

# TECHNICAL SPECIFICATIONS DATA SHEET: LAMINATE FLOOR

The way laminate Floors are made,

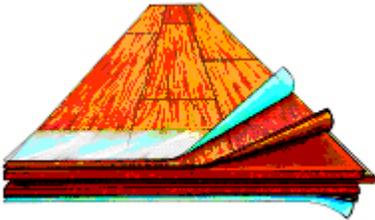
## Direct Pressure Laminate Flooring

DPL is made of 4 layers:

- **Stabilizing Layer:** sometimes called the Backing Layer, it is the bottom material that provides strength and stability to the laminate board.
- **Core Layer:** sometimes called the core board, it is the central layer of a laminate floor board that is the structural element supporting the weight and stresses of foot traffic. It is typically made with high-density fiberboard (HDF), but sometimes is made from particle board or medium-density fiberboard (MDF).
- **Decorative Layer:** the name given to the photo rendering of the design which is made to mimic the surface of a natural material, such as a hardwood species.
- **Wear Layer:** a resin-based coating designed to resist abrasion and typically made up of several coats of melamine or aluminum oxide (2nd only to diamonds in hardness) which protects the floor from stains, fading and wear.

Sheets of laminate flooring are made by fusing these four layers together at over 600 pounds of pressure per inch at temperatures of around 400 degrees Fahrenheit. In the direct-pressure laminate process the decorative covering layer and stabilizing layer are pressed together onto the core layer.

Composition of a direct-pressure laminate floor (DPL)



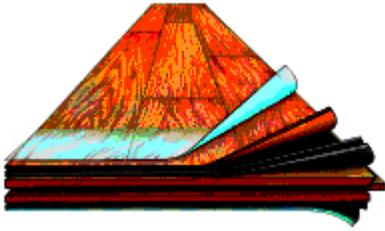
- Overlay (wear layer)
- Decorative paper
- Core layer
- Stabilizing layer

## High Pressure Laminate Flooring

HPL is made of 5 layers instead of 4 and creates a more durable laminate than direct pressure can because the backing and top wear layers are treated separately and then fused directly onto the core, creating a very strong floor suitable for very heavy traffic. It consists of the same four layers as in Direct Pressure Laminate, with the fifth layer being a special high-strength paper.

In the high-pressure laminate process, the decorative paper and overlay are pressed onto a special high-strength paper first. Only in a second stage is this so-called high-pressure laminate glued to the core layer.

#### Composition of a HPL Laminate floor



- HPL layer
- Core layer
- Stabilizing layer

The resulting laminate flooring products can come in thicknesses varying from approximately 6mm to 14mm, the thicker the laminate floors, the more durable. HPL flooring is generally more expensive than DPL flooring.

#### The Final Steps in the Process

Once the sheets of laminate flooring are made using either of these two methods, surface textures are then imprinted onto the sheets. The sheets are then cut into planks of varying lengths or into square tiles. Specialized machinery is then used to cut the tongue and groove locking system into the edges

### Laminate Flooring Types

Since the lamination process simply is the fusing together of two or more types of materials, and sealing them, the world of laminate flooring is full of choices. Wood, stone and tile are some of the most popular uses for lamination. Any type of grain and color of wood or layout of stone or tile can be captured, laminated and split into easily-assembled planks from which you can create a floor. The sky is the limit, sometimes making it difficult for consumers to settle on one choice.

Here's one way to think about laminates—to divide them into different types and to try and settle on which type of laminate floor will work best for your project.

#### Installation Types

You can divide laminate into installation categories and you might want to select your laminate this way, ensuring you pick a floor with the kind of installation you prefer:

- **Glueless-Click.** Over two-thirds of today's laminates fall under this easy-to-install, glueless click-lock category.



### Laminate Flooring with Underpad Attached

Note: some laminate floors come with a pre-attached underpad, making installation even quicker and easier. Laminate floors without a pre-attached underpad often require that an underpad be laid down prior to installation of the laminate floor to provide a level of cushion and sound absorption. Additionally, if the laminate floor is being installed on or below grade, or in an area subject to moisture, a separate thin plastic underlayment will need to be laid down prior to installation of the laminate floor to provide a moisture barrier (aka vapor barrier). This needs to be done whether the laminate floor has a pre-attached underpad or not.

- **Glued Laminate.** You'll need to glue the joints together. While this makes for a very strong floor once installed, installation cost and time is higher than with a glueless-click.
- **Pre-Glued.** Here, the joints have a glue already applied to them, but may need to be moistened to activate the glue before you join them together.

### Surface Types

You might want to pick your floor simply based on what the surface will look like. As we've said before, laminates are always evolving. Where there once was one basic surface to choose from, now there are many.

- **Smooth.** A plain finish just like a layer of varnish you'd associate with hardwood. Sometimes you can choose between high, medium and low gloss finishes.
- **Embossed and/or Textured.** Some laminates come with a textured finish. Regular embossing isn't an exact match up with the grooves of the printed grain but does fool the eye into seeing a surface grain.



### Hand Scraped Laminate Floor

**Distressed/Hand scraped.** Hand scraped laminate flooring is now available—a process that up until recently was reserved only for engineered or solid hardwood floors. This process adds an antiqued look to your laminate floor.

- **Embossed in Registration.** This type of embossing matches the grain of the wood exactly for the most authentic embossed look.

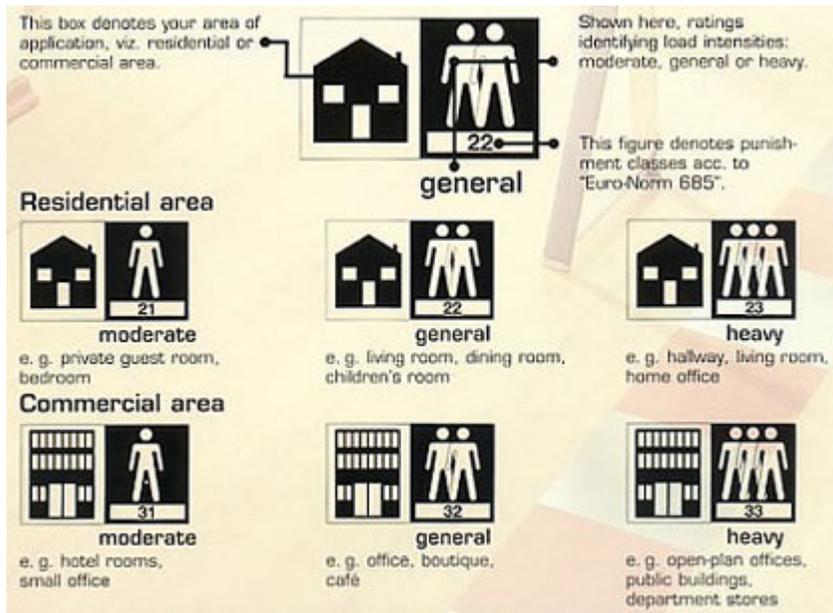
## Laminate Flooring AC Ratings

An AC rating is a common term used to indicate the durability level of laminate flooring. These ratings are applied to all laminate floors by an independent body known as European Producers of Laminate Flooring (EPLF). To help buyers understand the difference in durability among laminate flooring products, these ratings indicate a laminate's resistance to stress.

To assign the AC rating, a series of tests are carried out in order to assess each line of laminate flooring for resistance to burns, scratches, stains and impact. These tests also examine the effects of furniture legs, castors and thickness swelling along flooring edges. Laminate flooring has a rating only if it has passed all of the tests, as failing a single test disqualifies a product.

### A general guide to AC ratings:

The AC rating assigned after testing specifies the level of stress and the suitable location for the laminate flooring to be installed. These ratings will also tell you if the laminate flooring can be used in residential or commercial areas.



### AC1 Moderate Residential.

Built to withstand only light residential use. Suitable for closets or bedrooms.

## **AC2 GENERAL RESIDENTIAL**

Built for moderate foot traffic. Suitable in residential spaces that don't see a tremendous amount of wear and tear like dining rooms or living rooms.

## **AC3 HEAVY RESIDENTIAL/ MODERATE COMMERCIAL**

Built for all kinds of residential use including high-traffic rooms and even commercial spaces that have light traffic like offices without off-street traffic and hotel rooms.

## **AC4 GENERAL COMMERCIAL**

Built to withstand every kind of residential use as well as more heavily trafficked commercial spaces that have off-street traffic like offices, cafes, and boutiques.

## **AC5 Heavy Commercial.**

Built for the busiest commercial uses and high-traffic spaces like department stores and government buildings.