

Further Information on the Manufacture and Installation of Laminate Countertops

When a consumer orders high pressure decorative laminate (HPL) for his or her countertop, generally, the contractor hired will come to the consumer's home and measure cabinetry and/or existing countertops and then return with a semi-finished product for installation. Time between measuring and installation varies depending upon the company hired but it is not uncommon for a job to be completed from start to finish in a week or two. With laminate installation, there is often much more scribing of the material done on site so there is a bigger. If the scribing is not done outside, there is a dust issue after the installation. Many quality laminate fabricators will try to take all pieces outside where possible to work on, as they are light and easier to move than other materials. There will be some cleaning required after an installation, but generally speaking, for typical kitchen or bathroom jobs installation itself is finished in one day or less.

Before reaching the consumer, HPL goes through a multi-step manufacturing process and is then cut and beveled to specifications. The laminate then goes to a builder or contractor for final installation.

Laminate is composed of plastic resins, Kraft paper and decorative sheets and then adhered to a substrate such as plywood, fiberboard, or particle board. It all starts with the paper. Depending on the grade and thickness, seven to 18 layers of paper are individually soaked in resin. Traditionally, the bottom layers are done first with Kraft paper in ribbons of three to five feet in width. The paper is run through vats of phenolic resin. The upper layers use the desired decorative paper and a translucent top sheet that are run through melamine resins.

The sheets are then individually dried, cut and stacked before being fed together into a heated hydraulic press. At up to 1,400 psi, the heat causes the molecules in the resins to combine and set. This process is known as thermosetting which produces a single, solid sheet of laminate that can no longer be shaped or molded even at the temperature and pressure in which it was created. After the laminate sets, it is cut to the specified dimensions and an adhesive is used to bond it to the substrate material, usually the aforementioned plywood or particle board, but also, more infrequently, to metals. The laminate is also edged in one of the three main styles: straight, beveled and post-formed. The straight edge is the original boxy edge that leaves a thin brown line while the beveled edge is usually a contrasting color. The post-formed edges are rounded and pre-fabricated by machine.

Many environmentalists and green builders lament on the fact that laminate plastics are not recyclable as plastics and produce toxic byproducts during the manufacturing process. In response, some manufacturers have begun to use water-based phenolic resins instead of the original solvent-based resins, which produce fewer toxins. They have also begun to recycle laminate dust by using it as a fuel to power the presses, thus reducing the use of natural gas by 30 to 40 percent.

Although some experienced DIYers are adept at installing laminate countertops, the industry recommends a professional contractor complete the job. The surface where the laminate countertop is to be installed must be prepared by removing varnishes, cleaning and sanding to roughen it up which ensures stronger bonding. The laminate must also be cut specifically and accurately to ensure a proper fit. Alignment is key and the countertop is bonded to the base surface using either contact cement or epoxy adhesives. The laminate can then be further trimmed with a router or file and any adhesive seepage can be removed with a solvent.



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