

INSTALLING LAMINATE FLOORING

Congratulations on choosing to install laminate as your new flooring! When it comes to installing laminate you have a number of different options. This guide will help you determine what is right for your floor to ensure you have a successful installation.

✓ **TIP:** If reading online, click on any item in this contents list or any grey text in the document to jump to a specific section.

Installation Options.....	2	Installing the First Row of Glueless Laminate	30
Subfloor Type	2	Installing the Rest of the Glueless Laminate Floor	32
Flooring Grade.....	3	Installing the Last Row of Glueless Laminate	33
Flooring Construction	4	Curing Times for Glueless Laminate Floors	33
Laminate Ratings.....	6	Installing Glued Laminate.....	34
Floor Installation Methods	7	Tools and Materials	35
Radiant Heat System Considerations	8	Types of Adhesives for Glued Laminate	35
Planning Your Installation.....	10	Installing the Underlayment for Glued Laminate	36
Consider Your Room Layout	10	Installing the First Row of Glued Laminate	36
Design Your Floor Layout.....	11	Installing the Rest of the Glued Laminate Floor	39
Factor in Waste	11	Installing the Last Row of Glued Laminate.....	40
Estimate Installation Time	12	Curing Times for Glued Laminate Floors	40
Install Safely	13	Special Circumstance Installation.....	41
Preparing for Installation.....	14	Types of Trim, Molding and Transition Pieces	41
Performing a Moisture Test	14	Molding Installation Methods.....	42
Getting Your Flooring Delivered	15	Using T-Molding for Interior Doorways.....	43
Acclimatizing Your Flooring	15	Using End Molding for Exterior Doorways	44
Inspecting Your Subfloor	16	Working around Vents.....	44
Undercutting Door Casings	20	Installing Laminate Flooring on Stairs	45
Removing Molding and Doors	20	Working around Fireplaces and Brickwork.....	48
Understanding the Installation Basics.....	21	Using End Molding or Square Nose for Carpet Transitions	50
Allow for Expansion and Contraction	21	Using Reducer Strip for Vinyl Transitions	51
Always Use an Underlayment	22	Finishing the Job.....	52
Your Floor's Foundation: The First and Last Rows	24	Installing Wall Base and Quarter Round Trim.....	52
Stagger Joints for a Natural Look.....	26	Correcting Defects.....	53
Inspect All Planks before Installation.....	27	Sealing Moisture Prone Areas.....	53
More Tips for a Successful Installation.....	27	Copyright and Usage Information	54
Installing Glueless Laminate.....	29	Legal Disclaimer and Liability Release	55
Tools and Materials	29		
Installing the Underlayment for Glueless Installations.....	30		

INSTALLATION OPTIONS

Before you begin your laminate installation, there are a number of things to consider including:

- **Subfloor Type**
- **Flooring Grade**
- **Flooring Construction**
- **Laminate Ratings**
- **Floor Installation Methods**
- **Radiant Heat System Considerations**

Subfloor Type

The subfloor is the structure upon which you will be installing your laminate floor. Types of subfloors include wood, concrete, radiant heating systems and existing flooring. Generally, because laminate is so durable, it can be laid over any of these subfloors. However, if you're installing over a radiant heat system, always check with your flooring manufacturer to ensure your laminate can be used in conjunction with radiant heating.

Wood Subfloors

Wood subfloors are plywood, plyboard, existing hardwood flooring or Oriental Strand Board (OSB). These types of subfloors may be above crawl spaces, placed over concrete or on the second level of a home.



NOTE: Particleboard is not considered a wood floor. Laminate flooring should not be installed over particleboard subfloors unless specifically approved by the flooring manufacturer.

Concrete Subfloors

Concrete or cement subfloors can be found in homes with solid foundations or in apartment/condos.



TIP: While a 30 day old concrete slab may pass a moisture test, it is best to wait until the slab is 60-90 days old before testing and laying your flooring.

Radiant Heat

Always check with your retailer or manufacturer to ensure the type of laminate you choose can be installed over a radiant heat system. Radiant heating affects the temperature, moisture and humidity of the flooring. Over time, these factors can cause problems if your flooring was not designed to be installed over a radiant heating system. For more information on laminate flooring and radiant heat systems, see the **Radiant Heat System Considerations** section on page 8.

Laying Over Existing Flooring

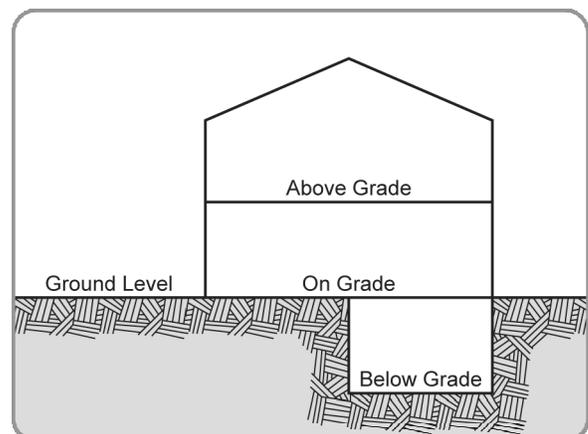
Always follow the flooring manufacturer's recommendations when installing your laminate floor over an existing solid floor. In most cases, you can install laminate over porcelain, ceramic tile, porous stone (like travertine or slate), existing hardwood or vinyl floors. Laminate should not be laid over carpeting or carpet padding.

- ✓ **TIP:** Existing sheet vinyl floors can act as an added moisture barrier between your subfloor and your laminate floor. Peel and stick vinyl does not provide an adequate moisture barrier because of the potential for moisture to seep up between each square. Additionally, be aware of asbestos if you are removing existing flooring. Some older flooring products contain asbestos which can contaminate your home or office if removed. If you find asbestos in your existing flooring, do not remove it. Follow all federal, state and local guidelines for containment.

Flooring Grade

The flooring industry breaks a home or structure up into three grade levels. Some flooring can only be installed on certain grades due to moisture concerns. The three types of grades are:

- **Above Grade:** Flooring installed on a second floor of a home or above.
- **On Grade:** Flooring installed on the ground level of a home.
- **Below Grade:** Flooring installed below the ground level of a home (such as basements).



- 📄 **NOTE:** If the soil that surrounds the home is 3 or more inches above the floor on any level, that level is considered below grade.

Most laminate flooring can be installed on any grade within the home. However, because of the moisture and humidity levels in Below Grade environments always ensure the manufacturer approves Below Grade installations.

Flooring Construction

Like engineered wood flooring, laminate flooring is made up of various layers which are bonded, or laminated, together to form a solid plank. Unlike engineered wood flooring where the top layer is actual wood, the decorative layer on laminate flooring is a high-resolution image of wood, tile or stone printed on foil or paper which is then fused to the other layers.

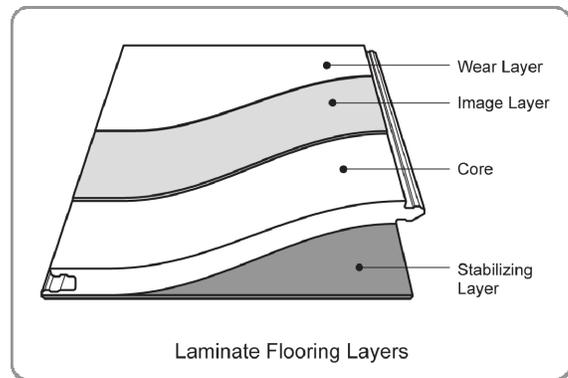
There are two main processes for manufacturing laminate: Direct Pressure Laminate (DPL) and High Pressure Laminate (HPL). Both types of flooring come with cores that vary in thickness from 6mm to 12mm. Generally, thicker cores are more stable and durable.

Direct Pressure Laminate (DPL) Flooring

Direct Pressure (DPL) laminate flooring is the most common and least expensive type of laminate flooring on the market. It is assembled, heated and pressed together at the same time during the manufacturing process.

This type of flooring is made up of three to four layers:

- **Wear Layer** (or overlay) is made of various coats of aluminum oxide or melamine which protects the image and flooring from wear and damage. This makes the laminate flooring resistant to scratches, dents, burns, stains, fading and other damage.
- **Image Layer** or (decorative layer) is a high-resolution image of wood, tile or stone printed on foil or paper. This is what makes the laminate look like natural stone or wood.
- **Core Layer** (or carrier board) which provides strength and durability from foot traffic and other weight (such as appliances or furniture). Most often the core layer is made from medium density fiber-board (MDF), high-density fiber board (HDF) or particle board. This layer may also contain melamine plastic resins that help resist moisture. Both MDF and HDF are good core materials. MDF cores are slightly more structurally sound while HDF cores absorb glue better at joints.
- **Stabilizing Layer** is a moisture-resistant resinous material which equalizes the pressure and holds all the layers in place. Stabilizing layers made from laminate or melamine are better at resisting moisture than paper backings.



High Pressure Laminate (HPL) Flooring

High Pressure Laminate (HPL) is a stronger, more stable and dent resistant laminate floor; however, it is also more expensive than DPL flooring. HPL flooring is assembled in two parts. First the top and bottom layers are constructed then both layers are fused to the core layer.

✓ **TIP:** HPL flooring may be a good choice if you are going to stay in your home for a long period of time and there are areas of the home with extremely high traffic. HPL flooring is also a good choice for businesses with high foot traffic.

This type of flooring is made up of five or more layers:

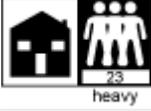
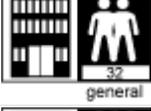
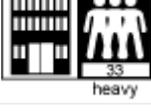
- **Wear Layer** (or overlay) is made of various coats of aluminum oxide or melamine which protects the image and flooring from wear and damage. This makes the laminate flooring resistant to scratches, dents, burns, stains, fading and other damage.
- **Image Layer** or (decorative layer) is a high-resolution image of wood, tile or stone printed on foil or paper. This is what makes the laminate look like natural stone or wood.
- **Phenolic Treated Kraft Sheets** provide more impact resistance and a limited sound barrier.
- **Penetrating Seam Sealant** is a hot wax-oil treatment which soaks into the core layer to provide long-term moisture resistance.
- **Core Layer** (or carrier board) which provides strength and durability from foot traffic and other weight (such as appliances or furniture). Most often the core layer is made from medium density fiber-board (MDF), high-density fiber board (HDF) or particle board. This layer may also contain melamine plastic resins that help resist moisture. Both MDF and HDF are good core materials. MDF cores are slightly more structurally sound while HDF cores absorb glue better at joints.
- **Phenolic Treated Kraft Sheets** provide additional impact resistance and a limited sound barrier to the underside of the core layer.
- **Stabilizing Layer** is a moisture-resistant resinous material which equalizes the pressure and holds all the layers in place. Stabilizing layers made from laminate or melamine are better at resisting moisture than paper backings.

Laminate Ratings

The Association of European Producers of Laminate Flooring (EPLF) devised an industry standard for rating how resistant a laminate flooring product is to burns, impact and swelling in moist conditions. This AC system has five levels: AC1 through AC5.

In addition to the five general levels, each rating is further defined and depicted as an international symbol. The symbols described on the chart below are printed on each flooring package and represent:

- The primary application in a residential home (a symbol of a house) or a commercial building (a symbol of an office building).
- The traffic intensity which is defined by a symbol of one person (moderate), two people (general) or three people (heavy).
- A two digit number. The first digit is the primary application, either 2 for residential or 3 for commercial. The second digit indicates the traffic level: 1 for moderate, 2 for general or 3 for heavy.

International Symbol	Rating	Description
	AC1 - 21 Moderate Residential	Good for moderate traffic areas such as bedrooms or closets in homes
	AC2 - 22 General Residential	Good for general traffic areas such as kitchens and living rooms in homes
	AC3 - 23 Heavy Residential	Good for any heavy traffic area in homes
	AC3 - 31 Moderate Commercial	Can be used in homes as well as in moderate traffic commercial buildings (such as offices)
	AC4 - 32 General Commercial	Can be used in homes as well as in general traffic commercial buildings (offices, café's, etc.)
	AC5 - 33 Heavy Commercial	Can be used in homes as well as in heavy traffic commercial buildings (retail stores, public buildings, etc.)

- ✓ **TIP:** While any rated laminate can be installed in your home, AC4 and AC5 rated laminate floors have coarser surface textures. These floors may be more uncomfortable to walk on with bare feet.

Floor Installation Methods

All laminate is installed as a floating floor. This means the flooring is not attached (either by glue or nails) to the subfloor. It “floats” over the underlayment and subfloor.

There are three different floating installation methods for laminate floors: glueless floating, pre-glued floating and glued floating. The only exception to general floating installations is when laminate is installed on stairs. Laminate should never be floated on stairs for safety reasons. For more information on installing laminate on stairs, see [Installing Laminate Flooring on Stairs](#) on page 45.

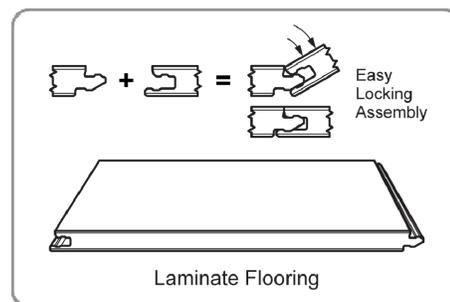
Glueless Floating Method

Today, many laminate floors are designed with a special click and lock system. Pieces of flooring fit tightly together then click and lock into place (much like Lego blocks). Glueless floating laminate floors are the most popular because they are relatively easy to install and require no special tools or heavy duty adhesives. Glueless laminate floors come in both planks and squares depending on the “look” you want.

✓ **TIP:** Many glueless floors can be “unlocked” and disassembled to replace damaged planks.

Locking Mechanisms

Each laminate manufacturer has a slightly different click and lock design. Some mechanisms use a flat clicking process while others snap or slide together at an angle. Other manufacturers have dual-clicking systems while still others use a hinged concept. No matter which locking system you choose, be sure to test how the flooring works before you buy it. One locking mechanism may be more cumbersome or difficult to use than another.



Pre-Glued Floating Method

Pre-glued laminate floors are manufactured with the adhesive already applied to the tongue and groove. During installation, you simply wet the glue to activate the adhesive elements. These floors fit together much like hardwood or bamboo floors but with less mess since the adhesive is already applied to the flooring. This type of installation is slightly more complex than installing a glueless laminate floor.



NOTE: Most times, pre-glued floors cannot be disassembled.

Glued Floating Method

The glued floating method is the original, messiest way, to install a laminate floor. With this method, you'll apply a quality flooring adhesive to the tongue or groove of each plank then fit tightly together. This type of installation is the most complex of the three laminate installation methods.



NOTE: Most times, glued floors cannot be disassembled.

Radiant Heat System Considerations

Radiant heat systems heat homes from beneath the flooring. There are three main types of radiant heat systems:

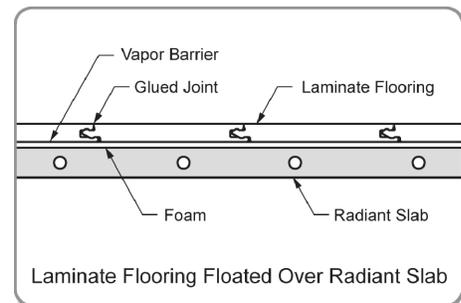
- **Radiant air** where air heats the flooring. Because air is a poor conductor of heat, this method is not very cost effective for most homes.
- **Electric radiant** where electric currents provide the heat. These types of systems usually come as mats that are laid beneath or embedded in the subfloor.
- **Hydronic radiant systems** (also called liquid systems) where heated water is pushed through tubing or piping laid in a concrete slab or below a subfloor.

Each of these systems can be installed by two different methods:

- **Wet** installation where the piping is installed directly in a concrete slab or in lightweight concrete above a wood subfloor.
- **Dry** installation where the piping is installed between two layers of plywood or attached directly below the subfloor. When installed between layers of plywood, aluminum diffusers are often used to distribute the heat evenly across the subfloor. When installed below a subfloor, reflective insulation may be used to direct heat upward into the floor.

Always check with your retailer or manufacturer to ensure the type of laminate you choose can be installed over a radiant heat system. Radiant heating affects the temperature, moisture and humidity of the flooring. Over time, these factors can cause problems if your flooring was not designed to be installed over a radiant heating system.

You may be able to install a floating laminate floor over either a wood or concrete radiant heat system if approved by your laminate manufacturer.



NOTE: Always follow your flooring manufacturer's instructions when installing laminate above a radiant heat system.

When installing a laminate floor over a radiant heating system, all the same installation steps are required including moisture testing, acclimatizing your flooring and installing an underlayment. In addition to your flooring manufacturer's instructions, you should also keep these things in mind:

- Always follow your specific flooring manufacturer's temperature recommendations both before and during your installation.
- Keep the subfloor surface temperature below 82° F.
- The overall temperature of the room must not vary more than 15° F during the year. The relative humidity should stay between 35% and 65% year round.

PLANNING YOUR INSTALLATION

Using the Advanced Estimator tool through FindAnyFloor.com is one of the best ways to estimate and plan your laminate flooring project. When using the Advanced Estimator tool and this guide, you will:

- **Consider Your Room Layout**
- **Design Your Floor Layout**
- **Factor in Waste**
- **Estimate Installation Time**
- **Install Safely**

You should begin planning your installation before you receive or open one box of your new laminate flooring to ensure you have enough materials on hand when installation day rolls around.

Measuring accurately, using sketches or drawings of your installation area and having the proper tools on hand will also make your installation go much smoother. Remember, the more you plan in the beginning, the fewer obstacles and surprises you'll probably run into during your installation.

Consider Your Room Layout

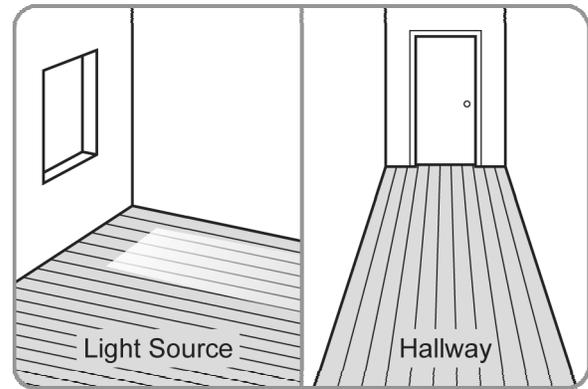
Do you have an odd shaped room or is your installation area a standard square or rectangle? Do you have to work around things such as kitchen islands, closets, vents, doorways and stairs?

If you have a complex room, take the time to do more detailed drawings and measurements. Identify the areas that may require more planning and time then think about how you'll install your laminate in those areas. Measure the area and make note of your measurements on your room sketch or in your notes. If you're worried, have someone else verify your measurements to make sure they are accurate. Also, using the Advanced Estimator tool on FindAnyFloor.com can help you determine the best layout for your room.

Design Your Floor Layout

Which way does the sunlight come into the room? Where are the windows and doorways?
Which side of the room is the longest?

Professional installers usually recommend laying laminate flooring parallel to the light sources in the room (left image). For narrow areas such as hallways, laminate flooring looks the best when boards are oriented along the length of the area (right image). Many professionals recommend laying out a few of the laminate boards to see how they will look in the room before the installation. Make sure the lighting in the room softens the joints making them less visible.



If possible, try to run the laminate flooring so that it is perpendicular to floor joists. This provides the floor with extra stability. However, if faced with a decision, laying flooring parallel to the incoming light source is more important and aesthetically pleasing than the added stability.

Factor in Waste

Anytime you install flooring, there will always be a certain amount of waste. Waste can be due to:

- Installation mistakes.
- Odd shapes in the room that you must work around.
- Laminate boards that have major defects.
- Type of installation (horizontal or diagonal).

Non-professional installers should account for a waste factor of between 10%-15% for standard, horizontal installations. For diagonal or other complex installations, factor in 20% or more as these types of installations produce more waste because of the different cuts required. Use the Advanced Estimator tool on FindAnyFloor.com to help you determine how much laminate flooring you'll need to complete your project.

Be sure to factor waste into your original purchase. Vendors continually discontinue and add the types of flooring they offer. There is no guarantee that your flooring vendor will carry your exact laminate flooring in the future.

And remember, **you should always end up with extra flooring at the end of your project.** Over the life of the floor you may need to replace laminate that get damaged from use.

Estimate Installation Time

There are a variety of factors that affect installation time such as:

- **Amount of planning:** Planning helps you identify your room's problem areas so that you can determine what to do before you get to them.
- **Experience level:** If this is your first time installing a laminate floor, it may take you longer than a non-professional who has already done one or more installations.
- **Room complexity:** Generally, simple rooms take less time than complex areas.
- **Installation method:** Installation times greatly depend on what method you use to install your laminate floor.
- **Assistance available:** If you are the only one working on the project, it will probably take longer than if you have help. Although, too much assistance can also be more of a hindrance than a help.

Rarely do home improvement projects go smoothly. Even professionals have bad days or run into unexpected problems. Remember:

- **It's going to take longer than you expect.** Plan your installation with plenty of time to run over schedule. Avoid beginning your installation with holidays around the corner or a major dinner party the following day. Take your time and don't rush.
- **You're going to make mistakes.** If you factored in enough waste, you should still have enough good flooring to complete your project. Correct your error and keep going.

Install Safely

Safety should be taken into account for any flooring project. When installing your laminate flooring, use the following guidelines to ensure a safe working environment.

- Read and follow all the flooring manufacturer's guidelines when installing your laminate flooring.
- Wear the proper clothing and shoes (work boots or tennis shoes).
- Wear OSHA approved safety glasses and/or hearing protection.
- Wear other personal protective equipment (such as knee pads, shin guards, gloves and/or respirators) when necessary or required.
- Do not work under the influence of drugs, alcohol or other medications which can impair or limit your decision making ability.
- Keep your work area clear from clutter and debris. These items are not only tripping hazards, but can scratch and damage your new laminate floor.
- Make sure the room has proper ventilation and adequate lighting.
- Be sure the electrical power to the area you're working in can support all the tools you are using.
- Know where your first aid kit is located or keep one nearby.
- Use all tools and machinery as intended by the manufacturer with safety guards in place.

PREPARING FOR INSTALLATION

Preparation for your laminate flooring project should begin before your first box of flooring is delivered or opened. Taking the time to properly test and prepare your subfloor and flooring will help you avoid problems down the road. The tasks you'll do before you begin installing include:

- **Performing a Moisture Test**
- **Getting Your Flooring Delivered**
- **Acclimatizing Your Flooring**
- **Inspecting Your Subfloor**
- **Undercutting Door Casings**
- **Removing Molding and Doors**

Performing a Moisture Test

Most professionals will agree that wood floors and moisture are bitter enemies. Excessive subfloor moisture can damage your laminate over time. While moisture testing is more important for hardwood and bamboo flooring, flooring manufacturers (and some flooring professionals) recommend performing a moisture test prior to installing your laminate flooring.

With that said, many homeowners feel the cost (both time and money) of performing a moisture test is unnecessary for laminate installations. Instead, many homeowners simply lay an additional moisture barrier (6 mm polyethylene/plastic sheeting) between their subfloor and their laminate flooring. This inexpensive solution helps prevent moisture from seeping from the subfloor into the laminate flooring.



NOTE: If you are installing laminate over a concrete subfloor, you should always use a polyethylene moisture barrier unless otherwise directed by your flooring manufacturer.

If you are worried about excessive moisture in your subfloor and would like to perform a moisture test, you can purchase a probe or pinless moisture meter to test wood subfloors or you can perform a Polyethylene, pH Alkalinity, or Calcium Chloride test on concrete subfloors. If you still have questions, contact your flooring manufacturer or a flooring professional.

Getting Your Flooring Delivered

Once your subfloor passes all moisture tests, it's time to get your flooring delivered! Flooring should be at your home or the installation site between 2 and 7 days before you begin your installation (depending on your manufacturer's recommendations). Once delivered, your flooring needs time to acclimatize to your home's environment.

Acclimatizing Your Flooring

Most laminate flooring needs an environment that is between 65° and 85° F with a relatively humidity of between 30% and 90%. Prior to installation, you must make sure the laminate is acclimatized to your home's average living environment for between 48 and 96 hours. **You should always store and acclimatize your laminate in the room in which it will be installed.**

Additionally, follow these guidelines when acclimatizing your new laminate floor:

- The home or building must be fully enclosed. This is especially important when installing in newly built homes.

 **NOTE:** If installing on a concrete subfloor, the concrete must be at least 30 days old.

- Keep the environment where the flooring will be installed at a normal "living" level for at least five days using either a heater or air conditioner. If the room is more moist, dry, hot or cold than normal, your floor may acclimatize incorrectly which could lead to expansion or contraction problems later on.
- Read and follow all the manufacturer's guidelines for acclimatizing your new laminate floor. Not doing so may void the flooring manufacturer's warranty.
- If recommended by the manufacturer, break the flooring into small piles in the center of the room where it will be installed. Place 1" sticks between each layer of flooring to help with air flow. Or simply open the ends of the package to allow air to flow more freely.

✓ **TIP:** Always follow the manufacturer's guidelines for acclimatizing your flooring. Some flooring does NOT need to be removed from the packaging to acclimatize. If using 1" sticks to aid with air flow, place sticks carefully so you do not scratch the finish of your new flooring.

- If opening the package is not recommended by the manufacturer, stack cartons with spacers according to the manufacturer's instructions.

- Always store laminate flooring away from outside walls, windows, doors and air vents.
- NEVER store your new flooring in a garage, even if the garage is climate controlled. Even when climate controlled, garages have different moisture conditions than your installation area.
- Make sure your laminate flooring is out of direct sunlight at all times.

Inspecting Your Subfloor

While your laminate floor is acclimating, you should inspect and prepare your subfloor. Your subfloor should be:

- Dry and have passed all moisture testing requirements.
- Free from all debris and swept clean.
- Smooth and level. If the floor is not level, take the necessary steps to level the floor.
- Free from contaminants (such as oil, wax, grease and paint) which might interfere with the installation method.
- Structurally sound. Fix or replace any damaged areas. Nail or screw down any areas that are loose or where you feel movement.

Additionally, always make sure to follow all the manufacturer's specific instructions for preparing your subfloor. Improperly prepared subfloors may void the flooring manufacturer's warranty.

Leveling Your Subfloor

A level, or flat, subfloor is one that is free from any peaks and valleys, no matter how small. These imperfections can be caused by a number of things from the concrete slab not being perfectly flat or drywall splatters on the floor that were not scraped up. Whatever the cause, it's your job to fix or remove the imperfections so the floor is completely flat. Unlevel subfloors can cause your new laminate floor to squeak or have soft, squishy spots.

Before you begin finding your imperfections, make sure the floor is scraped and swept clean of all drywall mud, paint splatters and any other debris.

Finding the Imperfections

Begin by finding the imperfections in your subfloor. Many manufacturers recommend that your subfloor not have a variance of more than 3/16" over a 10' section of subfloor. An easy way to find imperfections in your subfloor for both concrete and wood subfloors is using an 8-10' piece of straight lumber.

Once you find your lumber, start at one end of the room and lay the straightest side of the lumber down on the subfloor. From the ground look to see if there are gaps between the subfloor and the lumber and mark with a pencil.

Next touch each end of the lumber. Does it rock or tip to one side? Can you feel the piece of wood move if you press one side to the floor? If there is any movement, find the high spot on the subfloor and mark it with a pencil. Make your way systematically across the room with the lumber, observing and noting the imperfections in the subfloor.

Leveling Low Spots in Concrete Subfloors

If you found low spots or dips in your concrete subfloor, fix them with a self-leveling compound, or floor patch. Self-leveling compounds are like quick-set concrete. DO NOT use regular cement products as they do not set and cure fast enough. Only use self-leveling compounds that indicate they have quick drying times and are made specifically for leveling subfloors below laminate flooring. These can be purchased at many flooring or home improvement stores.

⚠ IMPORTANT: When using self-leveling compound, you must wait an additional 24-48 hours before installing your floor so you can perform the proper moisture tests (if required) on the newly leveled areas.

1. Prepare the self-leveling compound in a bucket following the manufacturer's instructions. Mix outside or in an area where it will not matter if the compound splashes out of the bucket. Always follow the manufacturer's instructions when mixing. Some recommend adding the water after the compound is added while others recommend adding water before.

✓ **TIP:** Because these products set so quickly, do not prepare the compound until you are ready to begin using the product on your floor. Mix only small batches of compound at a time so it does not dry in the bucket or on tools before it is all used up.

2. Mix the compound using a paddle-type drill attachment (which can be purchased at most home improvement stores). Mix until the compound is similar in consistency to a milkshake.
3. Now you can begin leveling. Place your lumber at the edge of the place you will be leveling. Pour some of the leveling compound on the area. Use a trowel to help fill in all the low areas. Quickly after you've spread the compound, move the lumber across the area you just leveled to ensure it is flat. If it is not, add more compound. If the area is too high, scrape away compound.

✓ **TIP:** This part of the process works best with two people – one person working with the compound and one person working with the lumber.

4. Work quickly across the floor to fill all the low spots. If you run out of compound, clean up the bucket and tools and mix another small batch.
5. Once all the low spots are filled, re-assess the areas you leveled with your lumber to ensure they are flat. If you still find low areas, mix another batch of compound and add more to the top of the dried compound.
6. After the compound is completely dry and set, perform a Polyethylene, Calcium Chloride, and/or pH Alkalinity test on each newly leveled area. Follow all the same guidelines for this moisture test as you did when moisture testing the whole slab.

Leveling High Spots in Concrete Subfloors

Use a grinder or sander to level high spots in concrete subfloors. If you don't own one, these can be rented from many equipment rental stores. When sanding, always wear a respirator as concrete produces good deal of dust. You can also wet the slab before you begin to help keep dust to a minimum. If you are working on an addition to a home, make sure everything is covered with plastic and taped completely. Cover and tape all AC intake vents so that concrete particles are not distributed throughout your home via the ventilation system.

✓ **TIP:** Concrete dust will get everywhere (including closed cupboards or drawers) because the particles are so fine. Be sure to tape everything up tightly!
To help ventilate the dust, consider placing a box fan in the window to help pull air from inside the home outward.

Leveling a Wood Subfloor

Before you begin leveling your wood subfloor, walk the floor and use coarse-headed screws to secure loose or squeaky areas. You may also want to screw down high-traffic areas to help reinforce the floor and prevent squeaking in the years to come. Once everything is secured, you can begin leveling the subfloor.

Leveling a wood subfloor can be more challenging than concrete, especially if the wood subfloor is not flat because of high spots over joists (also called crowned joists). If your crowned joist is relatively low, try sanding down the area to level it with the rest of the floor. If the crowned joist is high and there are exceptionally low areas between joists, you have a couple options.

Some professionals recommend using roofing shingles or foam padding to help taper the areas between crowned joists. Layer the shingles or foam on top of each other in the low areas tapering up to the crowned joist until the area is flat. Next, nail the shingles/foam to the subfloor to hold them in place. Use caution when choosing foam as it can make the floor spongy in areas that are layered.



NOTE: Make sure to check with your flooring manufacturer before using this method to ensure it will not void the floor's warranty.

Other professionals recommend using a self-leveling compound to fix uneven wood subfloors. All the preparation, application and moisture testing steps are the same as for concrete subfloors.

If your floor has excess sagging, check below the subfloor. You may be able to correct some sagging by installing wood supports between the joists below the subfloor. You could then correct any further sagging with either shingles or self-leveling compound.

Undercutting Door Casings

Undercutting door casings is a relatively easy and elegant way to install your laminate flooring around doors just like the pros do. Always cut your door casings before you begin your installation. This ensures you do not have wood chips or saw dust in your installation area.

To undercut door casings, you'll need a scrap piece of laminate flooring, a pencil and your saw (a handsaw or special saw for cutting door jambs). Always use the finest blade possible so that the saw does not split or mar the wood. NEVER use a saws-all or skill saw as this type of equipment may be difficult to control for these types of cuts.

1. Use the scrap piece of laminate to bring your saw up to the right height of the door casing. Make sure to account for your underlayment in the total height. Use a pencil to mark or draw a line at the top of the laminate/underlayment. This is how much you'll be cutting off the bottom of the door casing so that the flooring will fit underneath it.
2. Use the saw to cut the door casing along the line you drew. Keep your scrap piece of laminate in place to help ensure you make a straight cut.

Now when you reach a door casing, you can cut and place a laminate plank to fit under the casing and flush with the wall.

✓ **TIP:** Be sure to leave some expansion/contraction room between the cut plank and the wall under the door casing.

Removing Molding and Doors

Remove all molding and baseboards in your installation area with a crow or pull bar. If you want to reuse your molding, take care when removing. Small nicks can be filled, sanded and re-painted; however, pieces that are broken or have major damage may need to be replaced. It's also a good idea to remove all doors and set aside.

UNDERSTANDING THE INSTALLATION BASICS

Flooring is one of the most used and viewed surfaces in your home. Especially if this is your first laminate flooring installation, you should understand some of the fundamentals about installing and enjoying your new laminate floor:

- **Allow for Expansion and Contraction**
- **Always Use an Underlayment**
- **Your Floor's Foundation: The First and Last Rows**
- **Stagger Joints for a Natural Look**
- **Inspect All Planks before Installation**
- **More Tips for a Successful Installation**

Allow for Expansion and Contraction

All wood-based floors experience some contraction and expansion because of the moisture content of the flooring, environmental relative humidity and seasonal temperature and moisture fluctuations. These changes will happen even if you maintain consistent temperature levels with heating and air conditioning.

The protective coatings on laminate floors help slow this process somewhat, but they cannot eliminate it altogether. When installing laminate floors, you must take this expansion and contraction into account and leave plenty of room around the perimeter of your floor. Once you're installation is complete, you will cover this expansion/contraction perimeter with moldings such as baseboards, base-shoe or quarter-round.

Most homeowners can leave a standard ¼ inch around the perimeter of the room to allow for expansion and contraction. If you are flooring a large room, consider calculating the expansion rate more precisely. Talk to a flooring professional for more information on how you can specifically calculate your floor's expansion rate for your area and climate.

If you do not leave an expansion perimeter, your laminate floor will still go through the natural process of expanding and contracting. Instead of expanding into the perimeter, the floor may begin to cup or buckle which will damage the laminate and create an uneven flooring surface.

✓ **TIP:** Play it safe! Always leave an adequate expansion and contraction perimeter.

Always Use an Underlayment

Underlayments are important for any laminate floor. Underlayments help to protect the bottom of the flooring from moisture as well as provide sound barriers and padding which improves the durability of the flooring. Some laminate flooring comes with an underlayment (usually foam) already attached to the flooring. If you have this type of laminate you will not need an additional underlayment.

If your laminate does not have an attached underlayment, there are a number of products and price ranges on the market today. Always be sure to follow your flooring manufacturer's recommendations when choosing and installing an underlayment.

 **NOTE:** The “softness” of an underlayment will not be felt the same for laminate floors as it is for carpet. In most cases, doubling up foam for extra “softness or cushioning” is NOT recommended. The extra cushioning can create too much movement between joints which can cause board separation, floor squeaking or damage to the flooring. Instead, opt for a higher quality underlayment.

Cork

Cork is one of the most popular underlayments when it comes to sound control, cushioning and moisture control. Cork underlayments may be required in some buildings (such as high-rise residences) to help control sound between levels. Other homeowners choose cork because it is an excellent shock absorber and sound barrier as well as an all-natural, renewable material. Cork also controls moisture well as it is porous and “breathes.”

Cork underlayments can be used above wood and concrete subfloors. Most manufacturers recommend that a sealer, plastic sheeting or other moisture-resistant underlayment be used in conjunction with cork for added moisture protection. Cork underlayments come in a variety of thicknesses with the typical being ¼” and ½”. While cork generally costs more than other underlayments, it is a good investment and can provide your home with a more solid-hardwood flooring feel.

Standard Foam

Standard Foam underlayments provide a minimal sound barrier and shock absorption layer between the subfloor and your laminate floor. Standard foam does not provide any moisture protection unless the foam has plastic adhered to one side of it. Most flooring professionals consider foam to be an entry-level underlayment; however, it is the choice for many homeowners because it is considerably cheaper than cork.

Foam underlayments can be used over both wood and concrete subfloors (although, concrete subfloors may require an additional moisture barrier). Foam underlayments come in a variety of types, densities and brands. However, the bottom line is that most foam products provide the same basic benefits. Always check with your flooring manufacturer before purchasing your foam underlayment. Some manufacturers require that certain brands of foam be used for warranty reasons.

Combination Foam/Film

Combination foam/film has all the same characteristics of standard foam with the added benefit of having a built in moisture barrier. Combination foam/film is used the same way as standard foam without the need to lay an additional moisture barrier (such as for concrete subfloors).

Upgraded Foam Underlayments

Upgraded foam underlayments are a good compromise between cork and standard foam or combination foam/film. Upgraded foam is made from high-density foam so it is thicker and provides a better sound barrier than standard foam; however, upgraded foam is still not as good as cork.

Upgraded foam can be used in the same installation areas as standard foam and combination foam. Some upgraded foam products come with a moisture barrier while others do not, so be sure to check with your retailer before you purchase the product.

Plastic Underlayment

Plastic underlayments are generally considered to be 6mm polyethylene/plastic sheeting. Many homeowners lay plastic sheeting between their subfloor and their underlayment (such as cork or foam) as an additional moisture barrier.



NOTE: Plastic does not provide any padding or sound barrier.

Kraft Paper or Roofing Felt

Most often used for roofing on houses, Kraft paper, or roofing felt, can be used to prevent moisture from seeping up from the subfloor. However, Kraft paper should NEVER be used as the only moisture barrier. You should always install an additional moisture barrier to protect your laminate floor. Most of the time professional installers use this type of underlayment as anti-slip paper.



NOTE: Roofing felt does not provide any padding or sound barrier.

Your Floor's Foundation: The First and Last Rows

Before you install your first laminate plank consider the first and last row of the floor. The first row is important as it provides the foundation of the floor. If there are problems with the first starter row (such as it not be straight or not having the proper spacing from the wall), the rest of the floor will have the same problems.

The starter row should be parallel to the longest side of the room and should align with the incoming light sources. Many professional installers work from the left side of a room to the right side of the room, but you should always do what's most comfortable for you. When complete, your laminate floor should be square with the room. This is important not just for aesthetic reasons, but also for the long-term stability of the floor.

The last row is important because it completes the floor and holds everything against the starter row. Sometimes, the laminate plank for the last row must be cut widthwise to fit in the remaining space. Depending on the layout of the floor, a skinny plank on one side of the room may look odd if the rest of the room has standard size laminate planks.

First and Last Row Exceptions

Rooms come in a variety of sizes, shapes and degrees of straightness. If you find yourself working against a wall that is not perfectly square you can cut (or scribe fit) the laminate to match the contours of the wall. You can also use this method to work in odd shaped areas of the room. Keep in mind that the goal is to lay a straight, square floor even if the walls are not straight and square.

✓ **TIP:** Inner walls tend to be straighter than outside walls.

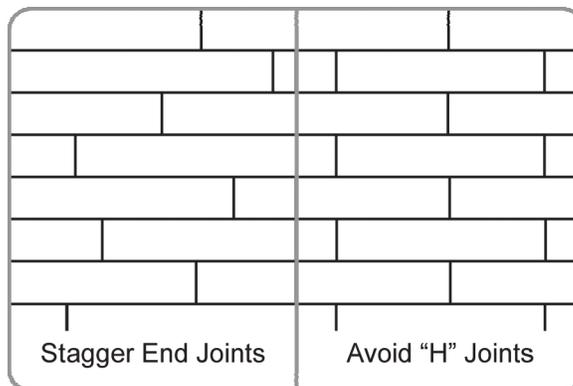
The first and last row can also be tricky if your type of flooring has a minimum width requirement. Some flooring cannot be cut to the small widths needed to accommodate equal first and last rows. In these cases, use your best judgment for your installation area. Or talk to a flooring professional. They may have simple, yet elegant solutions for your specific situation.

Stagger Joints for a Natural Look

Staggering joints provides a more natural, stable and professional looking laminate floor. Try to stagger end-joints in adjacent rows so they are at least three times the width of the plank. Avoid H-joints unless absolutely necessary. Many glueless flooring systems will have boards of different lengths to help you achieve staggered joints; however, you may still have to cut boards to achieve this staggered look.

When installing your laminate flooring, make sure that the length of your flooring plank is no shorter than 2 to 3 times the width of the plank. Using this width/length ratio helps ensure that you do not end up using very short flooring planks (which would cause your floor to look brick-like).

Additionally, when you get to the end of a row, use the remainder of the plank to start the next row if it meets the manufacturer's minimum length requirements (usually between 8-10 inches long). This also helps ensure your joints are staggered from row to row.



✓ **TIP:** Some professional's layout the whole floor before beginning the installation. This helps them see the floor as it will look before it's installed so they can make any adjustments to the joints and layout. If using this method, try not to walk or place tools on the laminate to prevent breakage and surface damage.

Inspect All Planks before Installation

Manufacturers have tried to make laminate flooring vary with regard to color and patterns so that your laminate floor looks more like traditional hardwood or tile when installed. Because of these variations, each box of flooring you open may be slightly different than another box. During your installation, it's important that you use planks from at least three different boxes at a time. (If you're installing laminate tiles, vary tiles from five boxes). Some installers recommend opening all packages and mixing the laminate up before hand so that planks from each box are used throughout the whole floor.



NOTE: If you use this method, take care not to scratch any boards as you mix them up. Always follow your flooring manufacturer's recommendations for storing your flooring. Never store flooring by standing on end or by resting on either side.

Before you install each board, do a thorough visual inspection of each piece of laminate. Do not install any board that has an obvious defect.

More Tips for a Successful Installation

Keep these tips in mind as you install your new laminate:

- **Cutting Boards:** If you need to cut laminate boards, always saw with the teeth of the saw cutting down into the face or the top of the board. Sawing this way helps to protect the surface of the flooring board. Additionally, use a carbide tipped blade to ensure you make smooth cuts. If you use a miter saw, make sure the saw is up to speed before cutting your laminate to ensure clean cuts.

✓ **TIP:** Use blue painters tape to tape the area to be cut. This type of tape allows you to mark where you need to cut without writing directly on the flooring. Painters masking tape also helps protect the finish from splintering or fracturing during the cutting process. If you don't have blue painters tape, you can simply mark your cutting area with a pencil directly on the laminate surface. The pencil mark should wipe right off. Be sure to test this on a single piece of laminate before continuing.

- **Tapping Boards:** Always use a tapping block to move planks into position. Do not hit laminate flooring directly as it may fracture or damage the flooring edge. Good tapping blocks can be a piece of trim or an extra, clean piece of laminate. Always follow your manufacturer's guidelines when tapping. Some laminate should not be tapped into place as it will damage the locking mechanism.

- **Ending Rows:** You may have to cut boards to fit at the end of each row. Use the remainder of that board to begin the next row as long as the piece of flooring meets the minimum required length and allows for proper staggering.
- **Keeping the Installation Area Clean:** Use a vacuum cleaner or broom to keep your installation area clean. Saw dust and wood chips can damage your laminate floor's finish or create an uneven subfloor.
- **Storing Tools during Installation:** Do not store your tools directly on your newly installed laminate floor as they may scratch or damage the surface. Instead, place your tools on a piece of plywood, cardboard or clean cotton drop cloth. Never slide your tools across your bare laminate floor.
- **Work from Left to Right:** Most installers and manufacturer's recommend working from left to right. However, some installations flow better working from right to left or from your finished rows toward the subfloor. Always refer to your flooring manufacturer's recommendations when deciding how to install your laminate floor.
- **Use Waste Planks:** You can use discolored or slightly damaged planks in areas such as closets or pantries where the color variations might not be noticed as much.

INSTALLING GLUELESS LAMINATE

Today, the majority of laminate floor installations use glueless systems. Glueless laminate flooring is designed with special click and lock systems. Pieces of flooring fit tightly together then click and lock into place (much like Lego blocks). Glueless floating laminate floors are the most popular because they are relatively easy to install and require no special tools or heavy duty adhesives. Glueless laminate floors come in both planks and squares depending on the “look” you want.

△ IMPORTANT: There are a variety of styles of glueless flooring that vary by manufacturer. ALWAYS follow the instructions provided by your flooring manufacturer when installing a glueless laminate floor. Only use these instructions as a reference if your manufacturer did not provide their own installation instructions or if your manufacturer's instructions are vague.

Tools and Materials

You will need the following tools and materials:

- 4' or 6' Level
- Broom
- Carpenter's square
- Chalk line
- Crow, pull and/or power bar
- Electric and/or hand saw with a carbide tipped blade
- Hammer
- Safety goggles and mask
- Soft rubber mallet
- Spacers (refer to your manufacturer's guidelines for the proper width for your flooring)
- Tape measure
- Tapping block or clean piece of scrap wood
- Utility knife
- Any other tools recommended by the flooring manufacturer

Installing the Underlayment for Glueless Installations

Installing the underlayment is the first step in your flooring process.

✓ **TIP:** If your laminate has the underlayment attached, you can skip this step. Keep in mind, however, that pre-attached underlayments do not serve as an adequate moisture barrier.

1. Lay out the underlayment above the subfloor.
2. Tape at all seams to hold sheets together. Do not overlap the underlayment as you will create high spots. If you're using plastic sheeting as an additional moisture barrier, you should overlap and tape those seams.
3. Trim all edges at the wall level using a utility knife.

Installing the First Row of Glueless Laminate

Now that you've got your underlayment in place, you can begin installing your first row of glueless laminate flooring.

1. Starting on the longest wall, measure out from the wall in at least two places to allow for your expansion/contraction space (usually $\frac{1}{4}$ inch). Mark each spot. Snap a chalk line across the marks to form a straight line.

 **NOTE:** Many professionals recommend starting your first row on the most visible wall. This way if the room is not perfectly square the cut edge of the flooring will be hidden by furniture, appliances or cabinets.

2. Lay out the first row of flooring end to end with the groove towards the wall but DO NOT click together yet. Remember that not all walls are straight and square. Use a chalk line, level and blocks or wedges to help you get this first row completely straight. Cut laminate boards where needed to ensure the floor is straight, even if the walls are not.

✓ **TIP:** In some cases, you may need to “scribe fit” the first row of laminate to fit imperfections along the starting wall. To do this, place a laminate spacer or a small block of wood between a pencil and the wall above your laminate. Slide the spacer along keeping the pencil tight to the spacer and the spacer tight to the wall. The pencil will leave a line on the planks matching the contours of the wall. Use a circular saw or jigsaw to cut along this line so that your first row matches the wall contours perfectly. Remember to factor in your expansion spacing, and be careful not to cut too much off of the first row as it may upset your predetermined layout.

📄 **NOTE:** Some manufacturers recommend that you cut off the tongue on the side that is facing the wall. Others recommend you face the groove to the wall. Always follow your specific manufacturer’s recommendations when installing the first row.

If your first and last row planks are less than a full plank width, cut all your first row planks to the correct width before laying out to evaluate the fit. (For more information, see [Your Floor’s Foundation: The First and Last Rows](#) on page 24).

3. Once you are satisfied with the fit of the first row, begin clicking and locking the laminate into place. There should be no space between boards that are locked together.
4. Continue working your way across the floor installing the first row and placing spacers at the tops of every couple boards along walls. Take time to measure with a tape measure and/or level every foot or so to ensure your expansion/contraction spacing is adequate and equal throughout the whole length of the first row.

Remember: Take more time with this first row as it is the foundation for the rest of the floor.

5. When you get to the last plank in the first row, measure the size plank you need factoring in adequate expansion/contraction space. Click and lock the last piece in starter row. Place a spacer between the wall and the last plank that was installed.
If the remainder of the plank you cut is 8" or longer, use it to start the next row.

✓ **TIP:** Professionals recommend that any cut plank you use be 2 to 3 times the width of the flooring.

6. Use a tape measure and level to re-measure your starter row and expansion spacing. If you're satisfied with the fit, you're ready to continue installing your floor.
If you're not satisfied with the fit, remove and re-install the planks where necessary.

Installing the Rest of the Glueless Laminate Floor

Once your starter row is done, the rest of your laminate floor will begin taking shape.

1. Use a short or partial laminate plank to begin your second row. (Always stagger joints 6" or more for maximum stability and a more professional look.)

Gently tap the boards together using a tapping block to ensure a tight fit, if recommended. Click and lock the plank to the first row.

2. Continue working across the floor from left to right fitting and locking the laminate together along each row.

Remember to:

- Use laminate from multiple packages to vary colors throughout your floor.
- Install spacers along all walls at the recommended intervals.
- Stagger joints where needed so the floor has a random pattern.
- Stop and measure to ensure the floor is going down straight and level.
- Do not tap laminate into place unless recommended by the manufacturer. Some products require that boards are inserted at an angle then locked together. Tapping can damage the locking mechanism.

Installing the Last Row of Glueless Laminate

Your laminate floor is almost complete and ready for the last row.

1. Measure in at least two places the space you have left between the wall and the edge of the new floor. Mark each spot. Subtract your expansion/contraction space. This measurement should be close to the width of your first row (if you cut the first row to be approximately the same width as your last row).

Snap a chalk line across the marks to form a straight line.

2. Roughly layout the laminate to identify how many you will need to complete the last row. Cut all boards to the correct width, if needed.
3. Lay out the last row of flooring end to end with the tongue toward the wall but DO NOT lock together yet. Remember that not all walls are straight and square. Like with your first row, cut planks where needed to ensure the floor is straight even if the walls are not.
4. Once you are satisfied with the fit of the last row, begin clicking and locking the laminate into place. Place a spacer between the wall and the last row of flooring.
5. Continue working your way across the floor installing the last row and placing spacers between the wall and the flooring. Take time to measure with a tape measure and/or level every foot or so to ensure your expansion/contraction spacing is adequate and equal throughout the whole length of the last row.

Like with the first row, take more time with the last row as it holds the rest of the floor against the first row.

6. Once all planks are installed, use a tape measure and level to re-measure your last row and expansion spacing. If you're satisfied with the fit, your floor is complete!

If you're not satisfied with the fit, remove and re-install the planks where necessary.

Curing Times for Glueless Laminate Floors

A glueless laminate installation does not need time to set. Once the last row is installed, you can begin using your new laminate floor.

INSTALLING GLUED LAMINATE

These days, glued laminate makes up a very small percentage of laminate installations because glueless systems are so much easier to install. Glued laminate flooring comes in two different types:

- Pre-glued laminate floors are manufactured with the adhesive already applied to the tongue and groove. During installation, you simply wet the glue to activate the adhesive elements. These floors fit together much like hardwood or bamboo floors but with less mess since the adhesive is already applied to the flooring.
- The glued laminate is the original (and messiest) way to install a laminate floor. With this method, you'll apply a quality flooring adhesive to the tongue or groove of each plank then fit tightly together.

Both types of glued laminate are installed the same way. The only difference is whether you wet the glue to activate it on pre-glued flooring or apply the adhesive yourself.

△ IMPORTANT: There are a variety of styles of glued flooring that vary by manufacturer. ALWAYS follow the instructions provided by your flooring manufacturer when installing a glued laminate floor. Only use these instructions as a reference if your manufacturer did not provide their own installation instructions or if your manufacturer's instructions are vague.

Tools and Materials

You will need the following tools and materials:

- 4' or 6' level
- Adhesive remover (as recommended by your flooring manufacturer or a flooring professional)
- Broom
- Carpenter's square
- Chalk line
- Crow, pull and/or power bar
- Electric and/or hand saw with a carbide tipped blade
- Hammer
- Safety goggles and mask
- Soft rubber mallet
- Spacers (refer to your manufacturer's guidelines for the proper width for your flooring)
- Tape measure
- Tapping block or clean piece of scrap wood
- Tongue and groove flooring adhesive (as recommended by your flooring manufacturer or a flooring professional)
- Utility knife
- Utility towels (damp and dry)
- Any other tools recommended by the flooring manufacturer

Types of Adhesives for Glued Laminate

If your laminate is not pre-glued, you'll need to purchase a quality adhesive designed especially for laminate floors. When purchasing an adhesive, be sure to consider your flooring manufacturer's recommendations. In most cases, the adhesive will be a urethane-based product. **DO NOT use an adhesive that has water as an ingredient unless it is specifically recommended by the manufacturer.** Always choose an adhesive that is designed to be applied to the tongue and groove NOT one that needs to be troweled onto the subfloor.

Installing the Underlayment for Glued Laminate

Installing the underlayment is the first step in your laminate flooring process.

✓ **TIP:** If your laminate has the underlayment attached, you can skip this step. Keep in mind, however, that a pre-attached underlayment does not serve as an adequate moisture barrier.

1. Lay out the underlayment above the subfloor.
2. Tape at all seams to hold sheets together. Do not overlap the underlayment as you will create high spots. If you're using plastic sheeting as an additional moisture barrier, you should overlap and tape those seams.
3. Trim all edges at the walls using a utility knife.

Installing the First Row of Glued Laminate

Now that you've got your underlayment in place, you can begin installing your first row of laminate flooring. Many professionals install the first three to four rows of glued laminate then wait for these rows to set completely before installing the rest of the floor. This helps ensure that the first rows are stable enough to hold the rest of the floor in place.

1. Starting on the longest wall, measure out from the wall in at least two places to allow for your expansion/contraction space (usually $\frac{1}{4}$ inch). Mark each spot. Snap a chalk line across the marks to form a straight line.

 **NOTE:** Many professionals recommend starting your first row on the most visible wall. This way if the room is not perfectly square, the cut edge of the flooring can be hidden by furniture, appliances or cabinets.

2. Lay out the first row of flooring end to end with the groove toward the wall but DO NOT glue yet. Remember that not all walls are straight and square. Use a chalk line, level and blocks or wedges to help you get this first row completely straight. Cut planks where needed to ensure the floor is straight even if the walls are not.

✓ **TIP:** In some cases, you may need to “scribe fit” the first row of laminate to fit imperfections along the starting wall. To do this, place a laminate spacer or a small block of wood between a pencil and the wall above your laminate. Slide the spacer along keeping the pencil tight to the spacer and the spacer tight to the wall. The pencil will leave a line on the planks matching the contours of the wall. Use a circular saw or jigsaw to cut along this line so that your first row matches the wall contours perfectly. Remember to factor in your expansion spacing, and be careful not to cut too much off of the first row as it may upset your predetermined layout.

📄 **NOTE:** Some manufacturers recommend that you cut off the tongue on the side that is facing the wall. Others recommend you face the groove toward the wall. Always follow your specific manufacture’s recommendations when installing the first row.

If your first and last row of laminate is less than a full plank width, cut all your first row planks to the correct width before laying out to evaluate the fit. (For more information, see **Your Floor’s Foundation: The First and Last Rows** on page 24).

3. Once you are satisfied with the fit of the first row, take apart and stack in the order they will be re-installed (the last board to be installed should be on the bottom of the stack).
4. Re-install the first row, applying adhesive along the entire top of the tongue of the installed plank and on the bottom of the groove on both the short and long side of the plank to be installed or as recommended by your laminate manufacturer. For pre-glued laminate, use a rag to wet the glue surface to activate the adhesive as directed by your manufacturer.

Squeeze laminate boards together so they fit tightly. Use a tapping block to get a tight fit, if needed. Immediately wipe away any adhesive that seeps from the joint. There should be no space between installed boards.

⚠ **CAUTION:** Too much adhesive will interfere with the way the boards are manufactured, keeping them from fitting tightly together.

5. Continue working your way across the floor installing the first row and placing spacers along walls. Take time to measure with a tape measure and/or level every foot or so to ensure your expansion/contraction spacing is adequate and equal throughout the whole length of the first row.

Remember: Take more time with this first row as it is the foundation for the rest of the floor.

6. When you get to the last plank in the first row, measure the size plank you need, factoring in adequate expansion/contraction space. Glue the last piece in the starter row. If necessary, use a pinch bar to install the last plank of the first row. Place a spacer between the wall and the last plank that was installed.

If the remainder of the laminate you cut is 8" or longer, use it to start the next row.

✓ **TIP:** Professionals recommend that any cut plank you use be 2 to 3 times the width of the flooring.

7. Use a tape measure and level to re-measure your starter row and expansion spacing. If you're satisfied with the fit, install three to four more rows then let these first few rows set before continuing with the rest of the floor.

Installing the Rest of the Glued Laminate Floor

Once your starter row is done, the rest of your laminate floor will begin taking shape.

1. Use a short or partial laminate plank to begin the top of your next row. (Always stagger joints 6" or more for maximum stability and a more professional look, if necessary.)

Adhere the long and short edges of the planks together with the adhesive. Gently tap the boards together using a tapping block to ensure a tight fit.

2. Continue working across the floor from left to right securing the laminate together with the adhesive along each row.

Remember to:

- Use laminate from multiple packages to vary colors throughout your floor.
- Install spacers along all walls at the recommended intervals.
- Stagger joints so the floor has a random pattern.
- Stop and measure to ensure the floor is going down straight and level.
- Gently tap board together using a tapping block. Do not hammer the planks directly. Always tap the tongue and not the groove. Do not hammer the face of a plank (even with a rubber mallet) as it may damage the finish.
- Immediately wipe away any excessive adhesive.
- If boards begin to pop up during installation, weight those areas with flat heavy objects to hold the floor in place. Always place weighted objects on a piece of plastic or drop cloth so they do not scratch the finish of your new laminate floor.

Installing the Last Row of Glued Laminate

Your laminate floor is almost complete and ready for the last row.

1. Measure in at least two places the space you have left between the wall and the edge of the new floor. Mark each spot. Subtract your expansion/contraction space. This measurement should be close to the width of your first row (if you cut the first row to be approximately the same width as your last row).

Snap a chalk line across the marks to form a straight line.

2. Roughly layout the laminate to identify how many you will need to complete the last row. Cut all boards to the correct width.
3. Lay out the last row of flooring end to end with the tongue toward the wall but DO NOT glue yet. Remember that not all walls are straight and square. Like with your first row, cut planks where needed to ensure the floor is straight, even if the walls are not.
4. Once you are satisfied with the fit of the last row, take apart and stack in the order they will be re-installed (the last board to be installed should be on the bottom of the stack).
5. Re-install the last row, applying adhesive where necessary. Use a pull bar to squeeze planks together so they fit tightly. Immediately wipe away any adhesive that seeps from the joint. Place spacer between the wall and the last row of laminate flooring.
6. Continue working your way across the floor installing the last row and placing spacers between the wall and the flooring. Take time to measure using a tape measure and/or level every foot or so to ensure your expansion/contraction spacing is adequate and equal throughout the whole length of the last row.

Like with the first row, take more time with the last row as it holds the rest of the floor against the first row.

7. Once all laminate planks are installed, use a tape measure and level to re-measure your last row and expansion spacing. If you're satisfied with the fit, your floor is almost complete!

If you're not satisfied with the fit, remove and re-install the planks where necessary.

Curing Times for Glued Laminate Floors

Most adhesives need about 24 hours to fully cure. During this time, no one should walk, move or place anything upon the newly installed laminate floor. All spacers must be left in place during the curing time. Removing spacers could cause the floor to expand and set improperly.

SPECIAL CIRCUMSTANCE INSTALLATION

In almost every flooring installation, you are going to run into areas that require special attention. In this section we'll discuss:

- **Types of Trim, Molding and Transition Pieces**
- **Molding Installation Methods**
- **Using T-Molding for Interior Doorways**
- **Using End Molding for Exterior Doorways**
- **Working around Vents**
- **Installing Laminate Flooring on Stairs**
- **Working around Fireplaces and Brickwork**
- **Using End Molding or Square Nose for Carpet Transitions**
- **Using Reducer Strip for Vinyl Transitions**

Types of Trim, Molding and Transition Pieces

There are a variety of trim, molding and transition pieces to help you when working around doorways, stairs or between different types of flooring. These items come in a variety of colors and styles to match your laminate floor. In general, laminate trim is slightly larger than hardwood or bamboo trim.

- **T-Molding:** This molding is used between laminate floors and exterior doorway thresholds. It can also be used to transition a laminate floor to another similar height flooring surface.
- **Reducer Strip:** This transition piece is used to join laminate floors to flooring that is a different height such as vinyl, tile or carpeting.
- **Step Down or Overlap Stair Nose:** This transition piece is used on laminate stairs to provide the proper overhang from one level to the next.
- **End (or Threshold) Molding or Square Nose (Universal Edge):** This type of floor trim is used to separate and transition between carpet, fireplaces, brickwork, sliding doors or any other outside door threshold.
- **Floor Vents:** Vent covers designed to coordinate with your laminate.
- **Wall Base:** This molding is placed along the bottom of the wall above the flooring to hide the expansion/contraction space as well as to give the room a finished look. Wall base can also be used under cabinets.

- **Quarter Round:** This molding is placed along wall base above the flooring to help hide the expansion/contraction space as well as to give the room a finished look. It can also be used under cabinets if wall base is too large or at the bottom of stairs for aesthetics.

Like with your flooring, molding comes in a variety of natural color variations. When choosing your molding, be sure to match the color and grain to your laminate floor. Prior to installation, choose the pieces of molding you want to install and compare them to the coloring in the floor. Install moldings that are complimentary to the floors color variations in each installation area.

Molding Installation Methods

Moldings and trim can be installed two different ways:

- **Using trim tracks.** With this method you nail or screw a track to the subfloor then slide and lock the molding into place. This is the most common way molding is installed for floating laminate installations.

 **NOTE:** This manual provides instructions for installing transitions with trim tracks.

- **Using adhesive.** With this method, you glue the molding to the subfloor (or in some cases to the flooring) using a non-water based adhesive. While this method can be used, most professional recommend using trim tracks for laminate installations.

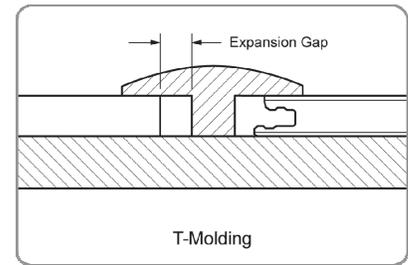
Many professionals recommend using a miter saw with a carbon tipped blade to cut the molding to ensure you get clean, smooth cuts. When cutting pre-finished molding, cut into the pre-finished side first to avoid chipping the finish.

During your installation always handle your molding carefully (especially pre-finished moldings) to ensure you do not scratch, dent or chip the finish. If you choose to nail molding to the walls or subfloor, pre-drill holes to help ensure the molding does not split or crack. Additionally, do not nail too close to the end of the molding to avoid splitting.

When installing trim around your laminate floor, do not nail through the laminate as the floor must remain floating. When placing trim tracks or nails around the flooring, always leave an expansion perimeter between the track and the edge of the flooring. If you nail through or too closely to the laminate, the floor will not be able to expand and contract correctly and may buckle or cup over time.

Using T-Molding for Interior Doorways

Doorways can be tricky during installation because they are narrow. It is sometimes hard to continue laying even, consistent boards into another room. You can use T-molding to join laminate flooring in connected rooms, especially if the doorway is less than 6" wide. For large floating floor installations (40ft or more), T-molding is also used to provide expansion joints. T-molding can also be used to transition between your laminate floor and another floor of similar height.



When installing T-molding, always allow adequate expansion space between the molding and the flooring. There should be at least 1 1/8" gap between the two flooring surfaces.

1. Measure and cut your T-molding to fit snugly in the door frame.
2. Position the T-molding approximately where you want to install it.

Lift the molding straight up and use a pencil to mark the subfloor where the track should be placed.

✓ **TIP:** The grooves on the back of the molding indicate where the track will be inserted into the channel.

3. For wood subfloors, screw the track to the floor using a 4 x 1/2" screws.
 1. For concrete subfloors, attach the track to the floor using concrete nails or cement adhesive.
4. Working from right to left, position the molding to fit into the track. Gently push the molding onto it until the entire thing is installed.

Using End Molding for Exterior Doorways

End molding (also called threshold molding) is used along exterior doorways or to transition to a flooring surface that is similar in height to the laminate floor (such as tile or high pile carpet). End molding can also be used around fixed objects like fireplaces and brickwork.

1. Measure and cut your end molding to fit snugly in the door frame.
2. Position the end molding approximately where you want to install it.

Lift the molding straight up and use a pencil to mark the subfloor where the track should be placed.

✓ **TIP:** The grooves on the back of the molding indicate where the track will be inserted into the channel.

3. For wood subfloors, screw the track to the floor using a 4 x 1/2" screws.
 2. For concrete subfloors, attach the track to the floor with concrete nails or cement adhesive.
4. Working from right to left, position the molding to fit into the track. Gently push the molding onto track until the entire thing is installed. The molding should butt up against the exterior doorway and overlap the laminate floor by 1/2" to 3/4".

⚠ **IMPORTANT:** Do not attach the molding directly to the laminate floor as the floor needs room to expand and contract below the molding.

Working around Vents

Working around vents, piping and other fixed objects is a necessary part of installing any laminate floor. Since each object is unique, measure and cut carefully. Always leave a 1/4" expansion/contraction gap between the fixed object and the flooring. These gaps will be covered by vent covers, pipe rings or molding. Always ensure the lip of the vent is wide enough to adequately cover the expansion gap.

Installing Laminate Flooring on Stairs

Completing stairs with laminate flooring and overlap stair nosing gives your stairs the same look and feel as your new laminate floor. Generally, laminate is only installed on stairs that are completely enclosed (called boxed stairs) so that the unfinished edges of the laminate are hidden. For help estimating how much flooring you'll need for your stairs installation, use the Advanced Estimator tool on FindAnyFloor.com.

- ✓ **TIP:** If you want to install laminate on an open stair case, talk with a flooring professional. They may be able to recommend an installation method and different types of moldings that can hide the unfinished edges of the flooring.

If you are refinishing the wall stringers, do all sanding, painting and installing BEFORE you begin installing your laminate flooring. Additionally, after completing the stairs, you may need to caulk and paint around the edges of the molding to hide any defects.

Glue vs. Nails for Stair Installations

All laminate and stair nose will be glued directly to the subfloor. Laminate should never be floated on stairs for safety reasons. When gluing, make sure the adhesive covers the entire plank, right up to the edges. Apply enough adhesive so that it has good transfer contact with the stairs when installed, but not so much adhesive that it will ooze out around the laminate.

- ✓ **TIP:** To make sure you're using enough adhesive, apply adhesive to the laminate then install on the stairs. Immediately remove the laminate plank. (Use a pry bar if necessary as some adhesives have a strong initial bond.) If the glue is evenly distributed on both the stairs and the plank, you're using the proper amount of adhesive. Reinstall the laminate plank and keep working your way up the stairs.

When installing stairs, you should begin from the bottom and work your way up. Because you're gluing the laminate to the stairs, you may want to do just a few steps at a time to give the glue time to cure before you kneel or rest tools on the new flooring. Remember to protect your new flooring from nicks and scratches by using cardboard between any tools and the laminate flooring.

For added safety, some installers also top nail the laminate to the subfloor. Always follow your flooring manufacturer's recommendations when nailing through laminate to ensure this installation method does not void the warranty.

Top nailing does damage the face of your laminate plank; however, you can fill nail holes with wood filler. If you choose to top nail, use a pneumatic finish nailer and practice top nailing on a scrap piece of laminate to ensure the laminate does not split or chip beyond repair.

Laminate Stair Expansion Perimeters

Most often, you will not have to leave an expansion perimeter around the laminate if it is glued to the stairs as it should not expand or contract much. Some professionals install laminate flush in the stairwell so that they do not have to use molding which reduces the amount of walking space on each step. Always follow your flooring manufacturer's recommendations for expansion spacing when installing laminate on stairs.

Working with Stair Nosing

Stair nosing should always be installed so that it overlaps the riser. This method ensures that the stair nosing hides any cuts made to the flooring installed on the riser as well as provides the starting point when installing flooring on the stair tread. Stair nose can also be used to transition into other split level rooms (such as sunken living rooms) using the same installation method as stairs.

Many existing staircases have nosing already built into the stair subfloor. While some professionals suggest cutting the nosing off, this method can violate building codes in some areas. In most cases, it is easier to add plywood to each riser so that the existing nosing becomes flush with the riser. This not only avoids building code issues, it also enables you to remove the plywood down the road if you ever change the type of flooring on your stairs.

Installing Laminate on Stairs

Now that you've got the basics down, it's time to start working on your stairs.

1. If you are installing flooring over existing stairs, cut and add plywood to each riser so that the existing nosing becomes flush with the riser.
2. Beginning at the bottom of the stairs, measure then cut the laminate flooring for the first riser. If you need to cut a board widthwise to fit, install the cut board at the top of the riser so the cut is hidden by the stair nose.
3. Measure and cut a piece of overlap stair nosing for the first step but **DO NOT** glue yet. Place the nosing where it will be installed on the stairs (also called "dry-fitting"). You must install the tread before you glue the nosing so that the pieces fit flush.
4. Measure and cut the laminate flooring for the first stair tread. If you need to cut a board widthwise to fit, install the cut board at the back of the tread so that the cut is hidden by the stair riser.

5. Apply a thin, wavy line of adhesive on the back of each cut laminate board then flip over and install on the stair tread. Fit tightly with the “dry-fit” stair nose.
6. Now flip the stair nose over and apply a thin, wavy line of adhesive on the back. Re-install the stair nose so that it is flush and tight with the treads.

Use blue painters tape to tape the stair nose to the first row of laminate flooring on the stairs. This helps ensure the nosing and the flooring stay together while the adhesive cures.

7. Work your way up the stairs, repeating these procedures.

If you find you are spending a lot of time on each step, you may only want to install a few stairs at a time to allow the adhesive to set-up before continuing. Once the adhesive begins to tack, do not use the stairs until the adhesive has fully cured.

8. When you reach the top of the stairs, install transition pieces and moldings as desired.

Stair Nose and Floating Floor Installations

Both flush and overlap stair nose can be used to transition between sunken rooms when installing a floating floor; however, the installation methods are slightly different. Some flooring manufacturer’s recommend using shims to help stabilize the stair nose. Other manufacturers recommend using a thick bead of construction adhesive to bring the stair nose up to the correct height. Use the method that works best for your installation situation.

When using flush stair nose for floating installations, glue or nail shims to the subfloor below where the stair nose will be placed. They should extend just under the edge of the laminate floor and butt up against the underlayment. (This usually takes two or more shims.) When the stair nose is placed upon the shims, it should support the stair nose so that it does not bend or break during use. Once the shims are in place, glue the stair nose directly to the shims. Use blue painters tape to hold the stair nose in place.

When using overlap stair nose for floating installations, butt the shim up against the underlayment while keeping the shim approximately 1 $\frac{3}{4}$ ” from the edge of the riser. Glue or nail the shim in place. When installing the floating floor over the shim, ensure at least a $\frac{1}{4}$ ” of shim is showing from beneath the floating floor (on the riser side). Then glue or nail the overlap stair nose to the subfloor so that it covers the riser on one side and extends over the shim past the top of the floating floor on the other side. (The overlap stair nose should not rest on the shim.) When installing overlap stair nose over a floating floor, do not glue directly to the flooring as the laminate needs adequate expansion space.

Working around Fireplaces and Brickwork

There are two ways to install laminate flooring around fireplaces and brick work:

- Installing flush to the brickwork and adding end molding to hide expansion spaces.
- Undercutting the brickwork and using the brickwork to hide any expansion spaces.

Installing Flush to Brickwork

Installing laminate flooring flush to brickwork is much like installing the flooring up to walls or doorways.

1. Measure and cut your end molding to fit snugly along the fireplace or brickwork.
2. Position the end molding approximately where you want to install it.

Lift the molding straight up and use a pencil to mark the subfloor where the track should be placed.

✓ **TIP:** The grooves on the back of the molding indicate where the track will be inserted into the channel.

3. For wood subfloors, screw the track to the floor using a 4 x 1/2" screws.
 3. For concrete subfloors, attach the track to the floor using concrete nails or cement adhesive.
4. Working from right to left, position the molding to fit into the track and press in place. The molding should butt up against the brickwork and overlap the laminate floor by 1/2" to 3/4".

⚠ **IMPORTANT:** Do not attach the molding directly to the laminate floor as the floor needs room to expand and contract below the molding.

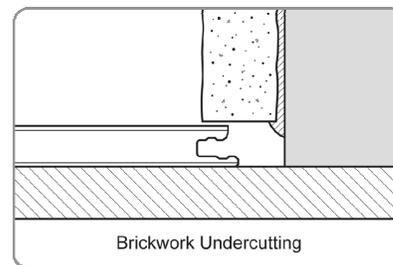
Undercutting Brickwork

Undercutting brickwork (much like undercutting door casings) provides for a more seamless looking floor.

1. Use the scrap piece of laminate flooring to bring your saw up to the right height beside the brickwork. Make sure to account for your underlayment in the total height.

Use a pencil to mark or draw a line at the top of the flooring/underlayment. This is how much you'll be cutting off the bottom of the brickwork so that the flooring will fit underneath it.

2. Determine how deep to make your cut. You should allow for up to a 1/2" of flooring under the brickwork plus your expansion space.
3. Use the saw to cut along the line you drew.



✓ **TIP:** Consider wearing a respirator while cutting so you do not inhale fine particles of dust.

Now when you reach the brickwork or fireplace, you can cut your laminate flooring to fit under the brickwork.

Using End Molding or Square Nose for Carpet Transitions

End molding or square nose (universal edge) can be used to transition between your laminate floor and carpet. Re-tack carpet at all points where it meets your new laminate flooring for a more professional look and to ensure the carpet does not come loose during use.

1. Measure and cut your end molding or square nose to fit snugly along the edge of the carpet (between the carpet and laminate floor).
2. Position the end molding/square nose approximately where you want to install it.

Lift the molding straight up and use a pencil to mark the subfloor where the track should be placed.

✓ **TIP:** The grooves on the back of the molding indicate where the track will be inserted into the channel.

3. For wood subfloors, screw the track to the floor using a 4 x 1/2" screws.
 4. For concrete subfloors, attach the track to the floor using concrete nails or cement adhesive.
4. Working from right to left, position the molding to fit into the track. Gently push the molding into the track until the entire thing is installed. The molding should butt up against the carpet and overlap the laminate floor by 1/2" to 3/4".

⚠ **IMPORTANT:** Do not attach the molding directly to the laminate floor as the floor needs room to expand and contract below the molding.

Using Reducer Strip for Vinyl Transitions

Reducer trim is most often used in floating installations to transition from a laminate floor to vinyl, concrete or any floor that is lower than your laminate floor.

1. Measure and cut your reducer strip to fit snugly along the edge of the vinyl (between the vinyl and laminate floor).
2. Position the reducer strip approximately where you want to install it.

Lift the reducer strip straight up and use a pencil to mark the subfloor where the track should be placed.

✓ **TIP:** The grooves on the back of the molding indicate where the track will be inserted into the channel.

3. For wood subfloors, screw the track to the floor using a 4 x 1/2" screws.
 5. For concrete subfloors, attach the track to the floor using concrete nails or cement adhesive.
4. Working from right to left, position the molding to fit into the track then gently push the molding in until it is installed. The molding should butt up against the vinyl and be flush with the laminate floor.

⚠ **IMPORTANT:** Do not attach the reducer directly to the laminate floor as the floor needs room to expand and contract under the molding.

5. Apply painters tape along the full length of the seam between the molding and the laminate floor to hold the molding in place until the adhesive sets completely.

FINISHING THE JOB

Congratulations! You've reached the home stretch of your laminate flooring installation. All that's left to do is:

- Installing Wall Base and Quarter Round Trim
- Correcting Defects
- Sealing Moisture Prone Areas

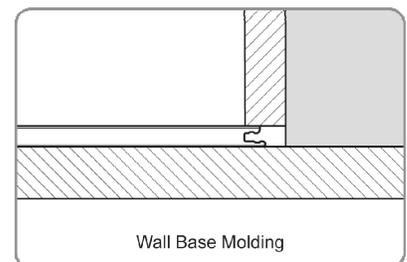
Installing Wall Base and Quarter Round Trim

Installing the wall base and quarter round trim hides the expansion and contraction spaces as well as puts the finishing touches on your room. Base shoe molding can be used instead of wall base in areas where wall base will not fit (such as under cabinets).

△ IMPORTANT: Do not nail or glue the wall base or trim directly to your floor. Trim should fit snugly, but not too tightly, as the floor must be allowed to move freely for expansion.

1. Measure and cut the wall base and quarter round trim for your installation area.
2. Remove the spacers along walls.
3. Using a construction adhesive, apply a thin, wavy line down the length of the wall base molding.
4. Gently press the wall base molding against the wall. Nail the molding to the wall at an angle every 16".

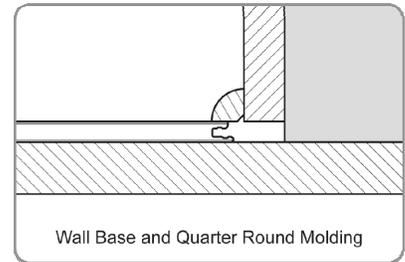
✓ **TIP:** Always nail the wall base to the wall at an angle. If you nail straight into the wall, the nails may not hold well into the drywall.



5. Apply a thin, wavy line down the length of the quarter round molding.

6. Gently press the quarter round molding to the bottom of the wall base molding as it fits snugly against the flooring. Nail the molding to the wall at an angle every 16”.

✓ **TIP:** Always nail the wall base to the wall at an angle. If you nail straight into the wall, the nails may not hold well into the drywall.



Correcting Defects

Once all your laminate flooring, transitions and trim is installed, use wood filler, putty sticks or stain to fill nail holes and correct any flooring defects. Always use fillers designed to be used with laminate flooring. Other fillers may damage your new laminate floor.

If there are significant gaps between any moldings and the wall, use caulk to help hide the flaws.

Sealing Moisture Prone Areas

Some manufacturer's recommend that expansion spaces be sealed around moisture prone areas (such as outside doors and near kitchen appliances). Check with your manufacturer for specific recommendations. If none are provided, seal the area with weather stripping and silicone sealant.

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