



NOVA-PINE DECKING TECHNICAL SPECIFICATIONS



Process Title:

This specification describes the performance of Novathermowood exterior decking (thermally modified wood), related materials, installation, and the method and details of wooden decking.

Process Description:

Assembly of 42 mm x 42 mm free lengths, 2-layer laminated and finger-jointed Nova-Pine carcasses with a 1.5% slope in the direction that will allow the flow of water in the application area, with glue and stainless screws suitable for external weather conditions should be done, and the assembly of Nova-Pine decks with suitable profile type to the dimension of Nova-Wolf Mouth for the head parts over these carcasses which are described in the architectural projects should be done by using Novawood-Clips, Pi 2-Clips and stainless screws (A2).

All required materials in this process (Nova-Pine deck, Nova-Pine carcass, Novawood-Clips, Pi 2-Clips, screw (A2), glue, oil for oil-based deck) and workforce (assembly, lubrication), loading in the workplace, horizontal and vertical transportation, unloading fee, contractor profit, loss, wastage and general expenses include 1 (One) m2 of the price for all this process.

Thermowood Decking Technical Specifications:

- As a result of high heat applied, the cellulose chains break down, acids dissolve, and Microorganisms are destroyed. The habitat of wood-rotting fungi is substantially eliminated.
- Most of the resin is discarded and the rest is crystallized.
- The humidity of the wood is reduced to the range of 4-7% all over.
- It is produced without using any chemicals in the process, the material is 100% natural.
- It is environmentally friendly, healthy and 100% recyclable, which does not pose any threat to human And animal health.
- It is resistant to different climatic conditions and is long-lasting.
- Compared to Air Dried and Kiln Dried woods' performance, cycle, bending, etc, deformation Dispositions are reduced and its stability is increased.
- Its resistance against plant and animal wood pests has been increased.
- The inner and outer color of the wood has become homogeneous.
- Heat and sound insulation has been increased compared to kiln-dried wood.
- Its flammability has slightly decreased compared to normal wood.
- Polish, paint, and oil retention properties are improved.

Description of Decking Material:

Outdoor Material made resistant to different climate conditions in compliance with the International Thermowood Association standards and European Norms (DIN CEN/TS 15679:2008-03). International Thermowood Association certified that Nova-Pine is the kind of wood which produces without using any Chemicals and without deteriorating the natural structure of the wood with 200°C-212°C or above heat Temperature.



novathermowood PINE DECKING Dimension:

Wood Specie : Thermowood Pine
Thickness : 26 mm
Width : 92 / 117 / 138 mm
Length : 1200 - 4500 mm

Dimensional Tolerance; Length: ± 1 cm, Width: $\pm 1,5$ mm, Thickness: ± 1 mm

Carcass (Wooden Under-Construction):

Outdoor Material made resistant to different climate conditions in compliance with the International Thermowood Association standards and European Norms (DIN CEN/TS 15679:2008-03). International Thermowood Association certified that Nova-Pine is the kind of wood which produces without using any Chemicals and without deteriorating the natural structure of the wood with 200°C-212°C or above heat Temperature.

42 mm x 42 mm free lengths, 2-layer laminated, finger jointed, Nova-Pine carcass (under construction), Forms the basis of the Decking application. Therefore, utmost importance to material choice should be Given. The right decking application starts with the right carcass selection, therefore the fact that the Decking and under-construction materials have the same humidity rate will result in the same working Behavior and will ensure proportionality. For this reason, it is recommended to use carcasses that have Undergone the Thermowood process.

novathermowood Pine Carcass (Under-Construction) Dimensions:

Wood Specie : Thermowood Pine (2-layer laminated, finger-jointed)
Thickness : 42 mm
Width : 42 mm
Length : 1500-3600 mm

Decking Profile Types:



Nova-End Matching:



Decking Grade:

Nova-Pine decking products are knotty materials. They are called 2-EX timbers which are obtained by Splitting the logs into two. After the Thermowood process, there may be cracks on the knots. These cracks Do not affect the strength of the material at all.

Cases such as knots, profile knife marks, and measurement failure, can happen. Thermowood pine Deck materials are products that can be used on a single surface.



Floor:

The ground surface must be smooth and level. The application surface must be dry and hard. Contact of carcasses with soil should be avoided. If the floor is concrete, its humidity should not exceed 14%. Water on the ground accumulation should be prevented and the surface should be inclined towards the 1.5% drain so that the water can go in the desired direction.

For the application to be made outdoors, the water flow directions should be analyzed very well; water accumulation under the decks should be avoided. If the floor is concrete, It is recommended to apply sliding insulation to prevent water absorption

AUXILIARY MATERIAL FEATURES TO BE USED DURING INSTALLATION:

Clips:

Novawood-Clips and Pi 2-Clips, produced from PA 6 and equivalent materials, are resistant to all kinds of severe climatic conditions. The contents are Polyamide 6 (PA 6, Nylon 6.6) pigment, Melting point 215°C, hardness 76 shore D, density is 1.114 gr/cm³.

Screw/Nail:

In invisible applications of Novathermowood Exterior Decking made with Novawood-Clips and Pi-2 clips System, It is recommended to use screws or nails known as AISI 304 quality made of stainless steel, Containing 18% chromium, 9% nickel, 4% copper, and A2 coded as stainless steel. In these applications, It is Important to use screws of appropriate dimensions for the clips and the under-construction.

In visible applications made from the top, it is recommended to use A2 stainless screws with cylinder/ Decorative head and stabilizing teeth suitable for decking and lower carcass.

During assembly, It is necessary to clean the wood immediately with the progressive drill bit suitable to Screw for perforation of the wood and to avoid discoloration.

A4 stainless coded screws, made of stainless steel, known as AISI 316 quality are recommended to use in Places exposed to seawater. Choosing the right screw will prevent rust formation and provide trouble-free Assembly.

Glue:

On surfaces (adhered surfaces) where the deck to carcass and carcass to the floor are joined, it is Recommended to use polyurethane-based water-resistant glue or NP1 suitable under D4 norms.

The glue to be used must be resistant to variable weather conditions, resistant to air moisture combined With UV rays, silicone-free, Anti-aging with superior adhesion strength in many different wood species.

Application:

The application should be done between +7°C file +35°C temperature. The surface on which the glue will be Applied must be free of dust, oil, and dirt. Glue must be applied according to the width of the wooden part; At certain intervals horizontally or vertically, for creating air circulation in the form of "ES



Transparent Colored Oil:

For the cases such as; delaying color fading caused by UV rays, protection against stains left by the rain, preventing the formation of surface and head cracks, a correct top surface of the deck must apply.

Technical Information:

Paints or Oils to be used;

- Suitable for Thermowood and exotic woods.
- Suitable for the resin outdoors structures and resistant to yellowing
- The entire system must be water-repellent and vapor-permeable.
- It is important to use products containing pigments that are resistant to UV rays.

Proper surface for treatment;

- At least one coat of the recommended 'paint', 'varnish', or 'oil' should be applied to the 6 surfaces of The wood before installation. Oil should be applied to the heads of the cut parts during application.
- The process should be done according to the specified quantity and method in the "Technical Data Sheet" of the manufacturer.
- Applications should not be made under sunlight or rainy weather.
If rainfall is expected, a 2-days rain protection period should be considered.
- The temperature of the application area should be between 15°C-25°C and the relative humidity Should be below 75% during the application.
- Before the application, wood should be cleaned of dust and other foreign materials.

Installation:

Since outdoor "horizontal surfaces" have a higher possibility of wearing-out, oils and preservatives Containing UV-resistant pigments that penetrate wood, does not form a film, are easy to maintain for Seasons, should be used for Novathermowood deck. In these kinds of products, It is preferred to use color Materials that do not change the texture, color, and natural beauty of the wood.

In the first layer a minimum of two coats should be applied before the assembly. The material must be Thoroughly soaked into the wood. Rough Sander causes surface smoothness and increases the durability of The coats. The application should be done with the help of a brush or roller.

To get a homogeneous look, it is recommended to apply in the direction of the grains in the wood. The Process should be done according to the specified quantity and method in the "Technical Data Sheet" of The deck oil manufacturer.

Note: It is recommended to use suitable products to the low rate of VOC (Volatile Organic Compound) in Terms of human and environmental health and EN 71-3 (Toys Safety Regulation).

Surface products should not contain heavy metals harmful to human health. In the products; Arsenic, Chromium, copper, lead, mercury, aluminum, barium, boron, zinc, cadmium, tin, cobalt, manganese, nickel, Strontium, and selenium, and such heavy metals must be below the specified limit.



POINTS TO BE CONSIDERED BEFORE AND AFTER APPLICATION:

Under-Construction (Carcass):

It is recommended to use a 5-7 mm riser from the ground under the wooden carcasses such as; rubber pad or Pi-Takoz, to pluck the carcasses from the ground, and to provide water flow and air circulation. In this way, the accumulation of water under the decks will be prevented.

a: If the carcasses are to be mounted directly on the ground, countersunk or torsion force should be apply with highrise A2 stainless steel screws or buldex. Screw spacing should be 30 cm.

In order to prevent breakage that may occur on the decks, the distances between the carcasses depending on the thickness dimensions and wood species of deck materials at least should be kept 30 cm. In this way, the required air circulation will be provided. For the detailed information, the file of deck static strength values refering to carcass spaces should be reviewed.

b: If there is insulation on the floor, necessary precautions should be taken to not puncture this insulation. The carcasses should be adhered to the floor with epoxy or polyurethane based glues and the required time must be waited for drying.

Nova-Pedestals are used in cases where carcasses need to be raised more than 5-7 mm from the ground, or stainless box profile can be used.

Other than wood if a different metal construction (galvanized box profile, aluminum, etc.) is used, due to its different work behavior with the wooden products, again over these construction materials a wooden carcass should be used.

Nova Deck Application:

In case the wood touches the wall or any surface, a gap of 1.5 cm at the head, And a 1.5 cm from the edges Should be left, and a minimum space of 4-5mm should be left between the decks. When Novawood-Clips And Pi 2-Clips are used, this gap is automatically provided. It is recommended to apply Novawood end Matching detail at the end points of the decks.

In cases where end-matching (Nova-Wolf Mouth) profiling is not performed, in the points where the decks Come end-to-end a gap of 3-5 mm should be left at the head joints of the decks. By using double carcass At the lubricated heads of Nova deck joints the air circulation of the joints should be provided. All applications to be made should detail in such a way that provide air circulation under the carcass and decks.

a. Deck Application with clips: In the clip-on deck application, it is necessary to fix the edges where clips are not used by screwing them from the top of the first and last decks. These screws must be inserted at least 2 cm from the edge of the decks. For the detailed information, the document of deck static strength values refering to carcass spaces should be reviewed.

b. Surface Screwed Deck Application: It is preferred to use screws with high torsion force without Countersinking.

Otherwise countersinking is required on hardwoods. In the Deck application screws to be used must be A2 Stainless steel. The screws must be mounted 2 cm from the sides with two screws.

The end-to-end decks should be mounted to the carcass with two screws per board. In sea piers and Similar applications, wood with the required thickness according to distances of carcasses and the Surfaced screwing system should be used. For detailed information, the document of deck static strength Values referring to carcass spaces should be reviewed.



Points to be considered after Application:

If tables, chairs, etc are to be used on the top of Nova-Pine deck; make sure their feet do not have edges. If necessary, using shoes or felt on these feet will prevent the scratching of wood and edge to negate Damages.

Umbrellas used in cafes and restaurants are very heavy, so it is recommended that the wheels be plastic or rubber instead of metal.

Delivery, Control, and Storage:

All technical and application details, test certificates, warranty documents of all materials to be used in Manufacturing should be checked by the employer or employer's representative upon request. Nova-Pine Decking materials must have TSE CEN/TS 15679 TMT certificate. Information about the physical properties, Size, pattern, color, and performance of the material should be delivered to the representative. Materials That do not comply with the standards should not be used.

When Thermowood products arrive at the construction site, at least three test samples (30-50 cm length) Are to be taken from the incoming packages and be sent to the Forest Industrial Engineering department Of Istanbul University Faculty of Forestry for testing and the test fees must be paid by the contractor Company.

All ttechnical and application details, test certificates, warranty documents of all materials to be used in Manufacturing should be checked by the employer or employer's representative upon request.

Necessary tests for Nova-Pine decking materials are made by the relevant institutions, and a report is Obtained. Otherwise, it is the employer/contractor's responsibility to make the necessary tests and prepare The reports.

All accessories to be used during installation and auxiliary elements in these accessories must be Compatible with Novathermowood products. The entire system must be checked before delivery. If there Is any damaged wood, It must be repaired before acceptance. If not repairable, it should be replaced.

The material brought to the construction site should be stacked in a suitable and closed stock area that is Safe, clean, and has suitable storage conditions before assembly.

The woods brought to the site ready for installation should be stored on pallets on a dry surface in the Manufacturer's riginal packaging in such a way that it will not be damaged, and is protected from outside Weather.

Until the installation begins, Novathermowood decking products are recommended to be stored in their Original packaging. Again, if there are decking products that need to be packaged, storage conditions Similar to their original packaging must be provided.

When the products are delivered, the condition of the packages must be checked.



International tests and Certificates of Novathermowood Pine deck production and control process:

- Finotrol Oy FC-2:2017 Thermally Modified Timber (TMT): CEN/TS 15679:2008 Thermo Modified Timber.
- PEFC: Program for the Endorsement of Forest Certification
- International ThermoWood Association Membership Certificate
- ISO 9001:2015 Quality Management System

International Standards of Novathermowood Pine deck production and control process:

- DIN CEN/TS 15679:2008-03: Thermally modified timber—definitions and characteristics
- TS EN 717-1, TS EN 13489: T4 free class, top surface wood type
- DIN EN 14519: Solid softwood panelling and cladding-machined profiles with tongue and Groove
- DIN EN 14951: Solid hardwood panelling and cladding-machined profiles with tongue and Groove
- CEN/TS 15083-1: Durability of wood and wood based products
- ASTM D 1761-06, Standard test methods for mechanical fasteners in wood