

Pluswood® Thermally Fused Laminate (TFL) product line features a wide selection of solids, woodgrains and abstract patterns selected to meet your most varied design needs. Our expansive color line gives access to hundreds of decorative papers that can be used in both high pressure laminate (HPL) and Panoram® TFL.

You can choose from a wide range of panel sizes, core thicknesses and grades to meet virtually any design, performance or budget challenge.

Product Description

Pluswood® Thermofused Laminate (TFL) panels consist of a melamine resin-impregnated decorative paper thermally fused to a substrate such as industrial-grade particleboard or medium-density fiberboard (MDF). Thermal fusion takes place under heat and pressure and permanently bonds the impregnated paper to the substrate.

This process results in melamine panels with extraordinary strength and durability. Panoram® Thermofused Laminate panels are resistant to scuffs, stains, moisture, light and heat.

Pluswood® TFL has a hard, long-lasting, water-resistant surface which means lower reject rates throughout your operations:

- less damage occurs at the edgebander
- the panel is more resistant to scratches and abrasions in the shop processes
- the possibility of burnishing is eliminated

Because Pluswood® TFL is easy to work with:

- edges are cleaner when trimming panels and machining dados
- the overspray of edge glues or finishes is easily removed with solvents
- both sides of panels have finished decorative surface

Typical Uses

Pluswood® TFL panels can be used for a variety of applications where design and practicality are a must. They are ideal for virtually all vertical applications and many horizontal applications, including desktop and office work surfaces. Both Pluswood® TFL and Nevamar® HPL combined, offer over 300 colors, which allows for the two materials to mix and match perfectly.

There are hundreds of applications for Pluswood® TFL:

- Kitchen and bath cabinetry
- Office furniture
- Hospital and medical casegoods
- Restaurant furniture
- Hotel and motel furniture
- Ready-to-assemble furniture
- Casegoods and built-ins
- Euro design furniture and cabinetry
- Store displays
- Closet storage systems
- Computer Furniture

Thermofused laminate panels can be used for most applications where high-pressure laminates would be specified, including horizontal surfaces. Exceptions: high-wear surfaces (i.e. kitchen countertops and checkout counters) or applications where temperatures may exceed 275 °F (135 °C).

Pluswood® TFL Conformance with Standards for Particleboard and MDF Substrates

The table below presents the average performance standards for particleboard and medium density fiberboard (MDF) as specified by the American National Standards Institute (ANSI).

Property	Particleboard Requirements ANSI/ A208.1-2016 (Specification Average)				Medium Density Fiberboard Requirements ANSI/ A208.2-2016 (Specification Average)			
	M-3i Board		M-2 Board		≤ 15mm or 0.591" MDF		> 15mm or 0.591" MDF	
	Imperial	Metric	Imperial	Metric	Imperial	Metric	Imperial	Metric
Thickness tolerance								
panel average from specified	± 0.008"	± 0.20mm	± 0.008"	± 0.20mm	± 0.005"	± 0.125mm	± 0.005"	± 0.125mm
Variance from panel average	± 0.004"	± 0.10mm	± 0.004"	± 0.10mm	± 0.005"	± 0.125mm	± 0.005"	± 0.125mm
Modules of rupture (MOR)	2,176 psi	15.0 N/mm ²	1,885 psi	13.0 N/mm ²	3,130 psi	21.6 N/mm ²	3,130 psi	21.6 N/mm ²
Modules of elasticity (MOE)	362,600 psi	2500 N/mm ²	290,100 psi	2,000 N/mm ²	313,000 psi	2,160 N/mm ²	313,000 psi	2,400 N/mm ²
Internal bond	73 psi	0.50 N/mm ²	58 psi	0.40 N/mm ²	78 psi	0.54 N/mm ²	78 psi	0.54 N/mm ²
Hardness	500 lbs.	2,225 N	500 lbs.	2,225 N	-	-	-	-
Linear expansion	0.40% max	0.40% max	0.40% max	0.40% max	0.33% max	0.33% max	0.33% max	0.33% max
Screwholding - face	225 lbs.	1000 N	202 lbs.	900 N	222 lbs.	988 N	222 lbs.	988 N
Screwholding - edge	202 lbs.	900 N	180 lbs.	800 N	177 lbs.	787 N	177 lbs.	787 N
Formaldehyde max. emissions*	0.09 ppm	0.09 ppm	0.09 ppm	0.09 ppm	0.11 ppm**	0.11 ppm**	0.11 ppm	0.11 ppm

*CARB Phase 2 compliant or better

**Formaldehyde emissions for MDF with thickness ≤ 8mm (0.315") are maximum 0.13 ppm

Grade M-3i has an "i" for industrial to differentiate it from Grade M-3

Typical substrate performance shall equal or exceed standards set by the American National Standards Institute (ANSI) for type M-3i or M-2 board. Pluswood® thermally fused to western pine substrate may achieve slightly lower impact results.

Panel Sizes and Substrates

Thickness: 1/4" to 1 3/8"

Widths: 49" and 61"

Lengths: 73" to 145"

Substrates: Industrial Grade Particleboard, Medium Density Fiberboard. Fire-retardant panels and moisture-resistant panels are also available. ZCore urea-formaldehyde-free particle board with 100% recycled wood fiber is also available.

Please contact your customer service representative for details on custom sizes, thicknesses and substrates.

How to Specify

Surface shall be Pluswood® Thermofused Laminate Panels.

Color Name: _____

Color Number: _____

Panel Texture: _____

Substrate Type: _____

Length: _____

Width: _____

Thickness: _____

Finish Options

Finish	Description
Cathedral	Vertical woodgrain finish with cathedrals spaced across width of sheet.
Chamois	Smooth finish.
Crystal reflective	Fine pebble grained finish with a medium value.
High Gloss	Smooth finish, with high reflective value.
Medium Gloss	Smooth finish with medium reflective value.
Natural Grain low	Natural-appearing, linear woodgrain finish with reflective value.
Polished Cathedral	Vertical woodgrain finish with cathedrals spaced across width of sheet with higher reflective value.
Satin	Smooth finish with low reflective value.
Straight Grain	Vertical woodgrain finish.
Suede	Textured finish with low reflective value.
Super Matte	Smooth, non-reflective finish.
Textural	Fine pebble grained finish with a low reflective value.
Timberline	Deeply embossed, linear woodgrain finish.
Wood Essence	Natural-appearing, linear woodgrain finish with low reflective finish.

Pluswood® Thermofused Decorative Panels Surface Properties

Test for resistance to:	Description	Pluswood® Solid colors	TFL Typical Performance Printed patterns
Wear	To maintain its design or color when subject to prolonged abrasive wear	700-900 cycles	125-200 cycles
Stain	To resist staining by prolonged contact with 15 common household substances	Tests 1-10: no effect Tests 11-15: no effect to slight effect	Tests 1-10: no effect Tests 11-15: no effect to slight effect
Cleanability	To be cleaned following prolonged contact with 15 common household substances (a lower value indicates better cleanability)	10	10
Light	To retain its color after prolonged exposure to a light source having a frequency range approximating sunlight through window glass	No effect to slight effect	No effect to slight effect
High Temperature	To maintain its color and surface texture when submitted to a high temperature	No effect to slight effect	No effect to slight effect
Radiant Heat	To resist any damage when subjected to a radiant heat source of exposure	No effect after 80 seconds of exposure	No effect after 80 seconds of exposure
Boiling Water	To maintain its color and surface texture when subjected to boiling water	No effect*	No effect*

* Dark colors may show a slight effect.

Care and Maintenance

Pluswood® TFL Thermofused Melamine panels should be cleaned with warm water and mild soaps. Do not use bleach or cleansers, which contain abrasives, acids or alkalis. Remove stubborn stains with a non-abrasive liquid cleanser such as Soft-Scrub® or Vim® followed by a clean water rinse. Dry the melamine surface after rinsing.

Technical Specifications

Fire Test Data

Based on the Steiner Tunnel Test Method of the American Society for Testing and Materials (ASTM-E-84-97) Standard, typical results are:

Flame spread 90

Smoke developed..... 90

Formaldehyde Emissions Test Data

Pluswood® TFL is manufactured using particleboard substrate panels conforming to the formaldehyde emission requirements for particleboard of the U.S.

Fabrication Standards

Cabinets constructed with Pluswood® TFL Thermofused Laminate panels will conform to the relevant sections of standards set by:

- Kitchen Cabinet Manufacturers Association (KCMA) (ANSI A161.1-2012). Recommended Performance and Construction Standards for Kitchens and Vanity Cabinets;
- Woodworkers Institute of California (WIC) Standards for exposed and semi-exposed surfaces of cabinet bodies.

Certifications:

Pluswood® TFL is manufactured using particleboard substrate panels compliant with the following standards:

- CARB Composite Wood ATCM:
 - Standard Core: CARB Phase 2
 - ZCore: CARB ULEF
- U.S. Department of Housing and Urban Development (HUD): 24CFR 3280

Soft Scrub® is a registered trademark for the Henkel Corporation of Rocky Hill, CT. Vim® is a registered trademark for Unilever Canada of Saint John, New Brunswick, E2L 3X1, Canada.

Delivery, Storage & Handling

- Products must be unloaded under shelter. If the unloading process is performed outdoors, products must be stored under shelter as soon as possible.
- Never store the products outdoors.
- Store panels in a dry and well ventilated area, away from production lines.
- Do not place panels directly on the floor.
- Avoid extreme temperature during the storage and at the time of use of panels.
- Control the ambient air at 21 °C (70 °F) and relative humidity between 35% and 45%.
- Allow time for panels to reach site temperature before use (minimum 1 to 2 weeks).

Limited Warranty

Subject to the limitations set forth below, Panolam expressly warrants that our products are reasonably free of defects in material and workmanship, and when properly handled and fabricated will conform, within accepted tolerances, to applicable manufacturing specifications as set forth in our technical brochure.

This warranty shall extend to the original buyer for a period of twelve (12) months from the date of shipment of this product by Panolam, and shall not be assignable by the original buyer.

This warranty does not cover damage resulting from accident, misuse, alteration, abuse or lack of reasonable care. Due to the variety of uses and applications to which this product may be put, and because the manufacturer has no control over the end products fabricated, the warranty set forth above is exclusive and in lieu of all warranties, expressed or implied, in fact or by operation of law or otherwise, or arising by course of dealing or performance, custom or usage in the trade, including, without limitation, the implied warranties of fitness for a particular purpose and merchantability, and Panolam shall have no obligation or liability to any person or entity in connection with or arising from the furnishing, sale, installation or repair, use or subsequent sale of any product supplied by it.

Our maximum liability arising out of the sale of the products or their use, whether based upon warranty, contract, tort or otherwise, shall not exceed the actual payments received by us in connection therewith. In no event shall we be liable for special, incidental or consequential damages, including, but not limited to, arising hereunder or from the loss of profits, or loss of use damages, sales of the products.

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