CEU

TFL Makes Environmentally Friendly Decorative Panels

Affordable, Attractive and Easy

By the end of the CEU, professionals should be able to:

Explain the basic make up of TFL decorative panels, as well as how they differ from and complement other laminated decorative surfacing options.

Identify ideal applications for specifying TFL decorative panels.

Understand the environmental benefits of sourcing ECC TFL decorative panels.

List the LEED credits that may be available when using TFL decorative panels.

Designers have awesome responsibility. The materials designers choose not only have an immediate and lasting impact on the project at hand and the environment, but also on the design firm's reputation.

But perhaps most importantly, the way designers use materials in residential and commercial settings sends very specific messages to the people who use the spaces. As consumers live, work and play in homes, banks, retail stores, hotel lobbies/rooms and public spaces, the wisdom behind the specification becomes obvious. Sometimes a material is chosen based solely on aesthetics, ecological credibility, or performance. But most often a material has to deliver on all counts. The way designers specify informs consumers about the role materials can and should play in interior finishes and furniture.

WHEN DESIGNERS SPECIFY MATERIALS AND FINISHES, THEY ARE LOOKING FOR:

- Trend-setting solutions
- Unique, custom or proprietary designs
- Consistency of design and color from project to project
- Predictable project costs
- Durability appropriate to each application
- Ease of sourcing, fabrication and installation
- Environmental intelligence: the truth about the impact of specifying a material
- Value that balances aesthetics + durability + cost

As materials continue to evolve and improve, so does the designer's ability to meet these demands without compromise. One material that has come further than most is TFL – thermally fused laminate.

A snapshot of TFL's progress shows that it has grown from a rather pedestrian cabinet and shelving panel available only in a limited range of colors. Today, TFL decorative panels feature innovative, trend-leading woodgrain designs and textures, making them the preferred choice of commercial furniture designers in North America and Europe.

TFL's durability, design consistency and overall value are inspiring designers to specify it in architectural millwork, cabinetry, flooring and fixtures too. Often TFL decorative panels are used to replace traditional materials like veneers and HPL, which are over-engineered for some decorative surface applications. Today, TFL is increasingly used in commercial, healthcare, retail, hospitality and residential projects.

TFL'S DURABILITY, DESIGN CONSISTENCY AND OVERALL VALUE ARE INSPIRING DESIGNERS TO SPECIFY IT IN ARCHITECTURAL MILLWORK, CABINETRY, FLOORING AND FIXTURES TOO.

BREAKING BARRIERS WITH WORLD-CLASS DESIGN

Thermally fused laminate was created a quarter century ago by European composite panel manufacturers exploring a more efficient way to produce a decorative panel for furniture and interiors. At that time, HPL was the most widely used decorative surface and few alternatives existed.

Board producers' initial intentions for TFL leaned toward utility rather than grand design statements. For the first decades of TFL's life, color selection was limited to the dreaded "WAG" – white, almond or gray. That's why early markets for TFL were cabinet interiors, functional student furniture and shelving, closet organizers and other applications where cost trumped aesthetics.

Timid attempts at other primary colors and simple woodgrains were introduced, but TFL was still largely a Wonderbread material – low in cost and durable for a wide range of basic applications, but not exciting.

In the 1990s, TFL design began to pick up speed. A handful of North American companies began to match HPL designs by purchasing the identical décor papers from HPL producers, so designers could value engineer projects without compromising design harmony. Therefore the HPL on a high-wear work surface could be exactly matched to the TFL casework.

Innovation has continued, and today all major TFL companies publish reference guides to design matching programs in HPL, 3DL and other materials, as well as edge treatments. Offering "one-stop-shopping" for matching designs is now an important factor in the growing demand for TFL.

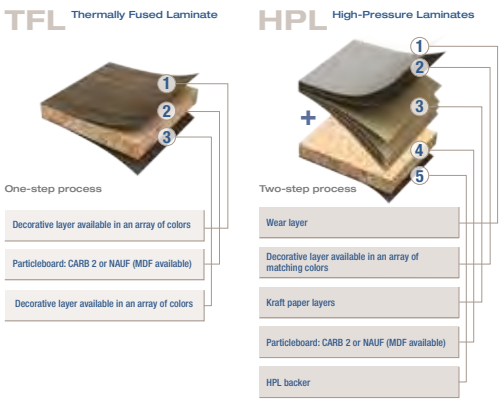
As design fidelity increased, TFL manufacturers took the lead by introducing creative and realistic decors that inspired imitation by other surface producers. Striving for ever-greater fidelity, TFL producers pioneered advanced technologies, like adapting sophisticated surface finishes and well-designed surface textures from their laminate flooring product lines.

BUILT TO LAST

TFL decorative panels are made to meet the demands of clients requiring longer lasting installations. A TFL decorative panel is comprised of two principal components: a composite wood core – generally particleboard or MDF, and a decorative paper that is either unicolor or printed with a woodgrain or other pattern using water-based inks.

The "décor paper" is saturated with a melamine resin system. Wood particles or fibers in composite panels are also bound by the same process.

The saturated decorative paper is applied to the substrate under heat and pressure, which causes the resin systems in each to flow, cross-link and bond together. The result: the decorative surface fuses to the composite panel core and cannot delaminate from the substrate. The finished TFL panel is highly durable, with similar scratch- and impact-resistant properties as HPL.



TFL is the most efficiently manufactured decorative panel. The process of thermally fusing the resin-impregnated decorative paper to a composite panel core takes less time than creating a sheet of HPL, and in most cases this happens in the same facility that produces the composite panel substrate. This means that the decorative panel leaves the factory with decorative surfaces on both faces, ready to be made into finished products. In many cases panels will be further sized and shaped, and the exposed edges will be edgebanded.

Contrast this with other decorative panels, where surfaces are either applied in secondary facilities or laminated in the field. These processes require additional gluing, laminating, curing and trimming, and the surface bond is impacted by the quality of the adhesive and atmospheric conditions.

Décor papers used on a TFL panel are similar to those used for HPL, but the lamination process is different. HPL bonds several layers of brown kraft paper to create the laminated sheet, which is then adhered to the substrate. With TFL, the decorative layer is fused directly to the substrate.

(CASE STUDY) Home Office and Storage Solutions

"We've been using TFL for many years," says Randy Tallman, Executive Vice President of Operations of The Stow Company, builders of home office and storage solutions based in Grand Rapids, Mich. "We cater to higher end home organization projects.

"Wear resistance and durability are very important to us. So is moisture resistance. Some materials, if you set a pop can down for a few minutes, will be ruined. Not TFL. The performance we get is basically the same as HPL. The only areas where we need HPL are very heavy-use areas, like a work table in a garage.

"The new textures you see in TFL, especially the linear woodgrains, are satisfying the growing demand we're getting for more modern and contemporary designs. Our customers are looking for that higher end look, but most don't want the maintenance of a veneer. They also love that they can get great design for half the price.

"All of our edgebanding materials are ABS, to keep our products as green as possible, and match our TFL surfaces. This combination makes our products durable enough that we feel comfortable offering a limited lifetime warranty against defects. Personally, I have TFL in my home that's 20 years old and still looks great."

THE NEW TEXTURES YOU SEE IN TFL, ESPECIALLY THE LINEAR WOODGRAINS, ARE SATISFYING THE GROWING DEMAND FOR MORE MODERN AND CONTEMPORARY DESIGNS.

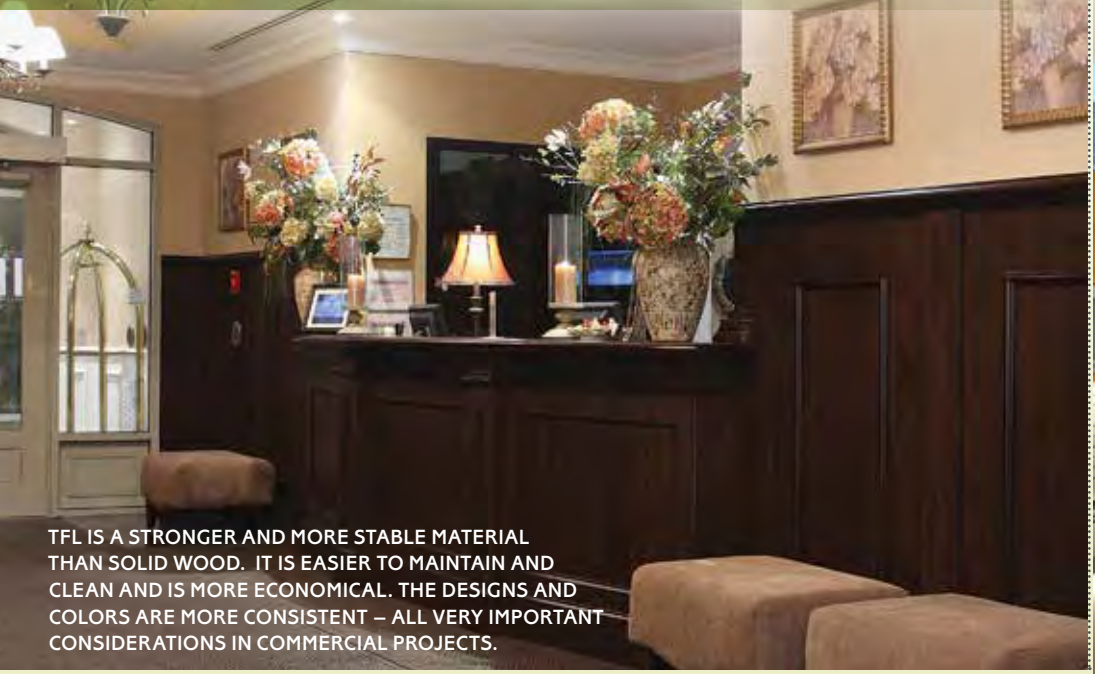
(CASE STUDY) Durability and Design Consistency in Hotel Lobbies and Rooms

Johanne Courteau, director of the interior design department for Tremblay L'Écuyer Architects of Montreal, says TFL is a bit of a secret weapon in her firm's arsenal.

TLA Associés specializes in hotels, commercial projects, schools, municipal buildings, medical clinics, grocery stores, industrial buildings, restaurants and high-end residential. The firm prides itself on using the latest in technology and materials in its projects, and using them in harmony with their clients' goals. The company recently used TFL in a boutique hotel, for wall paneling and fireplace mantles in the lobby, and for cabinets and fixtures in the rooms themselves.

"In commercial projects, TFL is a stronger material than wood, easier to maintain and clean, so we've never had any clients ask us why we don't use 'real wood.' TFL is also much cheaper, and the designs and colors are more consistent – both very important in commercial projects.

"We use it everywhere, for cabinets, worktops, banquets. I've worked at other design firms, and many still don't know what a great, durable decorative product TFL is. I'm surprised, but there are still many designers specifying materials that cost more and don't perform nearly as well."



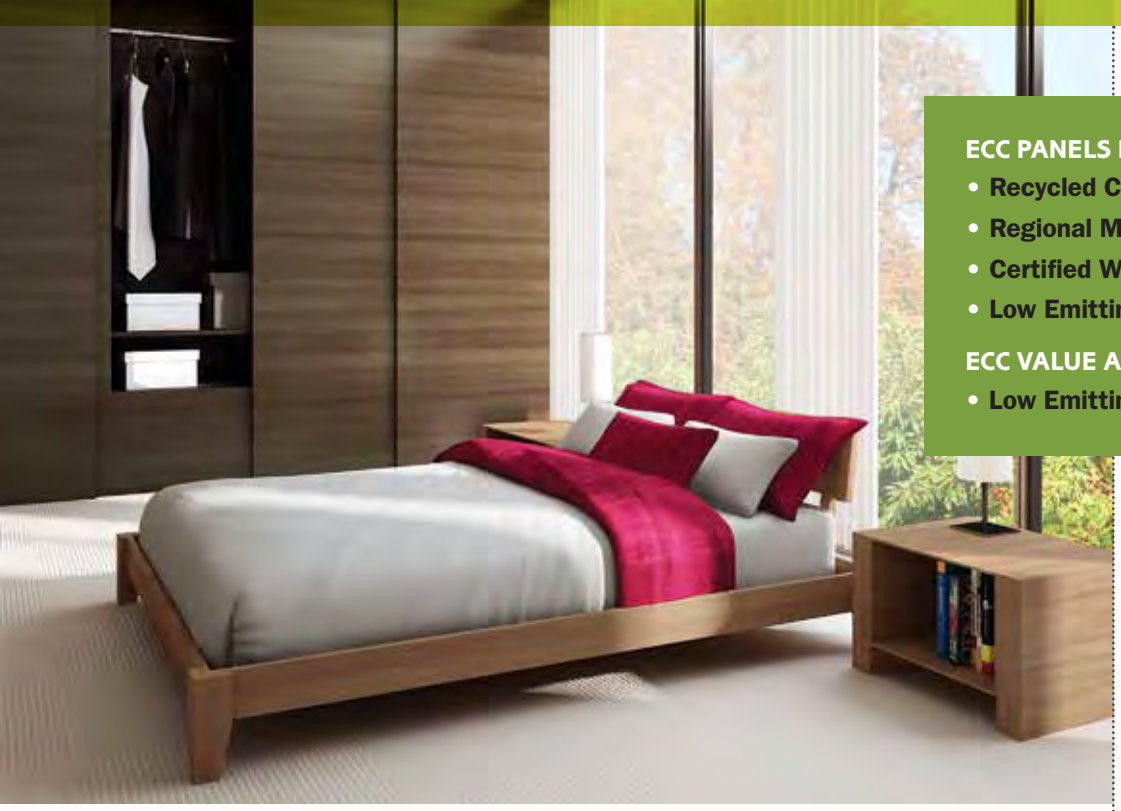
TFL IS A STRONGER AND MORE STABLE MATERIAL THAN SOLID WOOD. IT IS EASIER TO MAINTAIN AND CLEAN AND IS MORE ECONOMICAL. THE DESIGNS AND COLORS ARE MORE CONSISTENT – ALL VERY IMPORTANT CONSIDERATIONS IN COMMERCIAL PROJECTS.

THE VALUE PROPOSITION: ACCESSIBILITY + DURABILITY = AFFORDABILITY

Beyond the endless possibilities for surface design, TFL offers many practical benefits. This is particularly helpful for designers, who are charged with creating solutions that are long lasting, reasonable to execute, and within prescribed budgets. Because TFL is an engineered material, the decorative panels are both predictable and structurally sound, making for easy sourcing, processing and installation.

TFL decorative panels can be specified with or without edge treatment, and with single, double or opposite faces. They are often used in conjunction with other decorative surfacing materials to engineer furniture, fixtures and millwork that precisely meet design criteria. Established décor matching programs across materials make it easy to specify projects to the exact requirements of the application without compromising visual consistency.

Another advantage is durability. The thermoset resin system used in the production of TFL irreversibly fuses the décor layer to the substrate; resulting in a decorative panel that is inherently resistant to heat, water, chemicals and electric current. Specialized performance characteristics, such as microbial resistance and super-durability can also be achieved by increased paper thickness, saturation techniques and the use of overlays/wear-layers. Designs are visually consistent from run to run; whether the TFL decorative layer is standard or endowed with enhanced performance characteristics.



ECC PANELS MAY HELP ACHIEVE LEED CREDITS FOR:

- **Recycled Content MR Credit 4**
- **Regional Materials MR Credit 5**
- **Certified Wood MR Credit 7**
- **Low Emitting Material EQ Credit 4.4**

ECC VALUE ADDED PRODUCTS MAY ALSO HELP EARN:

- **Low Emitting Materials EQ Credit 4.5 (LEED–CI)**

TFL DECORATIVE PANELS: ECO-CERTIFIED AND LEED

The environmental legitimacy of the composite panel substrate plays a key role in the eco-credibility of the finished TFL panel. Typical substrate materials for TFL include particleboard and MDF (medium density fiberboard), materials commonly known for their consistency and dimensional stability. These board products are made by mixing wood particles (particleboard) or fibers (MDF) with resin, paraffin wax and other additives. The mixture is formed into panels and consolidated and cured under heat and pressure. All or most of the wood used in the process is recovered from other operations – industrial wood residues such as recycled pre-consumer shavings, sawdust and plywood trim, or post-consumer urban wood waste.

Beyond the basic make up of the substrate, other factors have an impact on the overall environmental responsibility of the product. To simplify the evaluation process for specifiers, the Composite Panel Association (CPA) established a voluntary industry standard for composite panel producers – the Eco-Certified Composite (ECC) Sustainability Standard and Certification Program. To qualify for ECC certification, individual manufacturing plants must first comply with the stringent California Air Resources Board (CARB) formaldehyde emissions regulation. In addition, the plant must meet at least three of the following requirements:

- **CARBON FOOTPRINT** – The plant must demonstrate that the panel's carbon store offsets its cradle-to-gate carbon footprint as determined in kg-CO2 equivalents of greenhouse gas (GHG) emissions.
- **LOCAL AND RENEWABLE RESOURCE** – At least 85% of total annual wood fiber used must be sourced within 250 miles (402 km) of the manufacturing plant.
- **RECYCLED/RECOVERED** – Use of a minimum of 75% recycled or recovered fiber; or, at least 50% recycled or recovered fiber and a minimum of 5% post-consumer fiber.
- **SUSTAINABILITY** – The plant must document that greater than 97% of its fiber furnish brought on-site to manufacture panels is either converted into panels or other non-waste products.
- **WOOD SOURCING** – The plant must hold a valid assessment and certificate from a certifying agency recognized by CPA such as the Forest Stewardship Council (FSC-Controlled Wood Standard or Chain of Custody Standard) or the Sustainable Forest Initiative (SFI—Fiber Sourcing Standard).

Additionally, the CPA has established an ECC certification program for laminators and fabricators of finished products including TFL producers. The program builds on ECC compliance for panel products and provides an audited chain of custody so ECC-compliant products can be followed right to the consumer.

Certified facilities must demonstrate that at least 50% of the content of any product they laminate or fabricate is made with ECC-compliant panels; and, of the total composite panels used at least 95% are ECC-compliant.

SUMMARY

TFL decorative panels offer specifiers a powerful design tool with many environmental benefits. Their aesthetic versatility makes it possible to achieve any visual effect, including rare stone or endangered wood species, without negatively impacting the environment. The finished decorative panels are durable, offering longer life cycles and easier maintenance than veneers and other materials. Because TFL is highly efficient to manufacture, it requires less processing energy and chemicals than other materials. And the inherent nature of the substrate makes TFL an environmentally-friendly product, a statement that can be verified thanks to the Eco-Certified Composite (ECC) Sustainability Standard and Certification Program.

Visit www.DecorativeSurfaces.org to find out more about TFL. ■

RESOURCES

The Composite Panel Association (CPA) is the trade association for the North American composite panel and decorative surfacing industries. CPA develops and maintains an online library of educational and technical information on the use and specification of industry products. As an internationally recognized and accredited standards developer, CPA publishes the industry's definitive ANSI product standards. CPA also operates the International Testing and Certification Center (ITCC) and manages the Grademark Certification Program, the largest and most stringent testing and certification program of its kind for North American composite panel products. For more information, visit CPA at www.CompositePanel.org.

TFL Makes Environmentally Friendly Decorative Panels Affordable, Attractive and Easy

Circle the letter of the correct answer for each question below.

You will earn one (1) Learning Unit by answering at least 80% of the questions on this page correctly and submitting the responses with your contact information. A certificate of completion will be sent to you upon receipt of a satisfactory submission. There is no fee. Approval of this CEU by AIA and IIDA is pending.

Take this quiz online at www.DecorativeSurfaces.org

MAIL, FAX OR EMAIL COMPLETED QUIZ TO:

Allyson O'Sullivan
Composite Panel Association
19465 Deerfield Avenue, Suite 306
Leesburg, VA 20176
703-724-1128, extension 251
Fax: 703-724-1588
email: aosullivan@cpamail.org

CONTACT INFORMATION:

NAME

COMPANY NAME

ADDRESS

CITY/STATE/ZIP

EMAIL

PHONE

AIA #

❑ I would like to receive future CEU courses.

SPONSORED BY:

Composite Panel Association

1. **Which of the following is NOT used in the production of TFL decorative panels?**
   a. Substrate
   b. Brown kraft paper
   c. Décor paper
   d. Resin
2. **During production of TFL décor paper is saturated in:**
   a. Resin
   b. Water-based inks
   c. Solvents
   d. Lacquer
3. **When pressed under heat and pressure, the décor layer and substrate:**
   a. Delaminate
   b. Cross-link bond
   c. Shrink by half
   d. Cure to B stage
4. **TFL decorative panels match other surfacing materials due to:**
   a. Coincidence
   b. Gentlemen's agreement
   c. They never match exactly
   d. Established matching programs
5. **The visual design of the TFL panel comes from:**
   a. Kraft paper
   b. HPL
   c. Decals
   d. Décor paper
6. **The process of making a TFL panel**
   a. Requires several chemical processes
   b. Is extremely energy demanding
   c. Produces waste that can be recycled into décor paper
   d. Is more energy efficient than other decorative surfacing materials
7. **The realism of TFL decorative panels is due to advances in:**
   a. Printing technology
   b. Surface texture
   c. Resin systems
   d. A and B
8. **TFL decorative panels can contribute to up to how many LEED credits?**
   a. 0
   b. 1
   c. 3
   d. 5
9. **TFL decorative panels are routinely specified for all the following applications EXCEPT:**
   a. Exterior siding
   b. Flooring
   c. Casegoods
   d. Furniture
10. **The Composite Panel Association's ECC program:**
    a. Certifies substrate manufacturers
    b. Certifies designers
    c. Certifies TFL decorative panel laminators
    d. Both a and c
11. **Which of the following make TFL panels a cost effective design solution:**
    a. They are efficient to manufacture
    b. They do not require additional laminating prior to finishing
    c. The material's durability offers a long life cycle
    d. All of the above