

## Interior Flooring

There are many options and considerations when choosing interior flooring. For example, laminate, vinyl planking, and vinyl tile are lighter, softer, and warmer to walk on and more drop friendly compared to ceramic tile. As always, the success of a flooring system is like any other building product: you get what you pay for.

### Flooring Type & Variables:

- **Laminate:** There are 2 basic types: Direct-Pressure Laminate (DPL) & High-Pressure Laminate (HPL). DPL is residential grade, HPL is commercial grade. Both consist of layers bonded together under heat & pressure. The layers include a transparent resin-type wear layer on the surface, a decorative resin layer, & an impact-resistant core (typically high-density fiberboard). Laminate flooring quality & durability increases with thickness of material. Excessive moisture exposure will cause seams to swell requiring replacement of damaged area.
- **Vinyl Tile (VT) / Vinyl Planking (VP):** These are not considered engineered products. VT is made of 70% crushed limestone. VP is made of solid vinyl with a fiberglass mesh in the center to help with stability. VT & VP are highly scratch-resistant but not scratch-proof. Floor thickness is not related to value. A urethane coating is typically considered higher quality. A PVC coating is generally considered lower quality and often sold in retail stores, but depending on method of production it can have decent scratch resistance. VT and VP can be glued in place or installed as a floating floor.
- **Ceramic Tile:** A masonry product that will crack with movement. Movement may result from poor bonding-attachment to the subfloor, overall structural movement, or missing/loose/non-supporting grout. A subfloor of cement board is commonly used for compatibility purposes. Using "Underlayment Plywood" (UP) is an option too. UP has very little pine oil, which does not work well with mortar or tile glue. When installing tile on UP using a latex additive will slow the drying process and increase mortar adhesiveness to the plywood.
- **Carpet:** This is typically made of tufting or face yarn and a polypropylene mesh or non-woven polyester, used with synthetic latex and/or various adhesives and extenders. Latex is vital when bonding the various materials together. A poorly supporting (cheaper) carpet pad will increase carpet movement and friction of the ribbon-cord backing materials, reducing useable lifespan. The carpet eventually bottoms out (no more give) to the hard subfloor.
- **Hardwood Flooring:** Constructed either as Solid Boards (SB) or Engineered Boards (EB). The hardness rating is dependent on wood species. SB are more vulnerable to humidity and temperature extremes. SB are pre-finished or finished onsite with a urethane or oil finish. EB incorporate a real wood veneer which is bonded to plywood. EB are very stable with fluctuations in temperature and humidity.

### Considerations & Recommendations:

- **Sand, Dirt, and Scratching:** A round sand granule when stepped upon and turned can exert 150 PSI of pressure thus grinding and damaging the wrong floor very quickly. Entry ways to homes should always consider this variable when choosing a flooring material. However, be aware that there is no scratch-proof floor.
- **Product Acclimation & Humidity:** All flooring materials should be opened and allowed to adjust to the structure's interior humidity and temperature levels. No flooring should ever be exposed to humidity levels in excess of 55%.
- **Floating Floors:** A floating floor should never be placed under a cabinet or secured in place. It must be allowed to move and adjust with temperatures and humidity changes. Limiting the movement often voids warranties. Installing a floating floor below grade may trap moisture on the underside and create indoor air quality concerns. Floating-type locking floors are easier to install than before and no longer requiring glue or clamping.
- **Adhesives (wet versus dry):** Wet adhesives cannot be walked upon; they are messier and harder to work with. Dry adhesives can be walked upon with clean shoes and are much easier to work with; they require a 100-pound roller to ensure adequate subfloor to floor bonding.
- **Installation & Operational Notes:** The center of the floor is the most vulnerable for movement. Floating floors sometimes sound hollow. Flooring directly over HVAC supply ducting, particularly SB, is vulnerable to movement and may result in cracks-gaps from ongoing concentrated heat exposure. Replacing a damaged section of vinyl or laminate flooring is easier compared to tile.
- **Patented Locking Systems:** Higher end (more expensive) locking floor systems are designed to adjust for expansion and contraction to maintain flatness in the floor. They reduce/limit bumps, high spots, or buckles in the floor. Retail building supply store flooring may or may not have these advanced patented locking systems.

#### **\*Flooring Consultation-Recommendation\***

Interior flooring options and products are constantly changing. The traffic patterns, exposures, temperature and humidity levels, as well as the location (at, above, or below grade) are all important. To ensure the best product for the best application we strongly recommend consultation with an industry trained professional installer.

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