INTERIORS
RESILIENT FLOORING

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RESILIENT FLOORING MATERIALS

Resilient flooring comes in sheet and tile forms. Sheets generally perform better than tiles, especially in wet locations and heavy-traffic areas, where the seams between tiles can soak up water or trap dirt.

There are two types of resilient sheet flooring — perimeter-bond flooring, which is glued down at the edges only, and fully adhered flooring, which is set in a full bed of mastic. Perimeter-bond flooring is flexible, so it's less likely to rip and tear during installation. It also slightly bridges uneven surfaces and can better withstand expansion and contraction of the substrates. However, a fully-adhered floor can take more abuse after it has been installed.

Color Choice

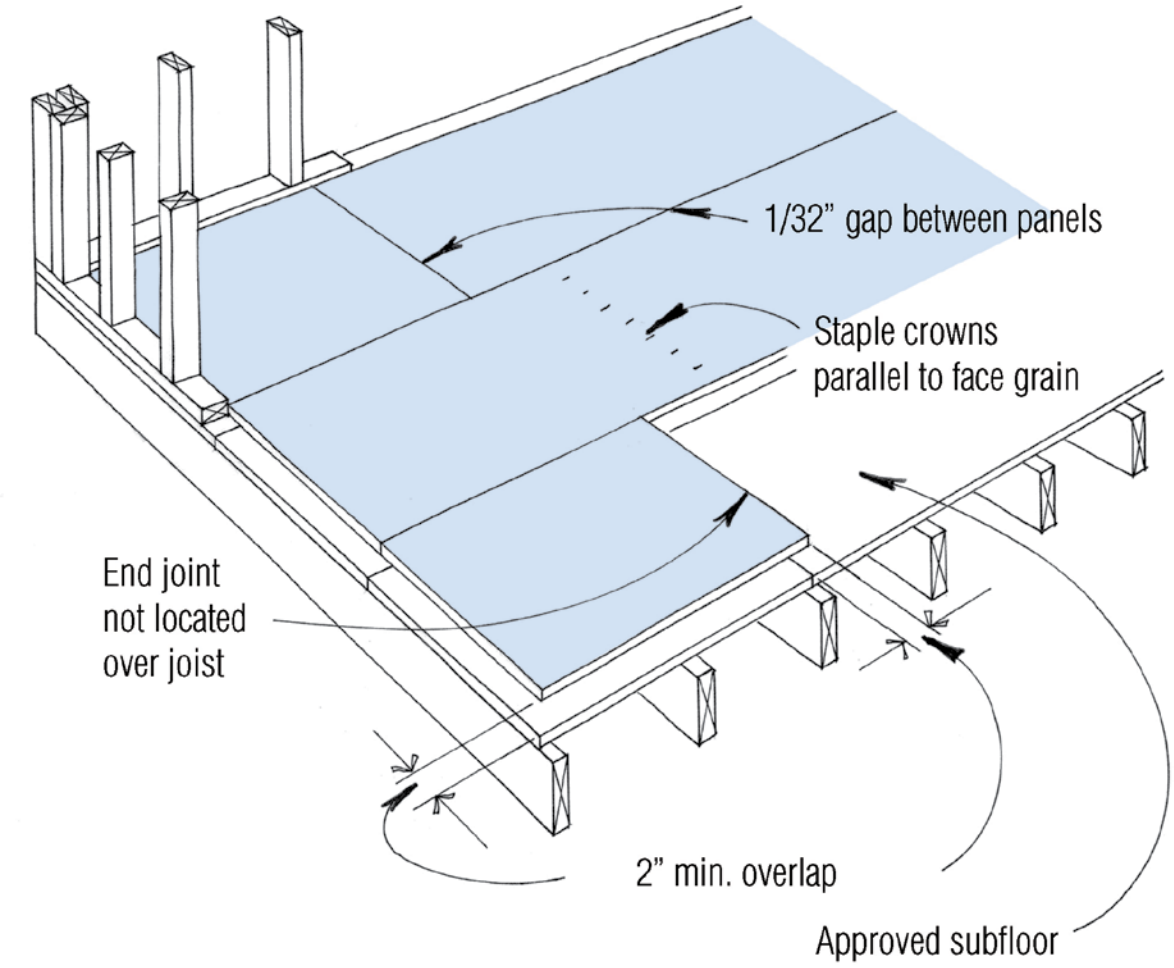
- Solid colors show scuffs, scratches, and dirt more than patterned surfaces.
- Dark colors show dust more than light colors.
- Complicated patterns can make matching and repeating patterns problematic, demanding an experienced installer.
- Whites can turn yellow and bright colors can fade under prolonged exposure to direct sunlight.

SUBSTRATES FOR RESILIENT FLOORING

How well a resilient floor performs depends a lot on the quality of the substrate. Unevenness and nail pops telegraph through the flooring, and knots and certain fillers may bleed through. Vinyl manufacturers are very specific about what they consider an acceptable underlayment. Using anything else usually voids the warranty. Always check with the flooring manufacturer before proceeding.

PTS. Plywood underlayment must be at least 1/4 in. thick with a fully sanded face (**Figure A**). Use plywood with wood plugs and fillers, rather than plastic or resin fillers, which may discolor the flooring. Do not use AC plywood, which has voids in the core and is made with an interior-grade glue. The porosity and moisture sensitivity of interior-grade panels have caused problems with adhesive bonding and panel edge swelling. The safest approach is to use only PTS (plugged, touch-sanded) plywood.

FIGURE A: PLYWOOD UNDERLAYMENT FOR RESILIENT FLOORING

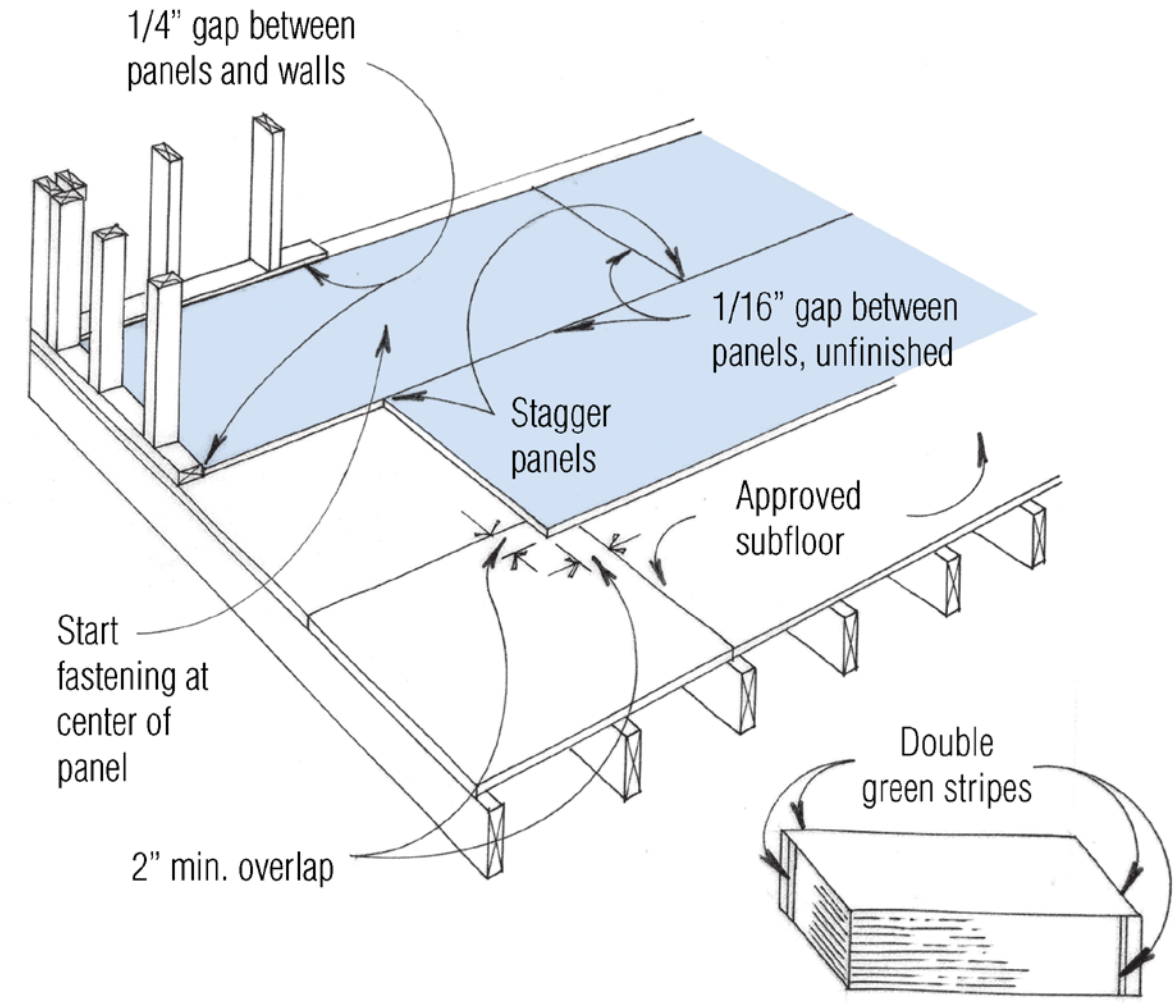


Plywood underlayment should be laid perpendicular to the floor joists. Space the end joints 1/32 in. apart and don't locate them over joists. Follow the nailing schedule shown in **Figure C.**

Lauan plywood must be Type 1, which has an exterior-grade glue. Face grades should be CC or BB. Be aware, however, that lauan is not supported as an underlayment by any flooring manufacturer. PTS plywood is a safer option.

Hardboard. The only hardboard underlayment approved by a resilient floor manufacturer is Class 4, service-grade panel (**Figure B**).

FIGURE B: HARDBOARD UNDERLAYMENT FOR RESILIENT FLOORING



The only hardboard underlayment approved by resilient floor manufacturers is a Class 4, service-grade panel. This panel is identified by a double green stripe near the corners of a stack of panels. To install, start nailing at the center of panels and work toward the edges. Leave a 1/16-in. gap at every joint.

Particleboard is not recommended under resilient flooring — the edges may swell under wet conditions.

Self-leveling underlayments are typically gypsum- or portland-cement-based materials that are mixed by hand or pumped to depths ranging from 3/4 to 3 in. While they are useful for renovating bumpy, out-of-level, or damaged floors, they are not always recommended for use under resilient flooring. The biggest problems are often related to the moisture levels of the floor caused by inadequate curing of the underlayment compound. Before considering this option, check with the flooring manufacturer to make sure a self-leveling underlayment can be used with a specific flooring, and if allowed, be sure to follow the underlayment manufacturer's instructions.

FASTENING SUBSTRATES FOR RESILIENT FLOORING

Use noncoated ring-shank or spiral-shank underlayment nails at least 1 in. long. Place nails 1/2 in. from panel edges, spaced as shown in **Figure C**. On remodeling jobs, nails must be long enough to penetrate the old resilient flooring and at least 3/8 in. into the subfloor.

FIGURE C: UNDERLAYMENT NAILING SCHEDULES FOR RESILIENT FLOORING

Underlayment	Subfloor	Underlayment Thickness	Fastener	Nail Spacing (in.)	
				Along panel edges	Within field, both directions
Plywood	Plywood (1/2 in.+)	1/4 in.	1 1/4 in. (3d) underlayment nails	3	6
Plywood	Plywood (1/2 in.+)	3/8 to 1/2 in.	1 1/4 in. (3d) underlayment nails	6	8
Plywood	Plywood (1/2 in.+)	5/8 to 3/4 in.	1 1/2 in. (4d) underlayment nails	6	8
Plywood	Plywood (1/2 in.+)	1/4 in.	18 ga. staples x 3/16 x 7/8 in.	3	6
Plywood	Plywood (1/2 in.+)	3/8 in.+	16 ga. staples x 3/8 in.	3	6
Plywood	Boards up to 4 in. wide	1/4 in.	1 1/4 in. (3d) underlayment nails	3	6
Plywood	Boards 4 in. and wider	3/8 in.	1 1/4 in. (3d) underlayment nails	6	8
Particleboard	Plywood 5/8 in.+	less than 5/8 in.	1 1/2 in. (4d) underlayment nails	3	6
Particleboard	Plywood 5/8 in.+	3/8 to 5/8 in.	2 in. (6d) underlayment nails	6	10
Particleboard	Plywood 5/8 in.+	1/4 in.	18 ga. staples x 3/16 x 7/8 in.	3	6
Particleboard	Plywood 5/8 in.+	3/8 in.	16 ga. staples x 3/8 x 1 1/8 in.	3	6
Particleboard	Plywood 5/8 in.+	1/2 to 5/8 in.	16 ga. staples x 3/16 x 1 5/8 in.	3	6
Particleboard	Boards less than 8 in. wide	Same as for 5/8 in. plywood subfloor	16 ga. staples x 3/16 x 1 5/8 in.	3	6
Hardboard	All of the above subfloors	0.215 in.	1 1/4 in. (3d) underlayment nails	3	6
OSB	Plywood boards at least 5/8 in. thick	1/4 in.	1 1/s in. (4d) underlayment nails	4	6

When installing sheets of underlayment, follow the schedule shown above for each of the panel types and fasteners described.

Staples, if used, should be at least 1 in. long with 3/16-in. crowns and 18-gauge legs with divergent chisel points. Space staples 2 in. o.c. at edges (3/8 in. from the edge) and 3 in. o.c. in the field, with crowns parallel to the panel's face grain.

Subfloor joints with level changes in excess of 1/32 in. must be sanded level or sloped to a feather edge. Holes should be filled with a patching compound approved by the flooring manufacturer — the most common types consist of resin-reinforced latex Portland cement.