TROPICAL PRO™
SUSTAINABLE DECKING AND CLADDING

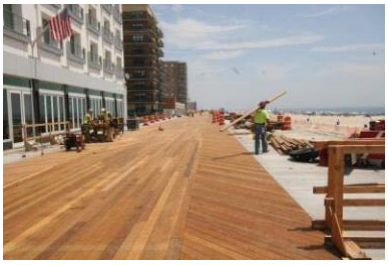
LEGAL LUMBER ™

BEST PRACTICES

Installation and Maintenance

All Tropical Pro Decking and Cladding Products are naturally durable, having distinct appearance and performance characteristics in application. Naturally durable wood products represent the only truly renewable resource available for deck and cladding construction. Whichever Tropical Pro Products you choose, this guide is designed to explore installation, finishing, maintenance options and best practices.



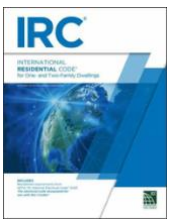



Best Practices

To the best of our knowledge, this information is accurate. However, due to the variance of products grown in nature, it is the sole responsibility of the designer and installer to select the appropriate product for any given installation and site condition. Check and follow local building codes and apply Best Practices in handling and installation. Installers should follow the manufacturer's recommended application and maintenance instructions when using TP brand finish and fastening products. To maximize the performance and beauty of TP brand products, please read this Best Practices Guide before you begin construction. TP provides Installation Section Detail Guides in CAD and PDF formats for specifiers and contractors, which address specific profiles and applications. These guides are available on our website.

Building Code Compliance

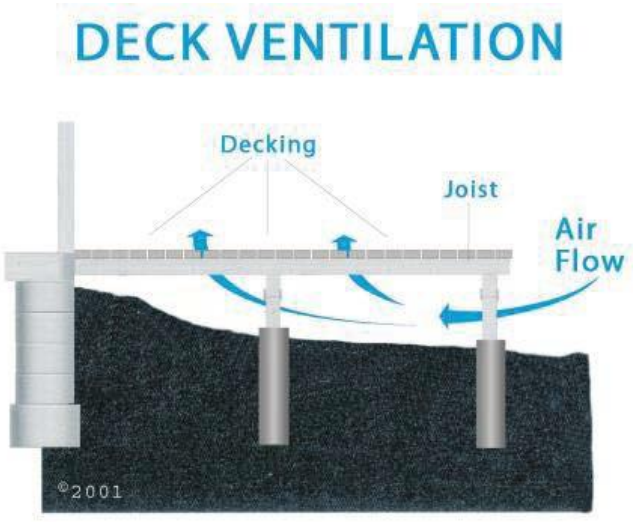
Most municipalities have adopted or included the International Building and International Residential Codes in their own municipal building codes as the benchmark for minimum standards in design and construction. The installer must ensure that the decking design and construction methods adhere to any project-associated local residential or commercial building codes. If required, TP has the technical data and submittal documents needed to facilitate the code compliance process.



Deck Ventilation

The importance of ventilation and air flow under and around wood decking and cladding in improving product stability and performance should be well understood. Adequate ventilation of a deck or cladding system is essential for long-term stability, durability, and minimizing wood movement. Air should always be able to flow freely from outside and under the deck or on roofs. Fully enclosed/skirted decks can experience the same kinds of issues as decks built close to grade.

PERFECT LOCATION

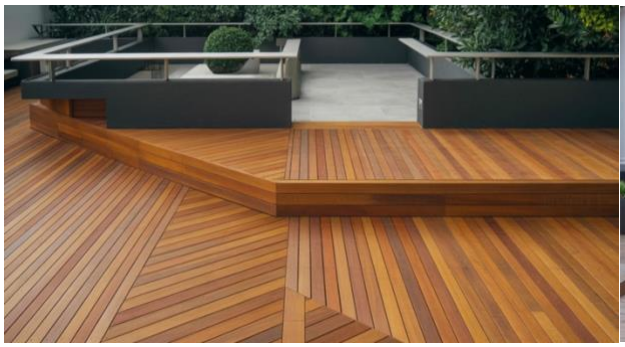


Poor Ventilation Solutions - Decking

High levels of moisture under a deck combined with the impact of the sun and heat on the surface of a deck can cause stress that may result in increased checking, cupping or twisting. Some applications simply cannot avoid the reduction of ventilation by design. Decks at grade or on roofs are not that uncommon, so how do we reduce problems in these applications?

First, it is essential to understand that dimensional stability is directly related to wood thickness and width ratios.

Instability will increase as the board widens related to its thickness. For example, a 1x4 is more stable than a 1x6, and a 1x6 is much more stable than a 1x12. We know from experience that a 5/4x4 deck board, whether air-dried or kiln-dried, grooved for TROPICAL PRO Deck Clips, or face fastened using TROPICAL PRO Deck Screws gives the most stable performance on poorly ventilated residential decks. 5/4x6 deck boards face fastened will also work in most applications, but if you want to use hidden fasteners, 5/4x4 is the best choice. You may also wish to consider using Tropical Pro Deck Tiles screwed and plugged to double stringers placed 24" on center as not only a solution to poor ventilation, but a highly cost effective hardwood deck solution. Using shorter-length deck boards also provides a highly cost-effective and unique deck construction option, and like deck tiles are much easier to move to roof deck project job sites.



TROPICAL PRO DECK TILES are available in 24"x24", 24"x48" and 24"x72", in a number of wood species. Deck tiles can be installed on pedestal systems or double stringers 24" on center to create a wide range of designs and patterns.

Tropical Pro Deck Tiles are designed for poorly ventilated commercial and residential deck construction. You may also wish to consider the use of Tropical Pro Wood Deck Tiles on stringers for conventional decks. They are prefabricated using wood slats that have a very stable thickness to width ratio using stainless steel fasteners.

TROPICAL PRO™ PEDESTALS are available from 1/4" to 35" in height and can accommodate slopes up to 5 degrees.

Tropical Pro EPDM Pedestal.

Tropical Pro Star Pedestal

Tropical Pro PR Self Leveling Screw Jack Pedestal

Tropical Pro Deck Tiles and Pedestals used to fill between street curbs to create a beautiful street scape.

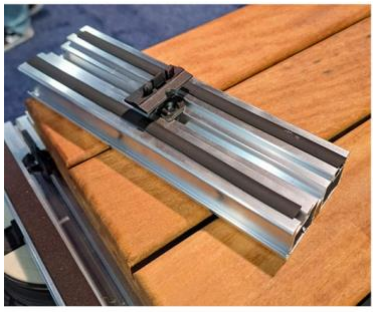
At Grade Decks.

If you want to build a deck literally at grade, a cost-effective solution is to pour a concrete slab or cover an existing slab by applying Tropical Pro EPDM or STAR pedestals directly on top. Deck Tiles can also be applied directly on top of existing wood decks to bring their beauty back without a complete rebuild, as long as the existing deck is structurally sound.

12"x12" Ipe Deck Tile

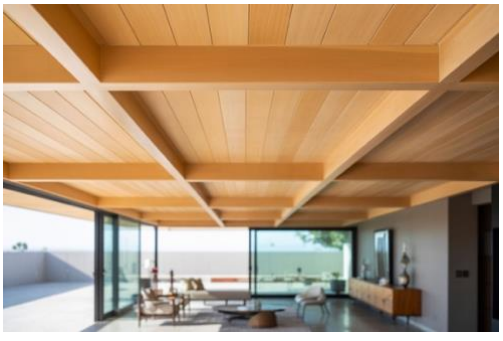
Roof Decks

Roof decks are incredibly challenging. 5/4x4 Tropical Pro decking applied to 5/4x4 Hardwood, 2x4 Treated Wood or Aluminum stringers laid flat on Tropical Pro Pedestals is an excellent solution for poorly ventilated roof decks. Stringers should never be laid directly on roof membranes as they prevent the free flow of water over the roof surface greatly reducing their service life.



Building a Deck over Dry Space

The market is full of gutter style products designed to create a dry space under your deck. If you want to build a deck over a dry space, the best practice is to build a roof structure with a waterproof membrane and install your deck on top of it, by installing a roof deck system using Tropical Pro Decking or Deck Tiles on Tropical Pro pedestals. The added benefit of building a Dry Space Deck in this manner is that you can apply beautiful wood ceiling materials like Mahogany/Ayous as well as install electrical and lighting.



Posts, Beams and Stringers.

When selecting sub-structure materials, a material that will last as long as Tropical Pro Wood Decking is crucial; naturally durable hardwoods or high grade pressure treated softwoods with higher treatment retentions like .40 or .60 (preferably dried after treatment) that are rated for "ground contact" are excellent options. Light gauge galvanized steel and aluminum framing systems are also now in use, but may make decking attachment more challenging than wood options.

The use of naturally durable hardwoods for framing, common in commercial applications, has been growing in residential applications, given its durability and natural resistance to fire. As such, structurally engineered and certified hardwood decking, stringer and beam span tables have been developed for those who wish to consider naturally durable hardwood framing as an option.

Stringer Spacing (Distance Between Stringers)

In addition to the allowed deck spans, there are other issues to consider when deciding on stringer spacing. A minimum of 12" and a maximum of 24" of support under each board end at butt joints is critical for a proper deck to stringer connection when using decking products that do not include a structural end match (SEM) joining system. Providing sufficient ledge allows fasteners to sit back ¾" from the butt joint, or in the case of hidden fasteners, allows for the proper use of TROPICAL PRO™ DECK CLIPS properly secured through the deck boards. The Tropical Pro Deck Clip creates a mechanical connection between deck boards which prevents movement (snaking at the butt joint that is a common problem with other deck clip designs).

MAXIMUM ALLOWABLE SPANS			
TROPICAL PRO DECKING -ALL SPECIES			
Deck		**Loading**	
Thickness	**60 psf**	**100 psf**	**500 psf**
0.75 in	27 in	24 in	12 in
1.00 in	39 in	33 in	18 in
1.50 in	57 in	48 in	27 in
2.50 in	96 in	81 in	48 in
3.50 in	135 in	114 in	66 in

Existing decks will likely have stringers spaced 16" on center, as this has been the design standard for many years. In these circumstances, it is still recommended to 'sister' on a second stringer at any location where decking butt joints will occur. This practice lets yo set your fasteners 3/4" frrom the butt joints which will reduce end splitting. Use of Tropical Pro Smart Bit Drill & Countersink and Depth Setter Tools also reduce end splitting.

12" or 16" 'On Center' stringer spacing is a good design when using 1" Nominal (net ¾") thick Tropical Pro decking purchased at random lengths or 1' length multiples, laying decking in a diagonal pattern, or using decking that includes Structural End Match (SEM) Sem Joints. Sem Joints allow for decking boards to butt with each other at any point mid-span between stringers. You will find SEM Joints in our TP Ash and some Bamboo decking products.

Double Stringers Spaced 24" 'On Center' is the best practice when installing Tropical Pro decking in 1" Nominal (net ¾") or 5/4" nominal (net 1") thick when running decking perpendicular to stringers in even length multiples and 5/4" Nominal (Net 1") thick when running decking perpendicular or diagonal to stringers.

For new construction utilizing Tropical Pro Deck Tiles, we recommend using doubled stringers 24'' on center. This system combines the cost-saving benefits of using Tropical Pro Deck Tiles (lower sq. ft. material cost), fewer fasteners (one Pro Plug per square ft.), and reduced labor costs.

Selecting Treated Wood for use with Naturally Durable Wood Decking

It is a common practice to use pressure treated softwoods like Southern Yellow Pine for the structural components in deck construction. Taking into account the extended service life of Tropical Pro wood decking, it is best practice to use softwoods which are treated for ground contact such as AWPA U1 UC4A (MCA or C-AC) 0.15 PCF Retention or Equal.

Structural service life can be extended even further by using treatments for Salt Water Application such as AWPA UC5B .23 PCF MCA Retention or with AWPA UC4B CCA 0.40 or 0.60 Retention or Equal. For applications with proximity to salt water CCA is recommended for all structural members. Framing and support members that will regularly be submerged in salt water should be UC5B 2.5 PCF CCA treatment.

In addition to using ground contact or critical structure components for framing it is the best practice to use a Tropical Pro Joist Tape to cap the joist with at least a 3/4" overlap on each side of the joist. Adding the joist tape should will extend the service life of framing members by delaying rot and water intrusion between decking and stringers.

AWPA Category Use Chart Including Commercially Available Treatments Grade - SYP #1

Use Category	Service Conditions	Use Environment	Common Agents of Deterioration	Typical Applications	Examples of Treatment/Retention Rates(pcf)
UC4A	Ground Contact or Fresh Water, Non-Critical Components	Exposed to all weather cycles, normal exposure conditions	Decay, fungi, insects	Fence, deck, guardrial posts, cross ties, utility posts(low decay areas)	.15 MCA .15 CA-C(dissolved) .40 ACQ
UC4B	Ground Contact or Fresh Water, Critical Components or Difficult Replacement	Exposed to all weather cycles, high decay potential including salt water splash	Decay, fungi, insects with increased potential for biodeterioration	Perminant wood foundations, building poles, horticultural posts, crossties, and utility poles.	.60 CCA .23 MCA .31 CA-C (dissolved) .80 CCA(boards and timbers) .60 ACQ
UC4C	Ground Contact or Fresh Water, Critical Structural Components	Exposed to all weather cycles, severe environments, extreme decay potential	Decay, fungi and insects with extreme potential for biodeterioration	Land and fresh water piling, foundation piling, crossties, and utility poles(severe decay areas)	.80 CCA(piling only)
UC5B	Salt or Brackish Water New Jersey through Georgia on East Coast	Continuous marine exposure (salt water)	Salt water organisms including Limnoria Tripunctata	Piling, bulkheads, bracing	2.5 CCA

Exerpts from AWPA U1-17, Use Category System: User Specification for treated wood, Table 2-1

The Tropical Pro approach to deck construction is to always build as if you are in a marine environment whether you are or not. High retention Pressure Treated Framing, Tropical Pro Decking and T316 stainless screws.

Ledger Joist and Stringer Flashing

When using wood deck framing, it is important to apply TROPICAL PRO™ JOIST TAPE to ledgers and stringers, to eliminate the harboring of moisture at wood contact points between stringers and decking. Ledger joist and stringer flashing also reduces the corrosive reaction between treated wood stringers and galvanized steel joist hangars. Follow manufacturer's instructions for application. Use of Joist Tape will significantly increase the service life of any deck.

Stringer failure caused by moisture collecting between deck board and poorly treated softwood stringer.

Attachment of Wood Decking to Metal Framing

The introduction of metal framing systems requires a different approach to fastening. Where hardwood decking is concerned, hidden fasteners are not an option as the angle of the screws through the wood make screw penetration into the steel more difficult. Tropical Pro Deck Clips can be used with thermally modified decking products which do not require the use of angled screws. Face Fastening of hardwood decking is recommended and will require pre-drilling metal stringers. Use Tropical Pro Stainless Steel Deck Screws or Tropical Pro Plug System as desired for best outcome. Joist Tape is recommended not to prevent joist deterioration but to provide noise dampening between deck board and stringer.

Biophilic Design

Biophilic Design - The creation of human connection with nature through the integration of natural materials into our living and working spaces. The importance of using naturally durable wood decking and cladding vs composite or plastic products cannot be overstated. These connections are critical to both human and environmental well being. Additionally, Forests cannot be sustained if the renewable products they produce are not accorded value. Conversion of forests to non forest agricultural use is the greatest threat to sustainability.

Wood Selection

Not all wood is created equal. Species selection and grade will have a significant impact on both the appearance and performance of any project. Select a wood species that meets the definition of "Naturally Durable" under the International Building Code and International Residential Code compliance requirements like Tropical Pro Premium Select Architectural Grade Wood Decking and Cladding.

Garapa

Ipe

Cumaru

Tigerwood

Redheart

Color and Grain Variation

Color and grain variation are typical of materials created by nature and are recognized as part of the beauty that sets natural products apart from composite, plastic or PVC products. This is particularly true where wood products are concerned, though some species have more or less color variation than others.

Oiled

Weathered

This should always be considered when looking at wood samples, as Tropical Pro Decking and Cladding products are supplied with a mixed grain and are not sorted for color. You can get some color consistency by sealing the wood or allowing the wood to weather or grey out naturally.

Most wood species are UV sensitive so even when pre-finished they will darken somewhat. Species like Garapa are highly UV sensitive and darken quickly upon finishing and UV exposure. Thermally modified woods are generally more consistent in color due to the Thermal Modification process which darkens the wood fiber.

Grade selection and specification will significantly impact the appearance and performance of wood products in any given application.

The highest quality standards, grading rules, and specification language for architects and other specification professionals have become synonymous with the Tropical Pro brand.
When naturally durable wood products are specified or purchased without clearly defined grade or brand expectations, there is no assurance that you will receive products that meet aesthetic or technical performance requirements. And since grade affects price and performance, what looks like a good deal on paper might not perform as expected.

Based upon our published grading rules and ASTM D143 physical properties testing, TP has developed certified. Allowable Design Values by grade. It is important to note that TP Premium Select Architectural Grade hardwood decking has almost twice the bending strength of FAS/B Grade hardwood decking. Because of the establishment of definitive grading rules, TP products are engineered to perform as designed.

We strongly encourage specifiers, consumers, and contractors to utilize these standards in their decision making process and to specifically reference these standards in their purchase orders for naturally durable wood decking.
Grade Selection – Grading Rule Definitions.

Naturally durable wood products possess natural "Appearance Characteristics" that add to their unique beauty. Those that are appreciated include color variation and distinctive grain patterns. Other characteristics in all types of lumber that develop naturally or through manufacturing are known as "Physical Characteristics," "Sound Defects," "Unsound Defects," and "Milling Defects." The following is a summary of the typical characteristics one might find in a wood grade specification.

** As High Density Bamboo is an engineered wood product without defect, wood grading rules do not apply.*

Appearance Characteristics

1) Color variation
2) Mixed grain
3) Drying checks
4) Reverse Grain (Un-torn)
5) Birdseye
6) Pin knots
7) Water stain
8) Discoloration
9) Sticker marks
10) Molder knife marks

Physical Characteristics

1) Bow
2) Crook
3) Cup
4) Twist

Milling Defects

1) Skip
2) Torn grain
3) Non-compliant profiling

Sound Defects

1) Pin holes
2) Sound knots
3) Reverse Grain (Torn)

Unsound Defects

1) Large borer holes
2) Splits
4) Unsound knots
5) Shake
6) Sapwood

Available Naturally Durable Wood Grades

TP Premium Select Architectural Grade
TP PREMIUM SELECT ARCHITECTURAL GRADE … Hand Selected Clear Mixed Grain Appearance on 4 Sides and 4 Edges. Typically selected when all four sides of the board will be visible such as handrail and pergola components.

Grading Face, Back Face, and Edges – Free of Open Heart, Free of Sapwood.
- Include - Appearance Characteristics (limited tight reverse grain).
- Include - Physical Characteristics which can be removed using normal installation methods, tools, or sanding.
- Exclude - Sound Defects.
- Exclude - Unsound Defects.
- Exclude - Milling Defects.
- For Structural Application – (beams and stringers) Not Allowed…pin knots bigger than ½" at any face and/or edge, the maximum permitted slope of grain 1" in 10", length of end split, and surface split shall be as per ASTM D245 (5.43).

FEQ/Premium Grade (Tropical Pro)
FEQ/Premium Grade (First Export Quality) - Grade…Free of Heart Center, Free of Sapwood on 1 Face and 2 Edges.

- Include - Appearance Characteristics (tight reverse grain)
- Include - Physical Characteristics that can be removed using normal installation methods, tools, or sanding.
- Include - Sound Defects

Grading Face – Clear All Heart:
- Exclude - Unsound Defects
- Exclude - Milling Defects

Back Face and Edges:
- Include – Sound Defects
- Include - Milling Defects
- For Structural Application – Not Allowed…knots bigger than ¾" at narrow face or edges, centerline knots bigger than 1-3/4" wide face, edge knots bigger than ¾" at the wide face, the maximum permitted slope of grain 1" in 8", length of end split and surface split shall be as per ASTM D245 (5.4.3)

FAS (First and Seconds) B Grade
FAS (First and Seconds) B Grade. Typically, non-inspected. represents the standard market export grade produced by the mills and offered by many importers and is typically uninspected and moisture content may not be controlled. First and seconds ratio is undefined.
- Include - Appearance Characteristics.
- Include - Physical Characteristics which can be removed using normal installation methods, tools, or sanding.
- Include - Sound Defects.
- Include - Unsound Defects.
- Include - Milling Defects (Beams and Stringers).

For Structural Application – Not Allowed…knots bigger than ¾" at narrow face or edges; centerline knots bigger than 1-3/4" at the wide face; edge knots bigger than ¾" at the wide face. The maximum permitted slope of grain 1" in 6", length of end split and surface split shall be as per ASTM D245 (5.4.3).

Wood Acclimation

Wood dries by the movement of free water through fiber cavities, fiber walls, and the movement of water vapor through the wood. Because wood is not homogeneous, it shrinks more along the growth rings (radial) than across the rings (tangential). Tangential (width) dimensional change is often nearly twice that of radial (thickness) movement for wood species, and (longitudinal) dimensional change in wood is almost always negligible. Uncontrolled acclimation may cause drying characteristics like movement and checking. Shrinkage and swelling cease as the moisture content of wood approaches equilibrium with its environment.
** Wood Products do not require acclimation before installation.*

Species of wood vary in the rate and amount of shrinkage during the drying process. To minimize shrinkage, warping, checking, and splitting in the finished product, lumber must be acclimated to the middle of the range of expected in-use moisture content in a controlled way. This can occur by either air drying or kiln drying the lumber. The drying characteristics depend on the species and the rate at which the lumber dries. For much of the United States, the point of equilibrium in an exterior environment is between 12% and 14%. For the seasonal EMC (equilibrium moisture content) levels in your region, a copy of the US Forest Products Laboratories document titled "Equilibrium Moisture Content of Wood in Outdoor Locations" is available in our Resources Library.

Larger dimensional lumber sizes and timbers may show deeper checks during the acclimation process, which typically reduces once the wood reaches equilibrium. Kiln-dried decking and cladding, having been pre-acclimated, tends to be less subject to checking than air-dried decking or cladding.

Kiln-Dried or Thermally Modified Decking Versus Air-Dried Decking

Kiln Drying is the method in which most wood species are stabilized by removing the free moisture in the lumber by accelerating the lumber drying process to what would be the natural ambient equilibrium moisture level of the woods service environment. For example, lumber used for flooring and indoor furnishings is typically kiln-dried to a moisture content of between 6% and 8%, as equilibrium is generally controlled through heat and air conditioning to this range. Lumber for outdoor use is typically kiln-dried to a moisture content of between 12% and 14%, as outdoor climates' natural ambient equilibrium levels fall within this range. Therefore, virtually all wood decking species require kiln drying to create dimensional stability, with one exception… Ipe. Ipe Tabebuia spp. – Lapacho group is unique as a wood species in that it is incredibly stable as it acclimates to ambient equilibrium, which is why Ipe is sold as both air-dried and kiln-dried decking. Ipe is very difficult to kiln dry, so Ipe dimensioned lumber 2" nominal (1.5" net thickness), and thicker is typically only available air-dried, and as such may experience some minor dimensional shrinkage after installation.

Air-dried decking is packaged for export with drying sticks between layers, which may leave sticker marks and dirt stains on the decking. These sticker marks are normal in air-dried decking and can be removed by light sanding or by weathering over time.

Some mills saw their own logs and process their own decking. This means that their air-dried decking is, in fact, what we call "Green" and has a moisture content of typically between 30% and 40% when run to decking profile. Some mills are finishing mills that buy their sawn molding blanks from a sawmill, which means their decking will be run from partially air-dried lumber that could have a moisture content of between 20% and 30%.

As such Air-Dried Decking Boards tend to be inconsistent in width.

TP mills kiln dry the rough sawn decking or cladding blanks to 12-14% or pre-stabilize the decking or cladding blanks to equilibrium before molding. For example, two mills have run 1x6 deck board to net .75" inches in thickness and 5.5" in width; one is air-dried, and one is kiln- dried. The air dried will experience some shrinkage in width before and after installation.

Kiln-Dried decking has the benefit of already being pre-stabilized at the higher end of the equilibrium moisture content range for outdoor applications. It will roughly maintain its starting thickness and width before, during, and after installation or experience minor shrinkage in a climate with an extremely low equilibrium.

The air-dried decking will typically reach equilibrium after installation, with the partially air-dried decking shrinking less than the green decking. By experience, this shrinkage runs between 1/8 and 3/8 inches in width on a net 5.5" wide deck board. In most cases, this is not a problem when face fastening Ipe. However, it can become problematic when using hidden fastening systems, as the hidden fasteners will become more visible, and the decking can shrink itself off the deck clip, causing the deck to fail and require post-installation face screwing to repair. This becomes even more problematic in arid climates where equilibrium may be in the 12% range. 35% to 12% is significant, particularly when installed using hidden fasteners, as decking may shrink beyond the clip's ability to hold the decking.

Again, Ipe is dimensionally very stable green to dry, so warp, twist, and bow are not significantly impacted by selecting air-dried vs. kiln-dried Ipe decking. Width consistency and reduced potential for cupping are the benefits of kiln-dried decking. It is important to note that kiln-dried decking can shrink when the equilibrium on site is below 12%. It will, however, shrink much less than air-dried. Kiln-dried, which is dried below the equilibrium of the installation site, will be equally subject to expansion at the time of installation unless the wood has been allowed to acclimate.

Virtually all other wood species in the world are less dimensionally stable green to dry than Ipe. This is why all Tropical Pro Decking and Cladding species including Ipe are available kiln dried.

Air Dried decking is not recommended for use with hidden fasteners as deck boards will typically shrink in width after installation.

Advanced Wood Technology like Thermal Modification takes non-durable wood species like pine, ash, Mahogany/Ayous and bamboo and super-heats them in specialized thermal modification autoclave kilns. This process cooks the natural sugars out of the wood and closes the cell structure to prevent water absorption. Thermally modified woods are incredibly stable as a result of this process and experience little movement during climate shifts.

Pre–Installation Handling and Storage

Wood products should be stored out of direct sunlight, rain, or snow, kept clean, dry and off the ground prior to installation. A moisture barrier should be placed on the ground under the wood products to prevent condensation inside the packaging while stored on site. Allow wood products to acclimate and stabilize to equilibrium humidity levels before installation to reduce post-installation movement.

Be aware that wood contains tannins and natural oils that may react to rainwater, causing staining on concrete or other surfaces where decking is stored if exposed to rain. Typically, these stains can be removed with Tropical Pro Hydrogen Peroxide based Cleaner or Tropical Pro Oxalic Acid based Wood Brightener. Test cleaning solutions on a small area first and follow the manufacturer's instructions, if re-milling or re-purposing, make sure all fasteners have been removed.

Reinstallation Handling and Storage

Wood products removed after years of use for re-installation or re-purposing will likely have reached equilibrium moisture content. A moisture barrier should be placed on the ground under the wood products to prevent water condensation inside the packaging while stored on site. Allow wood products to acclimate and stabilize to equilibrium humidity levels before reinstallation to reduce post-reinstallation movement.

Store removed wood products from direct sunlight, rain, or snow, kept clean, dry, and off the ground before reinstallation. Wood products should be stacked in a well-ventilated location with dry wood stickers/slats not less than ½" in thickness or more than 1.5" in width and placed no more than 24" on center between each row of wood. Do not densely pack wood products after removal as any surface moisture trapped in the unit may result in destabilization, potential mold growth, and/or water stains. The likelihood of sticker marks will increase the longer the wood is stored between removal and reinstallation. It is reasonable to expect some movement of the wood upon removal, as tension, addressed during initial installation, will be released upon removal. Re-install wood products as per the chosen fastener manufacturer's instructions.

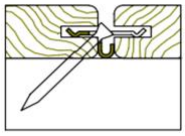
Decking Installation Cutting and End Sealing

Use sharp carbide tipped finish cut saw blades to produce clean cuts and reduce tear. Seal all ends immediately after cutting with TROPICAL PRO™ END SEALER in order to reduce end checking. You can typically expect to seal between 200 and 300 board ends per quart can.

Deck Board Spacing (Distance/Gap Between Deck Boards

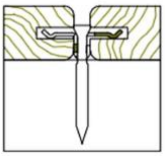
A gap between deck boards of 3/16 to 5/32" is ideal for most Tropical Pro deck installations. This spacing is either achieved through the use of TROPICAL PRO™ DECK CLIP hidden fasteners or by use of the TROPICAL PRO™ DECK SPACER AND MARKING GUIDES when face fastening. These guides not only set board spacing, they also function as a guide to mark screw placement.

Tropical Pro Deck Clip



SECTION: LAYUP END VIEW
HARDWOOD DECKING CENTER HOLE CONNECTION

Tropical Pro Deck Clip and Screw



SECTION LAYUP END VIEW
COMPOSITE, ASH, PINE AND BAMBOO DECKING.

Tropical Pro Spacing Guides

Bow Removal

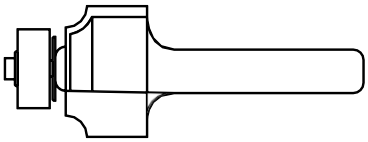
Bow is a natural characteristic of wood decking and can easily be removed during the decking installation process with the use of a deck Bow Wrench.

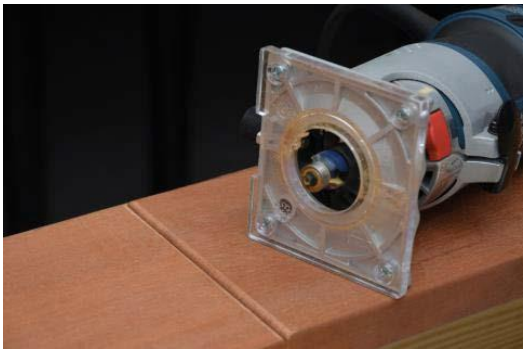
** As High Density Bamboo is and engineered wood product. It will never experience bow which facilitates ease of installation.*

Butt Joints and radius of cut edges

For the best appearance, we recommend routing the board ends with a 1/8'' radius using the TROPICAL PRO RADIUS ROUTER BIT, which can be found in the TROPICAL PRO MASTER TOOL KIT. All you need is a small hand router. This process prevents a hard edge from developing where the boards butt together, similar to engineered wood flooring. Taking it one step further, we have also seen contractors use biscuits or dowels to eliminate any potential for movement at the butt joints.

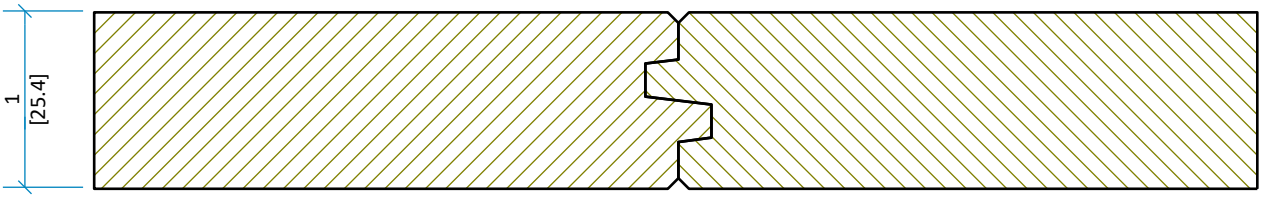
Tropical also offers the Tropical Pro Groove Cutter Router Bit which can be found in the TROPICAL PRO MASTER TOOL KIT. This bit can be used to side groove deck boards. Tropical Pro deck clips provide the benefit of creating a mechanical connection between deck boards at butt joints. Adding a sister joist or double stringer where butt joints will occur allows for proper fastener placement and avoids the placement of fasteners too close to a butt joint, which occurs when attempting to attach both boards to a single joist.





Structural End Match (SEM Joint)

Some wood decking products like Ash and High Density Bamboo come with what is known as a SEM Joint or Structural End Match. This joint design is engineered to allow butt joints to lay anywhere they fall (mid span) without diminishing the structural integrity of the decking board. Stringer spacing is typically limited to 16". Sem Jointed Products reduce construction waste and allow for the use of shorter or random length deck boards.



Drilling

Holes should be drilled as far from the board ends as possible to reduce end splits from over torque of screw heads. ¾" is a good 'minimum' offset. Variable speed drills (2500-4000 rpm drills that maintain consistent drilling speeds, along with TROPICAL PRO DECK SPACERS and MARKING GUIDES can be used to provide consistent screw locations, are recommended for drilling holes as they eject the wood fiber more efficiently than conventional drill bits. This helps reduce the heat buildup, which can shorten the service life of the bit.

Even though stainless steel fasteners are more corrosion resistant than galvanized or coated steel fasteners, they are softer and more likely to twist off or break without proper pre-drilling. The use of TROPICAL PRO SMART BIT COUNTERSINK AND DEPTH SETTER TOOL is always recommended to prevent over torque of screws. When screwing thermally modified woods like Ash or Pine, to pressure-treated stringers, the wood fiber does not create enough stress to twist off stainless steel screws, and predrilling, while the best practice, may not be necessary. That said, pre-drilling thermally modified woods like Ash or Pine reduces the tension on the wood fibers caused by screw penetration and reduces the risk of post-installation wood splits at the board ends.

Hardwoods, on the other hand, should always be pre-drilled. While there are claims in the market that there are screws that will self-drill through hardwood decking, cracking is often likely to occur especially when the heads are set into the boards. These systems also require the use of lower grade stainless steel to add additional hardness to the screws to prevent twist off drilling.

Pre-drilling and countersinking will always yield superior results. When pre-drilling hardwood decking, it is recommended that a bit matching the thread diameter of the screw be used so that the fastener be able to drop through the decking board without binding. This eliminates stress to wood fiber caused by oversized fasteners or undersized holes. This is doubly important when fastening hardwood to hardwood. It is important to remember to only drill through the decking and not into the stringer when attaching to pressure-treated stringers. Hardwood stringers will need to be predrilled using a bit the diameter of the screw shaft and not the threads.

The chart below lists the fastener diameter by type number with the appropriate drill bit diameter by wood type.

Fastener Diameter/Type	Bit Diameter/Softwood	Bit Diameter/Hardwood
#7	11/64	3/16
#8	3/16	7/32
#10	7/32	15/64
#12	15/64	17/64
#14	17/64	9/32
0.276"	9/32	19/64

Jobber Style Fast Spiral bits which are available in the TROPICAL PRO MASTER TOOL KIT as well as all other Tropical Pro Fastener Kits, work well for drilling through hardwoods if you are not going to penetrate the substrate, as in the case with pressure-treated or other softwood stringers, studs, or sheathing. When fastening to softwoods, the fastener will penetrate easily without pre-drilling.

When fastening decking to hardwood stringers, once decking is drilled to screw thread diameter, use taper bits or jobber bits, in screw shaft diameter, to drill into hardwood substrate.

Counter sinks are used to set the screw head into the face of the board by creating a V-shaped cut. This not only permits the screw head to rest flush or beneath the face of the board, but it also lowers the tension placed on the wood fiber by sinking a screw into a board without a countersink. any over-tension from the fastener to the wood fiber can cause boards to split. For hardwoods TP, we have found that countersinks with 3 flutes perform better and last longer than those with 4 flutes as the steel per flute is larger and stronger.

Tropical Pro Smart Bit Systems found in Tropical Pro Deck Screw Kits incorporate Fast Spiral Bits, Countersink and Depth Setter tools

Variable Speed Drill

Smart Bit and Depth Setter System

Jobber fast Spiral bit with stop

Fast Spiral Taper Bit

Counter Sink

Fast Spiral Bit With Countersink

TROPICAL PRO MASTER TOOL KIT AND INSTALLATION METHOD SPECIFIC TOO KITS

When it comes to tools, professional carpenters know that you get what you pay for. Tropical Pro takes the guessing game out of the equation. With our Professional Grade TROPICAL PRO™ TOOL KIT, you'll have access to all the high-quality bits and tools you need to achieve the best possible result for any Tropical Pro deck installation. You won't have to travel to the lumber yard to get what you forgot. One Kit provides all the bits and accessories you need for a successful build in a single can. When paired with our Tropical Pro Decking and Tropical Pro Fastener Kits, you will achieve the professional outcome that homeowners expect.

Drilling Posts and Timbers

Heavy duty drills (0 -1000 rpm) with auger-style bits are recommended for heavy timber drilling. Cordless drills can be used; however, bit life will diminish at slower speeds.

Fastening

Not all fasteners are created equal. There are many fastening options and systems available on the market today. Fastener selection will significantly impact the outcome of any deck installation. It is critical to ensure that the fastener chosen is appropriate for the deck material that is being installed. TROPICAL PRO fasteners are state of the art and designed to provide superior results and superior performance over time.

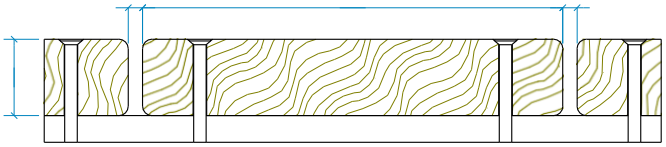
Selecting Screw Material

The use of high-quality Tropical Pro stainless-steel fasteners is recommended to provide superior service life and avoid potential galvanic reaction issues related to the connection of naturally durable wood products with treated softwood substructures. Staining, which may occur due to the interaction between the natural tannins in the wood, will be eliminated by using T316 stainless steel. Getting a T305 stainless steel is harder than T316, however T316 stainless steel is more resistant to corrosion caused by salt spray and is therefore recommended for construction in coastal environments. Strength can be increased in both T305 and T316 stainless increasing the diameter of the screw shank. As an example, Tropical Pro offers a #7 stainless steel screw with our Pro Deck Clips and a #8 T316 stainless steel screw for the pre-drill countersink and Pro Plug installation systems. Regardless of the fastening system selected, performance evaluation and selection are the responsibilities of the specifier or installer. If you just read stainless Steel on a package, odds are you are getting a lower grade of stainless to achieve a lower cost point. Tropical knows that your deck is an investment and will always recommend higher grade stainless to make sure your fasteners last as long as your decking.

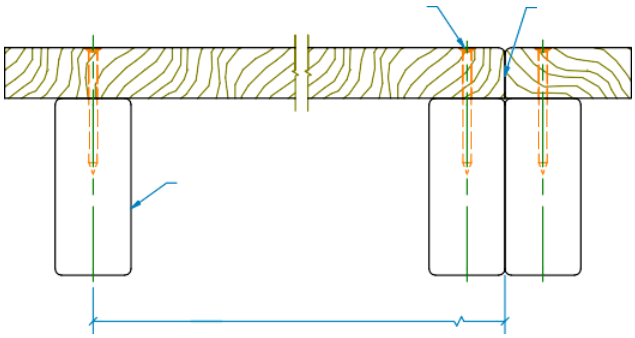
Pre-Drill, Countersink, and Screw Method

Pre-drill and countersink two holes per deck board intersection with stringer. Install self-drilling trim head screws. Drilling and screwing through the face of the deck board provides the strongest mechanical connection possible. It is always recommended that you pre-drill and countersink the ends of the board when using any type of system, as the ends are the most susceptible to splitting. Be sure not to over torque the screws as the head may cause the board to split. Some tools, like the TROPICAL PRO Smart Bit Counter Sink and Depth Setter tools, which can be found in our Tropical Pro Deck Screw Kits and Tropical Pro Master Tool Kit, prevent over countersinking or over torque. Typically, commercial decks are constructed using the face fasten method. Stainless steel fasteners are now available in both natural stainless steel (for letting the deck weather to silver grey naturally) and brown head coated screws for blending remove the (beautifully with wood-finished deck colors).

SECTION: LAYUP END VIEW



SECTION: LAYUP SIDE VIEW

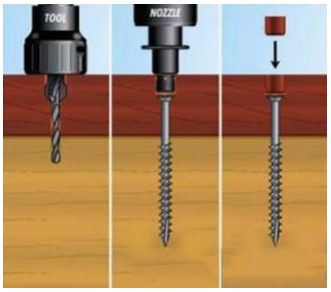


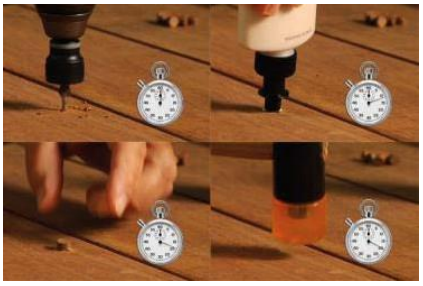
Drill Bit, Countersink, and Depth Setter Tool prevents over drilling.
Depth Setter Tool prevents board splitting from the overset of the screw head.

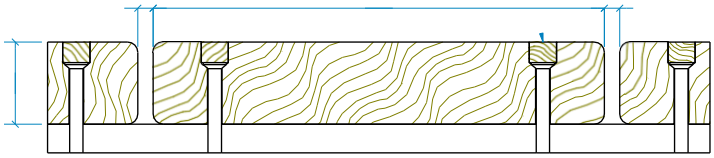
Set screws at slow speed. Do Not over torque screws. Do not use impact drivers for screw installation.

Drill, Screw, and Plug Method

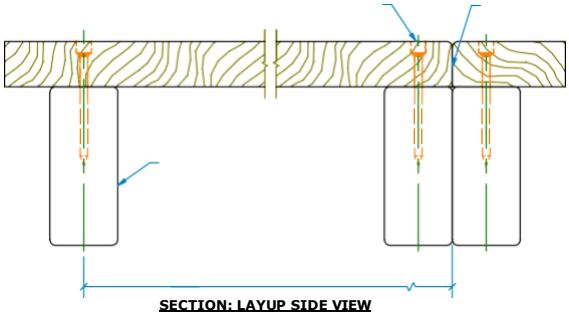
The drill, screw, and plug method has all the mechanical benefits of the drill and screw method. However, the countersinks are deeper to allow the application of adhesive and a wood plug to cover the screw head. Typically used in wood boat deck construction, this method offers a unique appearance. Tropical Pro Plug Screw and Plug Kits come in a variety of wood types, along with the tools required to install them. Tapered plugs, proper tools and a glue nozzle that applies the correct amount of glue make the drill screw and plug method a breeze to install. Just remember to apply the glue and plug at the same time you drill. You do not want any moisture into the hole before the plugs are installed. Unlike conventional wood plugs, the Tropical Pro Plug and Screw System does not require that plugs be cut after installation. This speeds up installation significantly. If there is glue overflow simply wipe off and lightly sand if necessary.





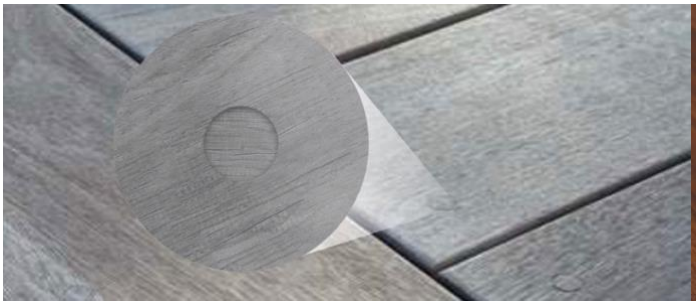


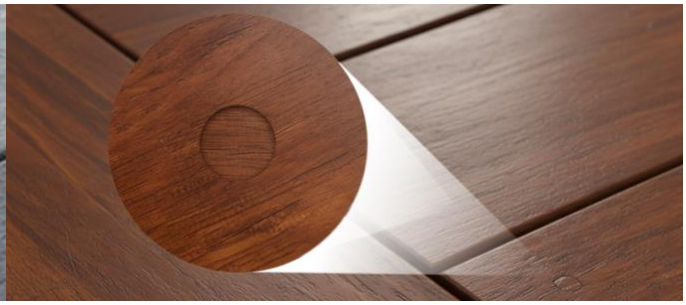
SECTION: LAYUP END VIEW



SECTION: LAYUP SIDE VIEW

Available Pro Plug Species. Ipe, Garapa. Ash, Bamboo and more.





Hidden Fastener Systems for Decking

Typically referred to as "hidden fasteners," this method requires either a biscuit cut at the clip location or grooving a slot down the entire length of the board.

It is essential to understand that hidden fasteners are not entirely hidden. This visibility can be reduced by using black coated clips and black head coated screws. Clips and screws are more visible when using 1x4 or 1x6 decking than on 5/4x4 and 5/4x6 decking. Using air-dried decking with hidden fasteners is not recommended, as shrinkage may reduce the contact surface between the clip and the deck. We do not recommend the use of 1x6 (net .75"x5.5") or what is marketed as 1x6+ (net 21mmx5.5") air-dried decking as these dimensions have a greater potential for cupping than 5/5x4 or 5/4x6 or 1x6 kiln-dried decking.

**High Density Bamboo as well as Plastic Composite and PVC decking products can use Tropical Pro Deck Clips by installing the screw vertically. No pre-drilling of deck boards is required.*

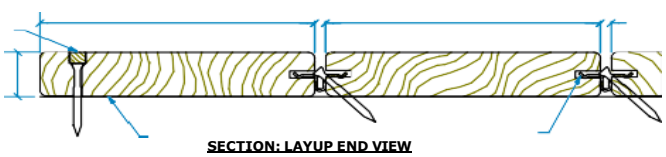
Tropical Pro Deck Clip System

TROPICAL PRO™
FAST SPIRAL JOBBER
WITH DRILL STOP

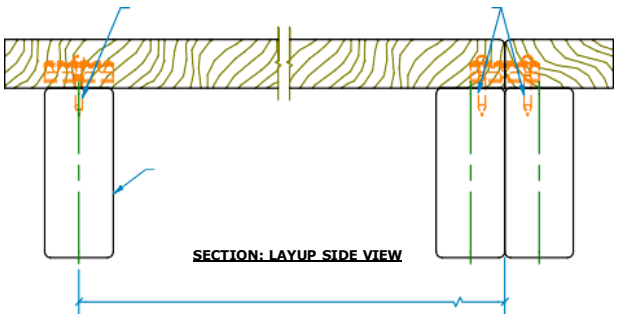
TROPICAL PRO™ DECK
CLIP SCREWS

TROPICAL PRO™
DRILLING GUIDE

TROPICAL PRO™
DECK CLIP



SECTION: LAYUP END VIEW



SECTION: LAYUP SIDE VIEW

The TROPICAL PRO™ DECK CLIP is made of 18 Gage stainless steel. When paired with Tropical Pro™ STAINLESS STEEL TRIM HEAD SCREWS, they produce a winning combination that prevents galvanic reaction and corrosion of screws and fasteners in all conditions and when attaching to treated wood. The TROPICAL PRO™ PRO DECK CLIP has a unique 5/32"" spacing and 3-hole design that creates a mechanical connection at butt joints which eliminates the risk of board snake. Because a mechanical connection is made between board and stringer, deck spacing remains consistent throughout the deck's life.

Tropical Pro Deck Clip Design Prevents Deck Snake

TROPICAL PRO™ Pro Deck Clips unique state of the art design provides the only deck clip on the market that creates a mechanical connection which prevents board shift at the butt joints and a smooth board to board transition. When used with the Tropical Pro Deck Clip Kit, ease of installation is assured.

Typical Hidden Fastener Allows Deck Snake

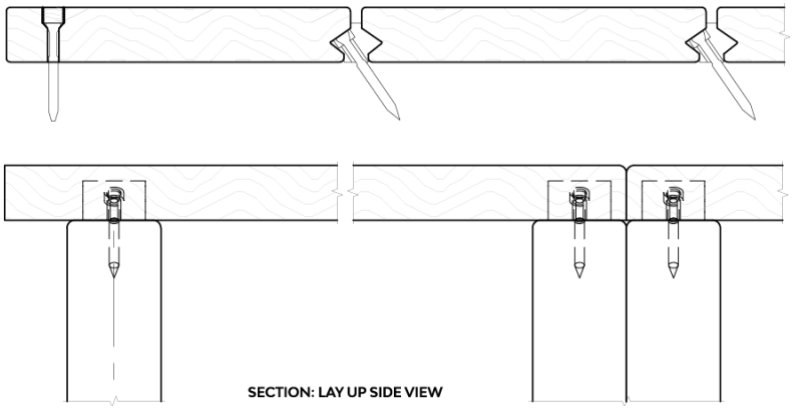
TROPICAL PRO™ DECK CLIPS create a mechanical connection between the deck board and stringer on one side by applying a screw through the clip and a pre-drilled hole through the deck board at a 45-degree angle. The TROPICAL PRO DRILLING GUIDE is the ideal tool for pre-drilling the boards when installing TROPICAL PRO™ DECK CLIPS. Pre-drilling the deck board when installing hardwood decking is required. The TROPICAL PRO FAST SPIRAL BITS AND DRILL STOP will set the drill bit depth so that you will not drill into treated softwood, and screws will seat properly. Set screws at slow speed. Do Not over torque screws. Do not use impact drivers for screw installation.

When using tropical hardwood decking, avoid hidden fastening systems that do not require some kind of mechanical connection between decking and stringer. Such systems allow the decking to shift, creating irregular and inconsistent deck spacing and butt joint matching. TROPICAL PRO™ DECK CLIPS with 2 screws must be used at all butt joints so that both boards have a mechanical connection.

Hidden Fasteners for Thermally Modified Wood

Thermally Modified woods like Ash and Pine Decking Products are more stable than tropical hardwoods, though not quite as strong. Due to these unique characteristics screw connection through one side of the board, as recommended for tropical hardwood decking, is not required. Thermally modified wood decking can be installed using the specialized groove on groove profile with the TROPICAL PRO™ DIAMOND DECK CLIP.

**High Density Bamboo as and engineered wood product without defect, is dimensionally stable and utilizes the Tropical Pro Deck Clip System without pre-drilling. Use the Tropical pro Deck clip and install screws vertically.*



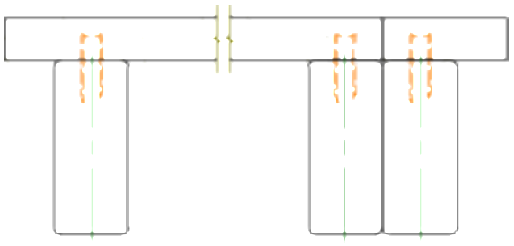
SECTION: LAY UP SIDE VIEW

Porch Flooring and Porch Decking

Wooden Porch Flooring is installed much like interior solid wood flooring. Porch Flooring can be installed using a Flooring Stapler and Stainless-Steel Staples or by using countersunk stainless steel trim head screws.

Unlike interior solid wood flooring, porch flooring should be dried to an exterior moisture equilibrium not below 12%. Snow should never be allowed to sit on a porch floor as the increased moisture load, beyond normal water spray, may cause the flooring to pick up moisture beyond the point of equilibrium causing the flooring to swell and buckle. It is also a best practice to pre-seal porch flooring on all sides with TROPICAL PRO™ Decking and Cladding Oil. Even if you intend to let your porch floor weather naturally, the penetrating oil sealer will help prevent the impact of ground moisture on the flooring. Traditional tongue and groove porch floor should never be used on a fully exposed deck. Covered porches are the rule.

SECTION: LAYUP END VIEW

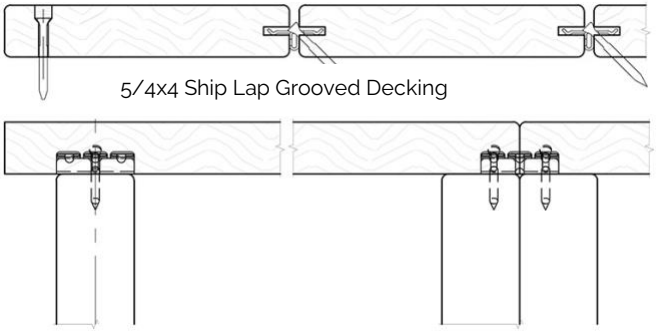


SECTION: LAYUP SIDE VIEW

Test Air Pressure and staple penetration prior to beginning installation

Tropical Pro Hybrid Porch Floor and Decking Profile

For projects that transition from covered to uncovered, you may want to consider our Shiplap Grooved Decking Profile with Tropical Pro Deck Clips. This products unique design provides a flooring appearance while allowing the floor/deck to drain between boards while at the same time hiding the fasteners completely. This unique profile provides the best of both flooring and decking.



5/4x4 Ship Lap Grooved Decking

5/4x6 Ship Lap Grooved Decking

Natural Weathering

Left unfinished or over time without cleaning and refinishing, wood products will weather naturally to a silver-grey patina.

A coating on all faces before installation with an oil-based finish is not necessary but recommended even if you intend to let the deck weather. Application of a single coat of TROPICAL PRO™ DECK and CLADDING OIL slows moisture absorption and release during seasonal moisture transitions, reduces surface checking, and improves stability during the initial acclimation process. This can significantly improve project outcomes when installing decking in low humidity conditions and high UV conditions. It is important to remember that you can apply water-based finishes over oil-based finishes; however, you cannot apply oil-based finishes over water-based finishes, so make sure you consider this when selecting finishes.

Preparation, Finishing, Maintenance, Cleaning, and Restoration

When specifying wood products for exterior construction, it is important to have realistic appearance expectations. When used outdoors, wood products will not retain the appearance associated with their use in interior applications like furniture or flooring. Wood will not maintain its original color over time without cleaning and reapplication of finishes. Wood, by its nature, will be subject to some limited amount of natural reaction as it cannot be predicted how a natural product like wood will behave in any given environment. It is important to note that mold and mildew will grow on any surface where dirt and organic debris is allowed to accumulate. Unlike composite decking and cladding, staining can be easily removed with TROPICAL PRO WOOD DECK CLEANER and if necessary Tropical Pro Wood Brightener. This includes oil stains from grilling and other types of stains. In the worst of cases stains can simply be sanded out with a random orbital sander.

New Deck Preparation

Always clean your deck using TROPICAL PRO™ WOOD DECK AND CLADDING CLEANER Part A to remove dirt and debris from the wood surface. After cleaning, apply TROPICAL PRO™ WOOD BRIGHTENER Part B to remove any stains or discolorations caused by weathering. Oxalic-acid-based wood brighteners also improve finish penetration. Make sure you allow the wood to dry thoroughly before and between any cleaner, brightener, or finish applications. Review any safety and storage information on all chemical or oil-based products before using them. MSDS sheets should be available on the manufacturer's website.

Caution should be exercised when using Wood Brighteners containing oxalic acid and only be used if the deck will be refinished after brightening. Oxalic acid converts lignin in natural wood species to sugar and can accelerate weathering if left raw after cleaning.

Sanding

Removing natural characteristics like reverse, raised, or torn grain, scratches, sticker stains, water spots, finishes, or other discolorations can typically be easily removed using a random orbital or belt sander with 80 to 100 grit sandpaper. You may have to try a few different grits to determine what will work best for the wood species you are sanding.

Finishing

A coating with TROPICAL PRO™ WOOD DECK AND CLADDING OIL on all faces before installation is not necessary, but highly recommended as it slows the wood acclimation process and provides protection against moisture absorption on the back side of the wood without degradation from UV exposure. To maintain the natural color, use TROPICAL PRO™ WOOD DECK AND CLADDING OIL finish with its UV inhibitor, fungicide, and pigmented tint. Test the finishes on the decking to determine their compatibility and appearance.

Before application, brush and clean the decking surface to remove dirt, dust, and other airborne contaminants. Tropical Pro Wood Decking and Cladding are dense, so apply thin coats and wipe off excess oil, allowing each coat to dry thoroughly, or a sticky surface may result. Woods may not be as dense and may absorb more finish but should be treated like hardwood. Wipe on and wipe off. Clean and reoil as necessary. Decking with a pre-finish option may or may not be available in your market. The advantage of pre-finishing before installation is the assurance that both top and back of deck boards receive at least one coat of oil which slows any acclimation process. Check with your local dealer for the availability of this service. Grain, density, and moisture content can all affect finishing. Every piece of wood will accept finish differently, even pieces from the same tree. Sampling finishes are always recommended before completing the full application. TP does not warrant the performance of finishes.

Finished Deck Maintenance and Weathering

Periodic cleaning with TROPICAL PRO™ DECK AND CLADDING CLEANER and reapplication of TROPICAL PRO™ Deck and Cladding Oil will enhance the appearance of your deck. The lowest maintenance approach we have found for maintaining finished decks is to treat them like you would a piece of furniture in your home. Simply clean your deck when it is dirty and wipe-on wipe-off a fresh coat of finish before the finish deteriorates from UV exposure and the greying out or other forms of discoloration begin to take place. Every spring and fall is a good schedule.

Spotting, Staining, and Discoloration

From time to time, we get calls asking about black spots that appear on wood decking. Usually, these spots appear on wood surfaces due to mold or a reaction between iron and natural tannic acid found in all woods.

Mold and mildew will grow on any surface where a food source has accumulated. This includes composite, PVC and glass surfaces. Mold or mildew can be removed with TROPICAL PRO™ DECK AND CLADDING CLEANER, which is supplied in a powder concentrate to be mixed with water.

If deck cleaners do not remove the black stains, your spots are likely caused by an iron reaction. Iron spots often appear as black rings around galvanized steel or low-grade stainless fasteners. Small black dots on the deck may also be caused by filings from iron railings, shingle granules, fertilizers, or any particle containing iron that rests on the deck surface.

This type of black staining on the deck can typically be removed with TROPICAL PRO WOOD BRIGHTENER. It is supplied in a powder concentrate that is mixed with water. Multiple applications may be necessary to remove the stain. The fastener may have to be removed and replaced with a higher-grade stainless-steel fastener to prevent the problem from returning.



If you wait for the finish to deteriorate beyond the capabilities of deck cleaner and wood brighteners, all is not lost. Simply remove the old finish using a finish stripper followed by TROPICAL PRO™ cleaner, wood brightener, and oil-based finish, just like you did when you first installed the deck. That's the beauty of wood. It can always be restored to its original appearance. Unlike PVC or composite decking, even in the worst possible condition, a hardwood deck can simply be sanded with wood floor sanders just like solid wood flooring.

*Use extreme caution when handling these chemicals and wear protective clothing and eyewear. Do not mix these cleaners with ammonia or household cleaners. We recommend that tests in small areas on a few different boards be conducted before overall use on the project. Always consult and follow the manufacturer's recommendations when using proprietary products.

Pressure Washing

Wood decks can be pressure washed but take great care. It is important to remember that all wood, due to fiber density and grain, even within the species, may react differently to pressure washing.

If you intend to pressure wash your deck, we do not recommend a pressure setting above 1200 psi. It is also important to set the proper distance between the nozzle and the deck surface so as not to tear the wood grain. Begin your washing in a corner to establish the right combination of pressure and distance.

If you are using a contracted pressure washing service, make sure you verify that they have wood deck experience, ask for references and make sure you are there to inspect your deck throughout the process.

Painting

Some naturally durable hardwoods can be extremely difficult to paint. Paint is defined as" Film Forming" and locks in trapped moisture, resulting in peeling and poor performance. Painting naturally durable hardwoods like Ipe is not recommended.

If you do decide to Paint hardwoods, the best outcome with be the application of a high-quality oil based primer followed by a high quality exterior latex paint. Thermally modified wood typically take stains and paints well.

Wood Stains are defined as "Vapor Permeable," which allows for natural equalization and are less affected by seasonal changes in temperature and moisture.

Gluing

Some naturally durable hardwoods like are extremely difficult to glue. It has been reported that marine-grade epoxy, Polyurethane, PVA type III, and two-part resorcinol glues have been used with some success in non-structural applications. When gluing naturally durable hardwoods, the wood should be dry and wiped with a solvent such as alcohol or acetone to remove surface oils, dirt, or other conditions that may interfere with adhesion difficult to glue. Thermally modified woods typically glue well.

- Epoxy Types: similar to "West System Epoxy" or "G-2" Epoxy."
- Polyurethane Types: similar to "Gorilla Glue."
- PVA Type III; similar to "Titebond III."

Wood is an organic material, not manufactured, with variations from board to board that may impact adhesion. When working with wood products, it is incumbent on the architect/engineer/designer to evaluate the potential impact of the acclimation process on glue connections and the appearance of the completed application. TP makes no specific recommendations or warranties associated with painting or gluing wood products. It is recommended that samples from different boards be made and tested before using any glue in an application. Always consult and follow the manufacturer's recommendations when using proprietary products.

Cladding and Soffit

The same best practices for decking apply to cladding and soffit. Cladding and soffit should always be applied so that moisture can evaporate from behind the cladding. This requires a minimum of 10mm or 3/8in air space between the vapor barrier and the cladding to prevent water bridging. In closed cladding systems like tongue and groove or shiplap, air must be allowed to enter and leave the cavity at both the bottom and top of the wall. This is typically achieved using wood or plastic battens that enable air to move vertically behind the wall.

Back Ventilated Rain Screen systems like the TROPICAL PRO™ CLAD CLIP™ SYSTEM provide the additional benefits of allowing air to move vertically, horizontally, and through the wall cladding itself. The TROPICAL PRO™ CLAD CLIP™ SYSTEM also eliminates the penetration of fasteners through the cladding, removing these potential points of moisture penetration into the cladding material itself. The TROPICAL PRO CLAD CLIP™ SYSTEM is effective at eliminating the need for battens when cladding is applied to wood house sheathing, allowing the required air space to be maintained directly by the clip system. Rain Screen systems are now considered state of the art, providing the rapid evaporation of moisture from behind wall cladding. Pre-finishing wood cladding on all sides reduces the risk of moisture absorption and is recommended.

Clad Clips are the ideal solution for mounting interior wood cladding as well which is available in a wide range of tropical and temperate wood species from cedar to mahogany to maple. The benefit of the clip system is that it eliminates the penetration of fasteners through the boards. In fact, a back ventilated rain screen design over rock wool insulation becomes noise absorbing. And being wood the cladding design options are limitless from Nickel Gap to Fluted profiles. Wood connects us to our natural world in a way that plastics and composites never will.

Battens or clips are typically spaced 16" on center. Tropical Pro Clad Clips are available in First Generation Aluminum Clad Clip Maxi and second generation Glass Filled Nylon Clad Clip Maxi and Clad Clip Mini. Do not use aluminum clips on galvanized steel wall framing or pressure-treated wood as a galvanic reaction can occur, which will corrode the clips and fasteners.

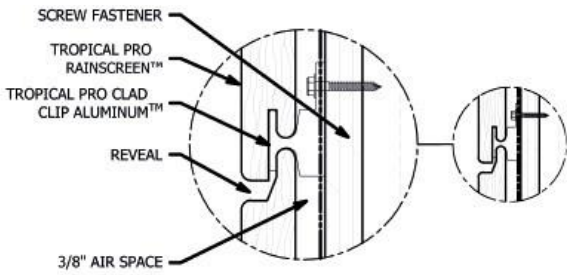
The second generation TROPICAL PRO™ CLAD CLIP SYSTEM utilizes VO-1 Fire Rated Glass-Filled Nylon clips and Stainless Steel fasteners to eliminate the risk of system failure in all environments. The unique 3 hole design of the Maxi clips allow for attachment to wood sheathing using 2 screws per clip at random locations eliminating cladding waste. One screw per clip is used for attachment to metal studs or battens in both high and low wind applications. The Clad Clip Mini is for low wind use only.

Clad Clip Aluminum

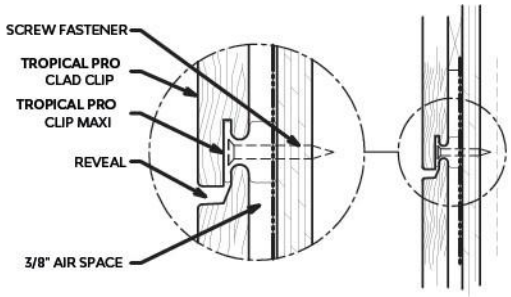
Clad Clip Mini

Cladding should never be placed in direct contact with a house wrap or vapor barrier. The importance of mana Clad Clip Maxi ɔt be overlooked. Roof water should be directed away from decks and cladding, and water should be shed out from underneath the deck or behind the cladding and not be allowed to accumulate. Drainage should be addressed before deck or cladding installation. It is also recommended, whether you intend to let your decking or cladding weather naturally or maintain the original color, that one coat of TROPICAL PRO™ Deck and Cladding Oil be applied to all board faces before installation. This is to slow any potential acclimation issues and reduce the potential for any moisture absorption on the back face of the boards. As there is no UV exposure to the back side of the boards, the coating will protect against moisture absorption over time.

Aluminum install section detail



Maxi Clip install section detail



When using the Clad Clip System, make sure to utilize a high quality moisture barrier like Zip Panel or Benjamin Updyke Flat Wrap. There are many good moisture barrier options for Back Ventilated Rain Screen Systems.

It should be noted that Clad Clip System Profiles are available in 1/2 ", 1/4", and 0" reveals as well any custom face design like ribbed cladding. The Clad Clip System can be used for both vertical and horizontal, interior and exterior cladding applications in virtually any wood species desired.

Traditional Cladding

Traditional cladding profiles like Pine and Ayous T&G Beveled, Square Edge, Ship Lap, Nickle Gap and Ribbed profiles are typically installed using stainless steel staples or finish nails just like cedar cladding.

Environmental Compliance

The use of sustainable and renewable forest products and the value they carry, helps protect forests from conversion to non forest agricultural use.

An environmentally superior alternative to non-wood products… products carrying the 'LEGAL LUMBER™ Due Care' Certificate of Compliance meet a specific set of Controlled Wood, Chain of Custody, Life Cycle Impact, and Due Care Standards, Policies, and Procedures that support environmental sustainability initiatives as follows….

All TP products have been verified of legal origin and compliance as being legally harvested, transported, exported, imported, and documented in compliance with all country of origin, international and domestic laws, rules, regulations, and treaties pertaining to the fair and legal trade of forest products including but not limited to the U.S. Department of Agriculture Lacey Act, ITTA (International Tropical Timber Trade Agreement), CITES (Convention On The International Trade of Endangered Species), and U.S. Buy American Act.

LEGAL LUMBER™

All Tropical Pro naturally durable wood products are derived from forests that are naturally occurring, renewable, sustainable and are not harvested from forests or forest plantations where traditional or civil rights have been violated, forests having high conservation values that are threatened, forests that have been genetically modified or forests that have been converted to a non-forest use.

All TP wood products are 100% organic, grown without chemical fertilization, and regenerated naturally or by seeding and replanting. The natural service life of TP Wood Products exceeds their natural growth cycle, traps and stores carbon, and can be reclaimed, reused, or up-cycled. TP Wood Products do not require for service any petroleum-based or inorganic chemical treatments, adhesives, or coatings. TP Wood Products do not require for service any specialized handling storage or disposal procedures and generate zero post-industrial or post-consumer non-biodegradable waste. TP Wood Products are also safe for human and animal contact, meet low VOC emission standards and meet International Building Code and International Residential Code requirements for naturally durable wood.

TP does not assume any liability other than those outlined in TP warranties require the use of Tropical Pro Fastening Systems and compliance with all TP Best Practices.

Don’t forget to check out the entire TROPICAL PRO family of products.

Decking Systems • Rain Screen™ • Siding • Cladding • Paneling Systems
Porch Flooring • Deck Tiles • Roof Deck Systems • Hand Rail • Architectural Millwork • Bridge Decking • Posts • Heavy Timbers • Custom Milling