

## Preservatively Treated Porch Flooring

The porch has withstood the test of time as an icon of American architecture, adding comfort, distinction and value. Today's home designs incorporate the porch as a natural extension of the family's living space.

Southern Pine flooring has enjoyed a long history in porch construction. As with indoor flooring material, the effect of moisture in contact with wood is a top concern when designing and building a porch.

Southern Pine, combined with the technology of wood preservation, is a superior porch flooring choice. With its built-in resistance to decay and termites, pressure-treated Southern Pine porch flooring, properly installed, will provide decades of satisfying service.

This section provides information related to material specification, handling and storage, installation, finishing, and general construction considerations for porch floors using preservatively treated Southern Pine.

### Sizes, Grades and Patterns

The size, grade and pattern of flooring utilized in porches will depend upon the type of protection given to the structure. Porches without complete roof protection are generally constructed in the same manner as outdoor decks, incorporating a surface of either 2"x6" nominal size or 5/4x6 radius-edge pressure-treated Southern Pine. A dimension (2x) lumber grade of No.1 provides optimum appearance. Radius-edge decking is available in Premium or Standard grades.

The recommendations outlined in this section refer to flooring for fully-covered porches. Porch flooring is similar in sizes, grades, and patterns as the interior flooring described earlier in this booklet.

Typically, nominal thicknesses are 1" and 1-1/4" (3/4" and 1" actual) with the tongue-and-groove pattern, available in widths of 4" to 6" nominal (3-1/8" to 5-1/8" actu-

al). The grade of C&Better is most-often specified for porch flooring applications. Refer to Table 1 on page 2 for complete descriptions of flooring grades.

### Protective Preservative Treatment

To combat the deteriorating effects of outdoor exposure, moisture, decay and termite attack, pressure treatment with a waterborne preservative is strongly recommended for all wood components of the porch (e.g. framing, flooring, steps, railings, balusters). These preservatives are odorless and paintable, offering superior protection to Southern Pine products in severe outdoor exposure conditions.

Standards developed by the American Wood Protection Association (AWPA) govern the use and specification of wood preservatives used in

pressure-treating processes. Building codes require that wood in close proximity to exposed earth be pressure-treated to specific preservative retention levels, according to AWPA Standards. Generally, porch flooring and floor joists are treated for above-ground contact while supporting posts are treated for ground contact.

For complete details about products, preservative types and retentions, consult the booklet *Pressure-Treated Southern Pine*, available from the Southern Forest Products Association.

### Moisture Content and Material Acclimation

Prior to pressure treatment, a package of Southern Pine T&G porch flooring is at a moisture content of 12% for the majority of pieces if specified, represented, and grade marked as kiln-dried (KD). Refer to important information under the section "Wood and Water Relationships" on page 4. With a waterborne preservative, water is part of



the pressure-treating process, greatly increasing the moisture content of the wood, often to a moisture content of 50% and higher.

For porch flooring, the specification of material that is kiln-dried-after-treatment (KDAT) is highly recommended. Redrying the treated material will return each piece to a workable moisture content, generally to 19% or less. The advantages of KDAT flooring material include enhanced dimensional stability, plus reduced tendencies to warp, twist, and cup.

The same basic rules for proper storage, handling, and shipping as discussed earlier for interior flooring also apply here; see page 4. Remember, the pressure treatment of wood does not prevent the normal passage of moisture in and out of lumber. KDAT Southern Pine flooring will react the same as untreated interior flooring when exposed to moisture prior to installation and finishing.

A period of acclimation should be given to both the porch framing components and the pressure-treated porch flooring. Upon completion of the porch framing, it is common for experienced builders to allow one to two weeks for the framing materials to reach an equilibrium moisture content (EMC) with the exterior conditions, prior to flooring installation. This practice will reduce potential problems of buckling or separation of the flooring if installed on the framing too soon.

Proper acclimation of the flooring begins with its delivery to the job site. The material should be unloaded in a dry place and stacked on stringers to permit adequate air circulation. A layer of polyethylene should be positioned directly under all packages of flooring to prevent moisture absorption from the ground. If the temporary storage area is not fully protected from precipitation, the flooring must be loosely covered for protection from moisture (4-mil polyethylene is commonly used), yet allowing adequate circulation of air within the package. If at all possible, do not store the flooring in an area that receives direct sunlight most of the day, or in an enclosed, heated space. These conditions can allow the flooring to equalize at a moisture content too low for its intended use.

Generally, one to two weeks is considered an adequate acclimation period for KDAT porch flooring. The average moisture content of wood materials used in exterior applications is 12% for most areas of the U.S.

## Porch Flooring Installation and Finishing

Reducing the opportunities for dimensional changes to the material due to moisture fluctuations is the key to long-term performance of the porch floor. Proper porch flooring installation actually involves applying the finish prior to installation.

Many builders begin with a coat of a water-repellent sealer on the top of all floor joists, providing added protection against joist expansion due to excessive collection of moisture.

For the porch flooring, begin with a coat of paintable water-repellent sealer to all four sides and the ends, followed by (after adequate drying time) a coat of high-quality, mildew-resistant oil-based primer for exterior use. Consider applying a coat of the final oil-based porch enamel to the tongue and grooves (also to the end of any piece that will be adjacent to the house) and installing it while the paint is still wet. This procedure not only assures an effective seal against moisture penetration, but also provides a good bond between floor boards.

Unlike interior flooring, T&G porch flooring is fastened directly to the floor joists. No additional nailing base is needed. A minimum 1/2" expansion space is maintained between the flooring area and house (or wall) to allow for dimensional change. This space can be concealed with decorative exterior trim (also acclimated).

Each piece of flooring is blind-nailed at every joist, using hot-dip galvanized 8d ring-shank nails. Extend floor to create a 1" overhang beyond the band joist.

Upon completion of the flooring installation, two coats of the oil-based porch enamel to the surface and exposed ends is recommended. Solid-color stains should never be

used on a porch floor due to their low resin content.

To maintain the optimum performance of a porch following proper design, material specification, installation and finishing, a regular maintenance program should be undertaken. Inspection for water accumulation, integrity of the soil barrier, and any raised fasteners are just a few items to include in a periodic examination of the structure. Take necessary corrective action as soon as possible. Refinishing porch flooring can be expected every 3 to 5 years, depending upon weather conditions and the amount of exposure to direct sunlight.



Figure 14: Porch Flooring Details



#### ADDITIONAL INFORMATION

The Southern Forest Products Association offers a wide variety of helpful publications for design-build professionals. The titles listed below are available online in PDF. Visit [SouthernPine.com](http://SouthernPine.com) to download.

**Southern Pine Use Guide**  
(#200)  
*grade descriptions, design values, applications, specification guidelines*

**Pressure-Treated Southern Pine**  
(#300)  
*preservative types, standards, specifications, applications*

**Southern Pine Decks & Porches**  
(#305)  
*product selection, construction guidelines, maintenance*

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#### Porch Design Considerations

Attention to proper porch design is as important to the longevity of the structure as are the details of porch flooring specification and installation. Inadequate air circulation beneath the porch and trapped moisture between framing components will greatly reduce the serviceability and long-term appearance of the porch.

The following recommendations are key elements to the proper design and construction of a fully-covered porch:

- Slope the exposed soil underneath the porch away from the center to permit runoff of any water that may accumulate.
- To reduce the upward migration of moisture from the exposed soil beneath the porch, cover with a moisture barrier (4-mil polyethylene is acceptable), leaving two feet of exposed soil inside the perimeter of the porch. Anchor edges of this barrier with gravel.
- Encourage air flow beneath the porch by using ornamental vents or lattice skirting.
- Slope the porch framing 1/4" per foot away from the house to permit adequate water runoff.
- Vent columns and newell posts at top and bottom.
- Check with your local building code department to be sure all code requirements are satisfied within your porch design.