HOMEOWNER REPAIR GUIDE

# FLOOR UNDERLAYMENT

*Beneath your new flooring*

If your kitchen floor looks like someone stabled horses on it all summer, if your bathroom floor tile is broken and chipped, or if the pattern went out of style before man walked on the moon, you may wish to replace your flooring material. To do the job right, however, you need to consider more than the color, pattern, and composition of your new flooring.

## WHY UNDERLAYMENT MATTERS

Before installing any new flooring material, make sure that the surface below it is intact and solid. If you try to put tile or linoleum directly on top of an existing tile floor, or over a floor that is flexing, the new flooring will quickly crack and break up.

> **CERAMIC TILE**
> This is particularly true when installing ceramic tile; if the floor beneath ceramic tile is not rigid and solid, the tile will crack.

The usual way to remedy this situation is to install new floor underlayment. The underlayment will provide a clean, solid surface on which to install the new flooring. In most areas, your underlayment will consist of one or more sheets of plywood. As an alternative, especially in a bathroom or other water-prone area, you may wish to use concrete backer board, a kind of “drywall” impregnated with cement that provides a rigid, waterproof base.

## PREPARING THE OLD FLOOR

If your kitchen floor is covered by carpeting, scrape off as much of the carpet or pad as practical, but you don’t have to overdo it – small amounts of residue won’t have too much effect when you put down the underlayment. For tile floors, remove any loose tiles and fill in the spaces they leave with underlayment crack filler (a powder which you mix with water to a plaster-like consistency). Spread it into the spaces where the tiles were, and smooth it with a large putty knife. It will harden quickly.

## INSTALLING PLYWOOD UNDERLAYMENT



*Underlayment nail*

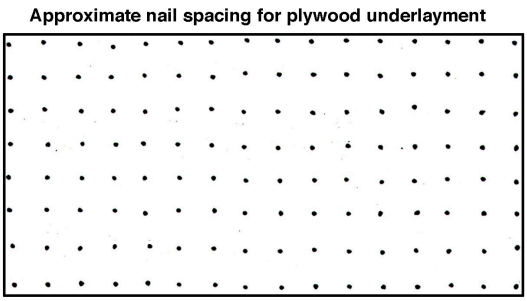
1. After the crack filler has hardened, you can start installing the underlayment. First, if you have baseboard molding around the room, remove the bottom piece (usually called “quarter-round molding”).
2. Then, nail 1/4″ mahogany plywood right on top of your existing floor. (This material will work well as underlayment, unless you have a particularly weak or “spongy” floor, or if you intend to install ceramic floor tile, which needs a stronger base – see below.) Mahogany plywood is smooth on both sides. You’ll find it readily available and fairly inexpensive.

3. To nail down the plywood, use underlayment nails, which have a smaller head and rings on the nail shank that prevent them from working loose. Drive nails throughout the entire sheet of plywood, every 6 to 8 inches (see illustration), to ensure the floor is down solidly. If you have a very flexible floor, you can use some construction adhesive to help glue down the underlayment. You'll still need to use nails, but the glue will help stop the wood from flexing.

4. After you are done nailing, take some more underlayment crack filler and fill in all the joints where the plywood sheets meet and at the edges of the room. Any other gaps should also be filled (such as around door jambs), so you have a good solid base. The crack filler can be sanded after it is dry, to create a really smooth surface. After a good sweeping up, you will be ready to start laying your new floor.

## UNDERLAYMENT FOR CERAMIC TILE

If you will be installing ceramic tile, you'll need a firmer base. Your best approach is to use concrete backer board as your underlayment material, cutting the sheets to size with a carbide scoring tool or a circular saw with a masonry blade. Nail the pieces in place or glue them with construction adhesive or thinset mortar. Cover the joints with mesh tape – the kind found in the tile department (not the drywall department). If you use wood under ceramic tile, start with a ½″ sheet of plywood and top it with a ¼″ sheet, laid at right angles to the first. (Don't use Lauan plywood, as it can be damaged by the moisture in the adhesive you'll be using to imbed the tile.) Secure each sheet with nails and construction adhesive as described above.




*Nail every 6 to 8 inches across the entire sheet*

### PLAN FOR A HIGHER FLOOR

Remember that adding the underlayment will raise the height of your new floor. You may need to shave off the bottoms of doors, add an extension flange on your toilet, and/or install a special threshold molding (i.e., "carpet bar" or "tile strip") at each edge of the floor to bridge the differing heights in adjacent rooms.

## STARTING OVER

An alternative is to remove the old flooring and underlayment down to the subfloor and "start over." For ceramic tile, begin by nailing a layer of plywood directly into the floor joists. Cover it with a thin layer of inexpensive thinset mortar to fill any voids between the plywood and the next layer, and then install concrete backer board on top of the thinset. Finish by spreading another layer of thinset on top of the backer board when you're ready to imbed the tile.

The time you spend getting the floor ready will help ensure that your floor covering will be more attractive and long-lasting.

Home Repair Resource center

Home Repair Resource Center empowers homeowners to maintain their homes for sustainable and diverse communities.

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