

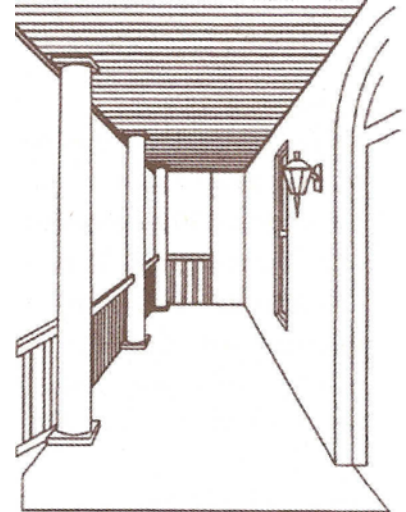


# Royal MacLumber

## Installation Instructions for Tongue and Groove Panels

### **Product Use & Description**

Royal MacLumber Tongue & Groove Panel (T&G) is intended for nonstructural exterior applications such as porch and stoop ceilings, soffits, accent siding by windows and doors, dormer and gable siding, porch and gazebo wainscots, etc. T&G is a premium performance product that consists of a unique plastic/wood composite core with a continuous solid outer cap that is pre-finished, or can be field finished in any color. T&G is a tongue and groove plank that is also reversible. One side has a 2-1/2" on center beaded pattern, while the other side has a 5" on center Vgroove pattern. It is 5/8" thick with a nominal width of 6" (actual width is 5-3/8", exposed width is 5-1/16").



### **General Application Instructions**

Royal MacLumber T&G may be installed wherever decorative wood tongue and groove planks are typically used in both horizontal and vertical situations.

When installed horizontally on vertical walls, the groove must be pointed downward to avoid funneling water into the wall. It can be fastened directly to structural members or applied over sheathing or other materials, as long as an adequate nailing base is available. Framing members or nailing supports should be spaced no greater than 16" o.c. Also, unlike wood planks, Royal MacLumber T&G can be brought down to grade and placed in contact with concrete and other masonry materials without fear of deterioration.

### **Storage**

T&G should be stored off of the ground to keep it clean and damage free, and on a pallet or over stringers spaced no more than 30" apart (18" from ends) to keep it flat. It is recommended that T&G be covered to keep it clean.

### **Cutting**

Royal MacLumber T&G can be cut with normal woodworking hand and power saws. For handsaws, a fine-tooth version works well, while with power saws, a combination blade is preferred. In addition, the best performing blades have a tip of either carbide or steel which is slightly wider than the blade itself. This type of blade tends to reduce heat build-up, and reduces any tendency for the plastic to melt.

### **Profiling and Drilling**

As with cutting, normal woodworking tools and equipment can be used to route, mill and drill the edges and face of Royal MacLumber T&G. These machining operations will not reduce the exterior durability of the product, however, where the core is exposed, some color change will occur during weathering. When the core is exposed on an end or in a small face area, no additional treatment is necessary unless an aesthetic touchup is desired. However, if a large area of core is exposed directly to weather (like a long edge), it is recommended that it be painted (See Field Finishing section). As with most plastic materials, lower RPM head speeds and higher feed rates usually give the best results. To prevent melting plastic, avoid too much heat build-up on the tool.

## **Fastening**

Royal MacLumber T&G can be applied with either hand or power driven nails or screws. Staples are not recommended. For a concealed fastener application, it is recommended that the fastener be driven at an angle of 30 degrees or less to the exposed face on the tongue side, and started where the tongue and face intersect. This will drive the fastener through the core and out the back side of the plank and into the underlying nailing base at an angle. The fastener should be countersunk so it does not interfere with the next piece fitting over the tongue. However, excessive countersinking, especially when using a pneumatic gun, may result in damage to the tongue. It is also acceptable to face nail the product; avoid nailing in the grooves, and countersink the fastener for the best appearance.

To avoid building in stresses, always fasten from one end to the other or from the middle out. Never fasten from both ends to the middle. The underlying base to which T&G is fastened must be sound and provide adequate thickness for the fastener. Nails should penetrate the framing or nailing base at-least 1 1/2", while screws should penetrate at least 1". Fasteners should be spaced no greater than 16" o.c. with both concealed and face nailing. Fasteners spaced at closer intervals will further reduce thermal movement. When face nailing, place fasteners no closer to the edges and ends than 5/16" . Nails should have a minimum shank diameter of .090", while screws should be a minimum of #6 size. Typical acceptable nail types for face nailing would be box, siding or finish, or any type that can be driven flush with the surface. Finish nails should be used for concealed fastening. Typical screw types for fastening into the face would be wood or deck screws or any type with a countersinking head so they can be screwed flush. For concealed attachment with screws, select a screw with a small countersinking head so it will not break the tongue, and be covered by the next plank. All fasteners must be corrosion resistant. If the T&G will not be painted, a painted white nail is recommended when face nailing, or drive the nails flush and touch-up the heads.

## **Adhesives**

Besides mechanical fastening, T&G can be attached to other materials with exterior construction adhesive. For best results, use an adhesive containing MEK. Make sure the adhesive is compatible with both materials and that the underlying substrate is sound, clean and level. Some supplementary mechanical fastening is recommended to hold the planks in place while the adhesive cures. For exterior applications, select a weatherable adhesive that is moisture proof. For all applications, follow the adhesive manufacturer's recommendations.

## **Butt Joints: Design Considerations**

It is strongly recommended that random butt joints (where two planks meet end to end) be avoided for the best aesthetics since butt joints will tend to open and close slightly with temperature changes. Butt joints can be avoided by using one of the below techniques:

- 1) *Install the panels perpendicular to the building.* By installing the panels perpendicular to the house, the run will typically be less than 16' so the panels can be butted to the trim on both sides with a small gap (1/8" to 1/4") left on each end for expansion and contraction. This joint should ideally be covered with a molding, or it may be caulked.
- 2) *Align and cover the joints.* This technique can apply to any application, but is especially pertinent when used on ceilings where the width is over 16', or if the panels are run parallel to the house. Simply, align the joints together and perpendicular to the building and leave a small gap (1/8" to 1/4"). Cover this joint with a molding, a batten (like our 5/16" x 1-1/2" lattice slat) or a Royal MacLumber Trimboard (such as 5/8" x 6").

### **Butt Joints: General Considerations**

Butt joints should be backed by framing or a sound nailing base. The ends should be lightly touching when applied in hot weather. When applied in colder weather, the joints should be gapped about 1/8" for long boards. For shorter boards, the gap can be reduced slightly. All butt joints should be nailed on each side of the joint in both face nail and concealed applications. Face nailing at butt joints will reduce thermal movement better than concealed fastening. Nail no closer than 5/16" to ends when face nailing.

Where the end of a Royal MacLumber T&G butts into another material, it is recommended that an 1/8" gap be left and that the joint be caulked or covered with a molding.

### **Caulking**

Caulking can be utilized to fill countersunk fasteners, damaged areas or where the panels butt to other components (fascias, moldings, other trim, etc.). A good quality acrylic latex caulk is recommended for best compatibility.

### **Field Finishing**

Royal MacLumber T&G comes with a durable prefinished surface that does not require further field finishing. However, the panels can be painted at any time. To paint either new or weathered T&G, it is recommended that the surface be dry and free of dirt, dust, mildew, oil or other contaminants. Damaged areas, over driven nails, etc. should be filled with caulk or an exterior filler. For best results, first either scuff sand the surface (with 150-200 grit) sandpaper or apply one coat of a fast drying, tenacious primer like Zinsser acrylic latex primer/sealer (or equivalent) or do both. Then apply one or two coats of a compatible acrylic latex paint. The sanding and/or priming step can be skipped, but expect that the paint adhesion will develop slowly, and the new paint coat will be "tender" for several days. In all instances, follow the paint manufacturer's directions, especially regarding spread rates, application procedures and weather-related requirements. Use only top quality paints and primers, and DO NOT use stains (solid or semi-transparent), oil/alkyd paints and primers, vinyl-based paints, cement paints or shake and shingle paints.

### **Repair and Maintenance**

Repainting: If Royal MacLumber T&G has never been painted, the instructions under "Field Finishing" should be followed. However, if the panels have a previously applied coating, additional surface preparation steps may be required. The degree and type of surface preparation necessary is dependent on the old finish. Loose paint materials should be removed by sanding and scraping. If there are glossy or unweathered areas, scuff sand those areas to create "tooth" for the new coating. Clean the surface as described below and remove any mildew before painting. If the old paint coat is in good condition, repriming may not be necessary. Otherwise, proceed with priming and painting as described in the "Field Finishing" section.

Cleaning: Removal of most dirt and soil can be accomplished with plain water and a garden hose. For more stubborn contaminants and stains, common household cleaners can be used. For really difficult situations, solvents like paint thinner and denatured alcohol can be used. Cleaners containing acid, acetone or MEK are not recommended. Permanent stains can be removed with a very fine sandpaper (220 grit or higher). Mildew can be removed with one of the commercially available mildew washes, or a solution of TSP (2/3 cup), detergent without ammonia (1/3 cup), sodium hypochlorite bleach (1 qt) and warm water (3 qts). Follow all precautions for handling and applying chemicals and cleaners.

Damage: As with any building material, T&G can become damaged from a variety of sources both before and during installation, as well as during its service life. While most damage will not affect the product's durability, it may be desirable to improve the aesthetics. Most surface damage (overdriven nails, gouges, etc.) can be filled and touched up with matching caulk, exterior filler and/or paint. Shallow scrapes and scratches (from lawn mowers, weed whackers, etc.) that do not penetrate the cap can be diminished with fine sandpaper or steel wool. "Green scratchers" can be use to remove mars and minor scrapes.

*If there are further questions about Royal MacLumber Tongue & Groove Panels, please write or call:*

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