



# CPA Surfacing Guide

**D**ecorative surfaces add value, design and durability to furniture, cabinetry, millwork and other interior fixtures made from engineered wood panels. With across-the-board advances in performance and aesthetic appeal, it's important to understand the differences between the major categories of materials and where they are commonly used.

Often a complete solution involves using a combination of surfacing materials, many of which are now offered in complementary and matching colors and designs. The choice of decorative laminate depends on many factors including the specific application, performance requirement, design objectives and cost. With this in mind, the CPA offers this quick guide to decorative laminate surfaces.

HPL sheets are pressed individually, many different designs and colors can be offered in small quantities. Textured press plates may be used to control gloss levels, or impart textures that mimic stone, wood, tile or other surface designs.

The final product is a sturdy, wear-resistant sheet of decorative laminate normally specified for high-use applications like counters, desktops and laminate flooring, and is laminated over a variety of substrates but most usually particleboard. Special postforming grades of HPL can be specified for wrapping around radiused edges, like countertop fronts and backsplashes. Unique variations of HPL are available, such as antibacterial surfaces, flame resistant, translucent sheets, and very thick sheets known as "compact board" or solid phenolic panels. CPL – continuous pressure laminate – is similar to HPL, but produced in a feed-through process. CPL is generally a thinner product offered with fewer design options, and is produced and sold mostly in Europe and Asia.

## **THERMALLY FUSED MELAMINE (TFM)**

One of the fastest growing laminates is thermally fused melamine. Besides TFM, this laminate type goes by many names including direct pressure and low pressure, or just simply melamine. TFM utilizes a melamine-impregnated printed or solid-color décor sheet similar to that used in HPL, but instead of being laminated to layers of kraft paper it is pressed directly onto a substrate like particleboard or MDF. Under heat

**RIGHT:**  
*High-pressure laminates are often the first thing people think of when they hear the word "laminate."*

**FAR RIGHT:**  
*Thermally fused melamine is used in this medical facility on cabinet boxes, door fronts and walls. Work surfaces are high pressure laminate. Both materials are complimentary and excellent choices for environments where cleanliness is key.*



## **HIGH PRESSURE LAMINATE**

One of the most familiar and widely used decorative surfaces is high-pressure laminate, also known by some as plastic laminate. Made famous by the marketing efforts of the Formica Corporation in the 1950s and '60s, HPL is typically constructed of several layers of kraft paper (similar to shopping bag paper), a layer of décor paper with a solid color or printed design, and topped with a protective wear layer that can also carry printed design accents or metallic or other inclusions.

HPL is truly an engineered product that has been perfected over the years. The kraft layers are generally impregnated with thermosetting phenolic resins; the decorative and wear layers are saturated with thermosetting melamine resins. The entire "sandwich" is laminated at very high pressures (normally 850 - 1450 psi) at temperatures that can exceed 270° F. Because



and pressure the melamine resin from the décor layer flows into the substrate to create a crosslinked thermoset bond, effectively creating a homogenous decorative panel without the use of an additional adhesive. Some TFM products also carry the same type of wear layer as HPL, and can be embossed to mimic stones, woods and other materials.

TFM panels are popular in cabinetry, laminate flooring, shelving, furniture and fixtures. In fact, mid-market office furniture producers commonly use TFM for worktops, and it has long been a favorite for kitchen cabinet interiors and closet systems. TFM has even been used for removable decorative wall systems in commercial and retail settings. As a furniture surface, TFM panels and components typically require a decorative edge treatment.

Decorative foils have long been popular with higher levels of value engineering and are widely used in cabinets, store fixtures, shelving, closet systems, RTA and home office furniture.

#### DECORATIVE VINYL/3-D LAMINATES

The decorative vinyl category has seen significant innovation and growth in recent years. Some suppliers have taken to referring to it as “3-D laminate” because of its ability to be successfully pressed to panels with 3-D details machined into their faces, as well as unconventionally shaped panels and panel edges. The ability to form vinyls around panel edges is why the material is sometimes referred to as “self edging.”

Two general types of decorative vinyls are available: a standard version for flat laminating, and a slightly thicker and more rigid version designed to hold its shape when formed to 3-D details, under heat and pressure. This second type is sometimes referred to as rigid thermoform vinyl, or RTF.

Vinyls are supplied either in solid colors or printed, and some suppliers offer special surface treatments for increased wear resistance. Their use has grown in recent years as the office furniture industry has embraced nonstandard and organic shapes for worktops. They are also commonly found in RTA furniture, particularly where the design calls for soft edges and unusual shaped components. There are many components suppliers that specialize in fabricating vinyl parts to order.

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RIGHT:

*Bush Industries uses paper-based foils on their lines of home office and occasional furniture like this entertainment center.*

FAR RIGHT:

*The 3-D formability of vinyl makes it the perfect material for these raised panel cabinet doors. And durable high pressure laminate is often indicated on horizontal work surfaces and countertops.*



#### DECORATIVE PAPER-BASED FOILS

Decorative paper foils are printed or solid-color papers saturated with a blend of resins, which can vary depending on the final application of the paper. Most papers may also receive a topcoat or a “finish” coat for additional performance characteristics.

Decorative foils are adhered with adhesives to substrates like particleboard or MDF. These products provide the manufacturer with the option of a wide variety of decorative designs and colors. Decorative foil users typically do their own laminating in house. The advancement of panel surface characteristics have helped advance the use and performance of this laminate type and, while typically laminated to flat panels, some products are being engineered to allow highly detailed profile wrapping.

