



## INSTALLATION GUIDELINES

Radiance™ Thermally Modified Wood Decking is real wood which has undergone a unique thermal-modification process which creates a new category of decking known as TMW (thermally modified wood). You can use TMW like you would regular raw wood. Cut it, sand it, nail it, drill it, paint or stain it as you would practically any standard-grade lumber.

In fact, standard carpentry and wood working tools are all that are needed to work with Radiance Decking products. Radiance is all natural wood only drier and slightly more brittle than unmodified wood. For optimal performance when sawing/machining Radiance, give special attention to saw and tool coarseness and fineness to better improve the end results.

Unlike other exterior products, Radiance is evenly modified throughout so you are assured of the same performance and look from board center to outside edge. No extraordinary care is needed after sawing and machining Radiance — its characteristics are consistent throughout the product.

### Section 1 – Cutting and Drilling

You can work with Radiance just like an ordinary, dry, fine-grained wood; and, as with any wood, the right tools and techniques make all the difference. An organized well-kept sawing/machining area will improve operator safety and overall performance. For additional tips and safety equipment recommendations, check with an accredited safety agency/professional. Specific information for Radiance may be found on the Material Safety Data Sheet (MSDS).

Standard construction saws work well with Radiance; we recommend using the following blade types for each of these common saws:

#### Radial Chop saws

- For 10” radial chop saws we recommend using a 30-tooth or greater carbide-tip blade.

#### Circular saws

- For 7-1/4” circular saws, use a 36- to 40-tooth carbide-tip blade for optimal results — fewer teeth will result in a coarse cut, especially at board ends. Also, as with most wood products, be sure to use sharpened blades to ensure clean cuts. Always use caution and follow safety guidelines and manufacturer’s instructions with any power tools. When cutting, sanding or drilling Radiance Decking, ensure proper ventilation and dust collection. NIOSH-approved safety glasses and dust masks are recommended as wood dust can be an irritant to lungs and eyes.



## **Installation**

### Table saws

- For optimal results, use 10” blades that are 30-tooth or greater with carbide tips.

NOTE: Saw speed will have an effect on the cut quality; generally, the higher the saw power, the better the cut quality.

### Hand saws

- Standard wood handsaws also work well with Radiance. Pay careful attention to the saw tooth count and blade type for optimal cutting performance. If unsure, try cutting a test piece using scrap or at a board end before making any major cuts.

### Routers

- Routing Radiance is similar to routing dry, fine-grained, unmodified wood; care should be taken to avoid wood-tear. It is essential that router bits are sharp; for best results, use a high-speed router. NOTE: extremely detailed routing with Radiance may be difficult as the increased detail on routing relief increases the chances for grain tear. For best results, test the routing on a sample piece or an inconspicuous area first.

### Band/Jig/Scroll Saws

- Radiance cuts well with these saw types provided that fine woodworking blades are used and that the operator does not rush the feedstock when machining.

### Drill Bits

- Radiance drills well with standard wood-working bits; however, extra attention should be taken when drilling near edges to avoid wood splitting. Using sharp bits and attention to tool pressure will help improve end results. Coarse, flat-head borer bits will tear and split the wood; we recommend standard, round drill bits.

### Post-cut End-grain Preparation and Mandatory End Coating

Exposed end cuts, whether performed during milling or during installation, must be sealed to prevent moisture penetration that may result in the wood checking at the ends. In particular, One Time Sealer has shown excellent results with Radiance Decking. Warrantee will be void if ends are not thoroughly coated after installation.



## Section 2 – Decking Installation and Fastening

Radiance is recommended for standard residential deck surfaces with spans no greater than 16” on-center and 12” on-center for stair treads. A 1/4” gap between adjacent boards is recommended as Radiance will install dry (~6% MC) so minimal shrinkage will be present.

Deck boards shall extend across a minimum of three joist bays and terminating board ends shall lie on joist centers. All board ends should be tightly butted to reduce end checking. Exposed ends should be sealed and/or butted against a band board to reduce end checking. Make sure terminating board ends of adjacent deck boards are staged by at least two joist bays for decking runs.

All installations should follow all local municipality code regulations.

*Radiance boards less than 1-1/4” thick cannot be used as decking for stair tread material. Stair boards that are the first board with nosing shall be a full-width 5” board.*

Radiance Decking is acceptable for residential decking for model building codes and for most municipalities. Standard coarse-thread deck screws work well with Radiance. Keep in mind the following when fastening Radiance decking products:

- Deck screws and fasteners must be compatible with the deck substructure, especially if the substructure is chemically treated with preservatives that contain metals (e.g., ACQ).
- Radiance Decking should be pre-drilled to avoid splitting.
- Fasteners should be applied a minimum of 5/8” from board edge and 1-1/2” from center of face with two fasteners per board penetrating a minimum of 1-1/4” and a maximum of 2” into the deck joists. Fasteners applied at board ends should be a minimum of 1” from the board end utilizing the same edge-spacing.
- Fastening to the 1-1/4” edge of Radiance shall be at edge center or 5/8” in from top or bottom of the board with the fastener not to exceed 1-1/2” penetration. Some screws may require countersinking to prevent cracking, especially those with larger heads. Testing in inconspicuous areas or with scrap boards is suggested.
- When fastening deck boards, face-fastening with deck screws provides the optimum holding conditions; however, hidden fastening systems can be used. Hidden systems that screw into the deck board and joist edges work well. *Kerf- or cleat-type hidden fastener systems are not recommended with Radiance.*

NOTE: Standard woodworking screws work well with Radiance. Attention should be given to screw thread diameter and coarseness as finer thread screws will have a greater tendency to tear out over time.



• Optimal results are achieved by using deck screws compatible with the specific deck undercarriage material; however, standard mechanical fasteners can be used with the following guidelines:

1. Pre-drill pilot holes before nailing Radiance to avoid splitting boards, especially at board ends. The nailing pattern shall be identical to the screw pattern recommendation listed above.
2. For deck surface nailing 12d galvanized is the maximum nail size allowed and a 10d galvanized is the minimum. Spiral-shank and ring-shank nails provide additional holding power.
3. Nails must be exterior-grade (e.g., stainless steel or hot-dipped galvanized) and be compatible with the deck substructure.
4. Nailing at a 30-45° angle for deck board face nailing is recommended for optimal holding results.
5. Periodic inspection of fasteners and deck surface is recommended for optimal deck performance and beauty.

### **Section 3 – Finishes and Coatings**

Over time, as Thermally Modified Wood is exposed to sunlight and changing moisture — as with any real wood product — it will take on a silvery quality; Radiance Wood Products are manufactured to so that they won't silver and are protected with a proprietary process. All Radiance Wood Products are coated with a next generation NO V.O.C. coating that provides extra durability, prolonged colorfastness and extended beauty. Radiance Wood Products use One Time Sealants for maximum protection and our base color of Clove Brown is available at retail for future color refreshing and maintenance.