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Installation Guidelines for DuroDesign Engineered Wide-Plank Oak Flooring

You must read and understand these instructions completely before installing DuroDesign Wide-Plank Oak flooring. In the event these instructions leave unanswered questions or if you would like additional information, please contact DuroDesign Inc. toll free 1-(888) 528-8518 or (450) 978-3403 prior to beginning installation. It is the responsibility of the installer to determine suitability of DuroDesign Wide-Plank Oak for each application. Prior to installation, installer should inspect all material. Any defect must be reported directly to DuroDesign Inc. Should an individual piece of material be doubtful as to appearance or dimension the installer should not use the piece in question. DuroDesign Inc. will send a replacement in a timely manner.

NOTE: DuroDesign Inc. makes no warranty or guarantee of the quality of work performed by a selected installer. DuroDesign Inc. disclaims all liability for imperfect installation of its product. This warranty does not cover material with visible defects once they are installed in error. DuroDesign Inc. declines responsibility for failure resulting from or connected with subfloor or jobsite damage or deficiencies.

DuroDesign Engineered Wide-Plank Oak flooring may be installed over a plywood or OSB subfloors, dry and finished concrete sub-floors, existing ceramic tile, vinyl or wood floors, and radiant heated sub-floors. Installation of DuroDesign Wide-Plank Oak Flooring may be by the nail-down, glue-down or floating method

COLOR VARIATION

Oak is a natural material; therefore variations in color naturally occur. Each box should be inspected for differences in color. Mix boards from different cartons to maintain natural color and pattern variation and achieve an optimal visual blend.

ACCLIMATION

One week before installing, the space to receive the flooring must be maintained at a constant temperature of 72°F (22°C) in order to stabilize both temperature and relative humidity levels. A few days before the installation, relative humidity on the premises must be stable at 37% to 45%. Do not acclimatize as with conventional hardwood flooring. Leave DuroDesign Wide-Plank Oak flooring in their sealed boxes until time of actual installation.

During the installation period it is important that temperature and humidity levels be maintained in accordance with those expected to exist after installation. Optimum installation conditions are 72 $^{\circ}$ F (22 $^{\circ}$ C) at 37 – 45 % humidity.



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SUBSTRATE PREPARATION

Underlayment-grade Plywood and Man-made Board Substrates must be clean, level, dry, and free of contaminations. Fill any low spots with appropriate filler and sand any high spots. For buildings with a raised foundation, install ground cover of 6 mil polyethylene over the earth in crawl space. The moisture content of the sub-floor, as measured by a moisture meter, must not exceed 12% and not be more than 4% above or below the moisture content of the flooring.

Concrete Substrate is required to be sound, smooth, level and flat with a maximum variation of 1/8" in 10'. Fill any low spots with appropriate filler and scrape any high spots. Subfloor must be properly cured and tested for moisture content. Slab must be properly cured. Flooring must not be installed if vapor pressure exceeds 3 lbs. per 1000 square feet in 24 hours as tested according to ASTM F 1869 (calcium chloride test method). Preferably the slab should be tested according to ASTM F 2170 (Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In Situ Probes) Flooring must not be installed if the relative humidity inside of the concrete slab exceeds 75%.

INSTALLATION

Choose your installation method. The preferred method of installation is the floating method as it is usable over any substrate. The nail-down method may be used on plywood or OSB subfloors, while the glue-down method may be used over concrete, plywood or OSB sub-floors.

For best appearance, DuroDesign Wide Plank Oak Flooring should be installed parallel to the longest wall of the space. A $\frac{1}{2}$ " (12mm) expansion space must be left around entire perimeter. For rooms with a dimension exceeding 20ft. (6m) add 1/16" (2mm) per additional 3ft. (1m) It is important that the tongue & groove of each plank fit together tightly at all seams and butt joints.

Undercut door casings using a handsaw and a scrap of flooring to gauge the height. If using the nail-down or floating method of installation, lay a 6 mil polyethylene vapour barrier over the subfloor. Overlap by 8 inches and and tape all seams.

Nail Down Method. Starter row must be firmly face-nailed, and held firmly in place with wedges. Once starter rows are secure, additional rows should be blind nailed using a professional quality flooring nail gun. Excessive splitting or crackling of plank tongue can result from use of improper equipment or incorrect equipment settings. Beginning a minimum of 2" from end of first plank, space nails at 8" intervals. To prevent splitting, nails should not be placed closer than 2" to the end of plank. Avoid the use staples as they have less holding power than flooring nails.

Glue Down Method. Starter row must be held firmly in place with wedges. Flooring material and containers of adhesive should be conditioned at normal room temperature for 72 hours before beginning installation. DuroDesign recommends only using Bostick Best wood flooring adhesive. We will not warranty our flooring with another type of adhesive. Follow manufacturer directions for either "wet-lay" or "walk-on-work" installation method.



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Use releasable 2" masking tape and strap clamps at 6 foot intervals to hold planks together from creeping apart due to glue tension.

Do not allow glue onto plank surface. Remove excess adhesive immediately as per glue manufacturer's instructions.

Floating method. Starter row must be held firmly in place with wedges. Apply a thin bead of polyvinyl acetate glue to the top inside edge of groove at side and end of each board. Press boards firmly together, using tapping block as necessary. Tape glued boards together at side and end seams. Allow first two rows to set and dry before continuing to lay subsequent rows in the same fashion, using a sufficient number of wedges and spacers to keep planks tightly fitted together. The last plank may need to be trimmed in width. Remember to maintain the expansion space between the last plank and the wall. Insert the last plank firmly into place with the help of a small pry-bar and secure with spacers. Remove spacers only once glue is dry.

NOTE: It is important not to allow glue onto plank surface. If glue does spill or leak onto surface of flooring, please consult adhesive manufacturer for appropriate corrective action.

In-floor Radiant Heat. Regardless of the season, radiant heat system should be turned on and remain on ten days prior to installation at 2/3 of maximum output. Two to four days before installation, reduce and leave heat output to maintain 64°F (18°C) for duration of installation. Continue to operate radiant heat system after installation, waiting three days before slowly raising temperature over a four day period to normal heat output. A radiant floor should not produce surface temperatures over 81°F (27°C). When choosing an installer for application over radiant heat, look for members of the Radiant Panel Association.

NOTE: Any wood flooring, even an engineered wood floor, will expand and contract in response to changes in temperature and humidity. Maintain a consistent indoor environment between 60°F (16°C) - 80 °F (27°C) at 30% - 50% relative humidity throughout the year for best performance and visual appearance of your wood floor. Small visible gaps between boards will vary seasonally and are normal. By controlling the indoor environment, you will minimize the effects of contraction and expansion of your floor and thus seasonal gapping in your floor.

MAINTENANCE AND CLEANING

Buying a quality floor covering and proper maintenance, is the key to lasting beauty. Your floor is a long-term investment since in most cases with hard surfaces flooring, when the house is sold and/or redecorated, the floor will remain.

To ensure the lasting beauty of your floor and additional coating of urethane should be applied every year for high-traffic commercial (i.e. retail stores, restaurants, etc.), 2 to 3 years for medium traffic (i.e. offices, museums, etc.) and 5 to 7 years for light commercial or residential. This is a simple and quick operation- sand with an orbital flooring sander (SquarBuff, Alto) with 180 grit paper followed by two coats of our MP765 water-base varnish with overnight drying. A well maintained floor will last for decades.

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CLEANING TIPS

- To eliminate fine particles of dirt and grit that act like sandpaper and will scratch any floor, vacuum or sweep regularly.
- Clean regularly with a damp mop. Occasionally, (after cleaning the bulk of the dirt with water only) you can use wood floor cleaners (i.e. Basic Coatings, BonaKemi, Finnitec, etc.) diluted in water. NEVER WAX YOUR FLOOR AS THIS IS A URETHANE FINISH!
- · Spills should be wiped up immediately.
- Use walk-off mats at entrance doors and in front of kitchen sink. Avoid rubber backed or other non-ventilated mats or rugs.
- In the kitchen, use a rug in front of the working areas such as in front of the stove and sink to prevent local premature damage.
- Install proper protectors under "feet" of furniture.
- Caster-wheeled chairs should have wide casters.
- Periodically check floor for signs of wear.
- Be careful of high heels! Due to the concentration of weight on such a small surface, an
 average size woman in high heels can exert 2000 pounds per square inch of pressure on
 the floor that could possibly indent any floor permanently.