



GILFORD·JOHNSON
FLOORING

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Steps for Successful Wood Flooring Jobsite Preparation

There are many variables that contribute to a successful wood flooring job, but some of the most important considerations occur long before the first board is ever installed. Evaluating the jobsite to determine if it is in the proper condition to receive the wood is the first step to ensuring the long-term performance of the floor.

Conducting an evaluation of the jobsite includes testing and documenting information gathered from the entire jobsite, not just the interior of the structure, but the outside environment as well. A thorough assessment of the outside environment should include six items: doors and windows, gutters, drainage, grading of the lot, moisture infiltration, and sprinklers.

It is not the wood floor installer's job to be an expert in these areas, but it **is** the installer's responsibility to be aware of them and how they may affect the performance of the wood floor. If available, having access to blueprints that include landscape details can be helpful.

Before the wood flooring is delivered to the jobsite, all doors and windows must be installed and in working condition. This means that door sweeps and weather stripping should be intact and not interfere with the floor. If light is visible around the door, conditions are not conducive to a successful installation. In addition to these issues, missing caulking, and obvious water damage or infiltration should be repaired by a qualified contractor before any flooring work begins.

Gutters and downspouts should be installed and should divert water away from the foundation. If the structure doesn't have gutters, if the gutters don't slope downward toward down spouts, or if there is evidence of rust, leaking or icicles on the gutters, then these issues should be repaired by a qualified contractor before any flooring work begins.

Grading of the lot can have a huge impact on wood floor performance. If the ground slopes toward the home, water will naturally travel toward the foundation or slab and into the home. A simple walk around the structure should reveal any potential concerns, which should be repaired by a qualified contractor before any flooring work begins.



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The grade level of the lot also will dictate the type of flooring that should be specified for the job. Engineered floors can be appropriate for above-grade, on-grade and below-grade installations. Solid flooring can be installed on-grade and above-grade only, unless specifically specified by the manufacturer. **Note:** If the soil is three inches or more above any wall adjoining the flooring, then it is considered to be below-grade.

Water sources on or near the lot have the potential to introduce moisture to the structure, which could potentially impact the wood floors. Areas of concern include rivers, lakes, ponds, swimming pools, and other water fixtures, like hoses. Water sources like these can cause ground water saturation, which may lead to moisture infiltration. This could affect the performance of the floors over the long-term.

Misaligned sprinklers that spray against the structure or its foundation are also a cause for concern. This can occur with raised flower beds, planter boxes, plants, shrubs, and gardens that are near or against the structure's foundation. All of these landscaping items need a water source, which could introduce moisture to the structure and affect the long-term performance of the floors.

Once these exterior issues are addressed, a thorough jobsite evaluation should occur inside the structure as well. This can include evaluating other trades, HVAC units, basements and crawlspaces, and subfloor conditions.

It is important that all wet trades be completed before wood is installed. Wet trades like concrete, masonry, plaster, drywall, texturing and painting can introduce moisture to the jobsite, which will affect the performance of the wood flooring.

Permanent heating, air conditioning and humidification systems should be installed and operating at least five days before installation to begin conditioning the home to the expected living environment. These systems should remain in operation during and after installation as well. If a permanent system is not available, a temporary system that mimics the expected living conditions can enable the installation to proceed until the permanent system is fully operational.

Crawl spaces should be a minimum of 18" from the ground to the underside of the floor joist, and 12" from the ground to the underside of the beams. Traditional ventilated crawlspaces should have ventilation openings a minimum of one square foot for each 150 square feet of under-floor space. 2006 IRC does allow emitting these vents in a crawlspace with perimeter insulation if a



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Class 1 vapor retarder material (sealed and taped) with cover extending 6" up the side walls, and the crawlspace has a continuously operated exhaust fan or is supplied with conditioned air.

Evaluation of the subfloor will depend on the subfloor material. Concrete subfloors should be dry before installation takes place. Minimally, this can take 30-45 days, but this time can vary greatly depending on ambient conditions, exposure to the environment, and potential rewetting. Concrete subfloors also should be flat to within $\frac{1}{8}$ " within a 6' radius or $\frac{3}{16}$ " within a 10' radius; clean of contaminants such as sealers, waxes, oils, paint, and drywall compounds; and a minimum of 3,000 PSI.

Wood subfloors require a different evaluation process than concrete subfloors. For joists and trusses supporting wood subfloors measuring 16" on center or less, panels should be 4' x 8' sheets of either a minimum of $\frac{19}{32}$ "-thick CD Exposure 1 plywood or $\frac{23}{32}$ "-thick OSB Exposure 1. If joists or trusses supporting wood subfloors are more than 16" and less than 19.2" on center, then the thickness of the panel subflooring should be a minimum of $\frac{23}{32}$ " plywood or OSB 4'x8' sheets, and should be glued and nailed down. When joists or trusses are more than 19.2" up to 24" on center, then the thickness of the panel subflooring should be a minimum $\frac{7}{8}$ " plywood or OSB. As with concrete subfloors, wood subfloors should be clean, dry and flat. Check this by using a 6' or 10' straight edge, laser level or string line. Wood subfloors must be flat to within $\frac{1}{4}$ " in 10' or $\frac{3}{16}$ " in 6'.

Once the exterior and interior conditions of the structure have been evaluated, both the wood and the subfloor should be tested for moisture. For concrete subfloors, use the test recommended by the adhesive manufacturer, follow the ASTM testing method, as well as the manufacturer instructions provided. For wood subfloors, test a minimum of 20 random areas per 1,000 square feet and average the results. Wood flooring and wood subflooring must be within 4% moisture content for strip wood flooring less than 3" wide, and within 2% moisture content for any flooring product wider than 3".

The most important thing to remember is that wood is a hygroscopic material that reacts to its environment. Taking these steps to establish the ideal conditions for a proper jobsite environment, both inside and outside the structure, will improve the long-term performance of the wood floors.