and shortening the installation time. Each board must be resting on, and fastened to, a minimum of two battens. Do not position end joints adjacent to each other. Where possible, distribute the end joints evenly across the façade for a uniform end result.



In the case of installation of boards with Grad clips (pictured), it is necessary to fix the boards at the joint with Grad clips to prevent the boards from shifting sideways as a result of drying. We also recommend gluing the clip connection, using, for example, PUR/polyurethane glue.

4. PRE-DRILLING

For **thermo-ash** or **thermo-oak** cladding, pilot holes should be predrilled. The pilot holes should be equal in diameter to the screw's nominal diameter to allow for any necessary board movement and prevent shear stress on the screws. Some self-tapping screw brands, such as **Wurth ASSY**, may be suitable for use without predrilling, but if using these with thermo-ash or thermo-oak cladding you should try them out prior to installation and use at your own risk.

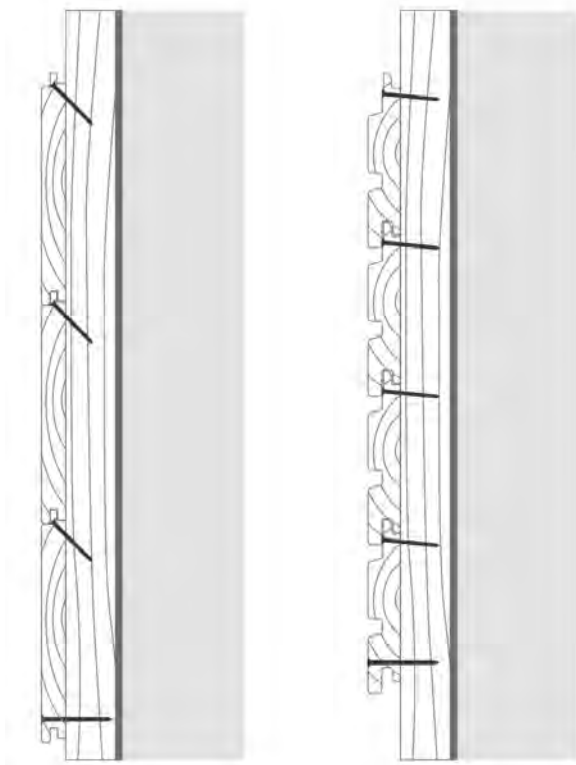
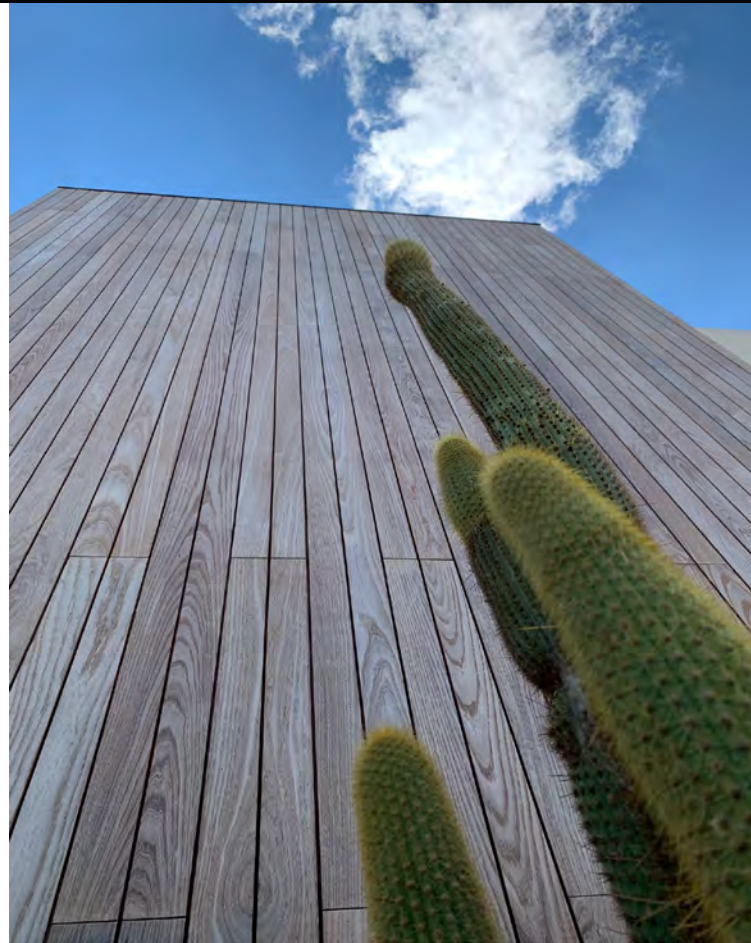
Thermory Benchmark
thermo-ash cladding

Location: Silver Sands, WA

Builder: Makin Homes

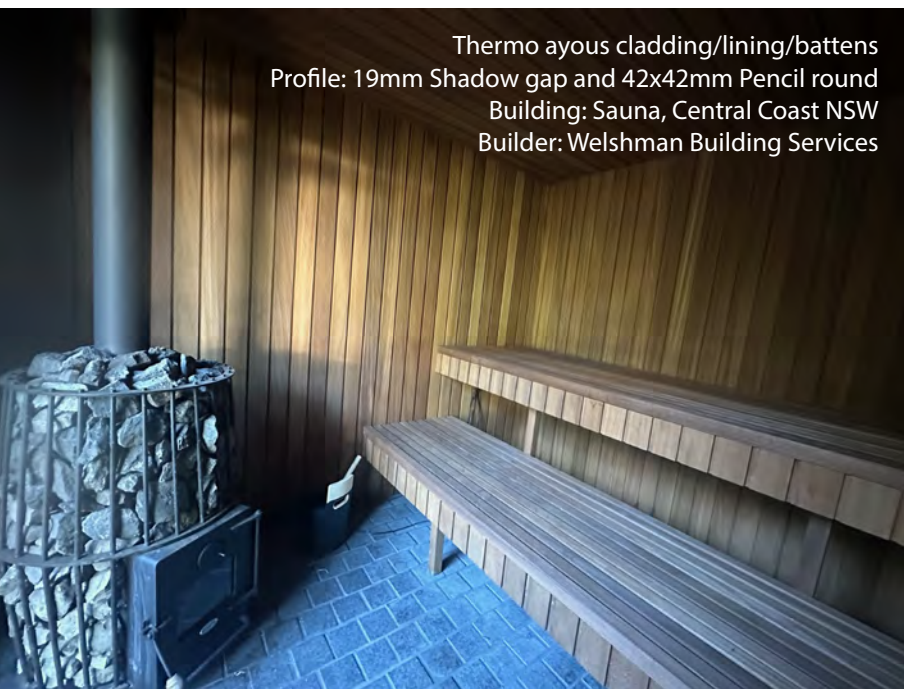
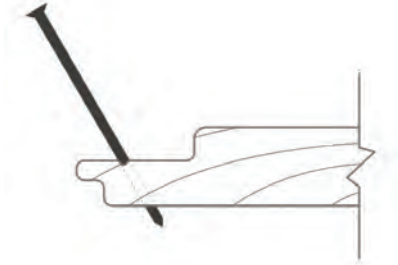
Photography: Russell Morey

Thermo-pine, thermo-spruce and thermo-ayous cladding can be fixed with self-tapping screws such as **Wurth ASSY**. Be sure to set the power drill's clutch to the medium setting. The head of the screw should sit flush with the surface of the board when fixed. Fasteners such as screws and nails must not penetrate the wood too deeply – they should be roughly level with the surface to reduce the likelihood of water absorption. For indoor applications, finishing nails may be used with the head sunk 1 mm into the timber. For boards wider than 130mm, two fastenings must be used.



5. HIDDEN FASTENING

In some profiles, a small line in the tongue section indicates where staples, screws or nails should be placed in order to fix a board through the tongue in such a way that the fastening will be hidden by the groove of the next board. To avoid the risk of the timber splitting when drilling and fastening close to board ends and edges, leave a distance of no less than 20 mm from the edge and 40 mm from the end of the board. Sometimes an additional batten must be used to allow for a space of 40mm from the end of the board.



6. CORNER PROFILES

Until we can supply profiles, we recommend using Weathertex aluminium corner profiles, available at Bunnings and other hardware stores. These are suitable for 18-20mm profiles. Timber corners for 16mm ayous cladding can be ripped on site from 40x40mm or 19x90mm profiles, and for red oak from 20x95mm boards.



If you have any questions, please don't hesitate to call Peter on 0412 068 464 or Jules on 0423 568 086