

Fabrication Tips

When working with Thick Phenolic Core Laminate, the following techniques will produce a quality application.

- To minimize the potential of warpage, laminate should be stored horizontally at an approximate temperature of 70° F to 75° F (21° C to 24° C) and 45% to 50% relative humidity. Good air and humidity circulation on all sides of the panel is important to maintain flatness. Exposure to extreme temperature and humidity can cause warpage.
- Thick Phenolic Core Laminate can be sawed, drilled, routed and tapped. Tool bits should be carbide tipped and run at high speeds to minimize chipping. To minimize the development of surface scratches caused by router bits, lubricating the laminate edge with a wax stick is recommended prior to tooling.
- Although stress cracks are unlikely, cutouts for electrical outlets, sinks, etc., should be oversized and inside corners should have a minimum radius of 1/8” (3 mm) and be filed smooth.
- Self-tapping screws can be used in pre-drilled holes.
- Metal brackets or clips can be used to join laminate panels. In some cases it may be necessary to use shims to level out the joint.
- DO NOT SCREW INTO THE EDGES OF PIONITE THICK PHENOLIC CORE LAMINATE.
- DO NOT USE SPLINES IN THE EDGE OF PIONITE THICK PHENOLIC CORE LAMINATE.

- When nails or screws must be used, it is advisable to first drill an oversized hole through the laminate. This reduces the likelihood of stress cracks.
- Avoid drilling holes close to the edge. A minimum distance of 1 1/2 times the hole diameter from the edge is recommended.
- Revealed edges of Thick Phenolic Core Laminate may be finished by using coarse (80 grit) sandpaper to remove the saw striations followed by sanding with fine (180-220 grit) sandpaper. The edge can then be polished with a light oil or wax resulting in an attractive, glossy finish that accents the decorative surface of the Thick Phenolic Core Laminate.
- Mitered edges should be avoided.
- All laminate is intended for interior use only, and should not be exposed to extreme humidity, continuous sunlight, or temperatures above 275° F (135° C) for extended periods of time.
- Contact adhesive can be used to bond the glueable surface of Thick Phenolic Core Laminates.
- Epoxy adhesive is recommended for bonding Thick Phenolic Core components. Light sanding of the surface with 100 grit sandpaper will improve bond strength.
- Fabricated assemblies should meet DLPA (Decorative Laminate Products Association) and ANSI A-161.2-1979 specifications where applicable

Technical Information

Typical Test Results for Pionite Thick Phenolic Core Laminates

TEST	NEMA LD3-1995					
	Test Method	D20	D44	D56	D68	D74
Thickness	(in) (mm)	.12 ± .01 3	.25 ± .01 6	.50 ± .02 13	.75 ± .02 19	1.0 ± .02 25
Appearance	3.1	Complies	Complies	Complies	Complies	Complies
Light Resistance	3.3	Slight Effect	Slight Effect	Slight Effect	Slight Effect	Slight Effect
Cleanability	3.4	10 Max	10 Max	10 Max	10 Max	10 Max
	Stain 1-10 Stain 11-15	No Effect Moderate	No Effect Moderate	No Effect Moderate	No Effect Moderate	No Effect Moderate
Boiling Water Resistance	3.5	No Effect	No Effect	No Effect	No Effect	No Effect
High Temperature Resistance	3.6	No Effect	No Effect	No Effect	No Effect	No Effect
Ball Impact	(in)	80	96+	96+	96+	96+
Resistance	(mm)	2030	2440+	2440+	2440+	2440+
Dimensional Change	3.11					
	Machine Direction % Cross Machine Direction %	0.20 0.40	0.20 0.40	0.20 0.40	0.20 0.40	0.20 0.40
Wear Resistance	3.13					
	Cycles	700	700	700	700	700

Flexural strength

Testing performed in accordance to ASTM D-790.

Machine direction=22,000 psi (152 MPa)

Cross direction=15,000 psi (103 MPa)

Deflection

The following table is intended to be used as a guideline when considering appropriate applications for Thick Phenolic Core Laminate. Specific installations of this laminate type should be developed by experienced architects. This table is useful to determinate the approximate weight that will cause a 1/4” deflection when evenly distributed over a 12” deep span of Thick Phenolic Core Laminate that is simply supported on each end.

- To read this table:
- Find the desired product on the left of the table.
 - Move across the table until you are under the appropriate span.
 - The number in the box is the weight that would cause 1/4” deflection in this configuration.

Product Type	Thickness	Span Length		
		18 in 450 mm	24 in 600 mm	30 in 750 mm
D56	.50 in	306 lb	130 lb	67 lb
	13 mm	140 kg	59 kg	30 kg
D68	.75 in	1041 lb	439 lb	225 lb
	19 mm	470 kg	200 kg	102 kg
D74	1.0 in	2468 lb	1041 lb	533 lb
	25 mm	1119 kg	470 kg	242 kg

The following formula was used to calculate the values in the above table:

$$\text{Load per Lineal Inch of Span} = \frac{(D)(E)(W)(T)^3}{0.1563(S)^4}$$

Where: D = Deflection (in.)
E = Modulus of Elasticity (750,000 psi)
W = Width of panel (in.)
T = Thickness (in.)
S = Span (in.)

This table is only intended for use as a guideline. It does not constitute a warranty. End users must be responsible for the final design of any application, ensuring that it meets all engineering requirements of the installation.

Fire Test Data

High pressure decorative laminate is frequently used in installations governed by local fire codes. Burning characteristics of laminate are greatly influenced by the adhesive and substrate utilized. Listed below are typical flame spread index and smoke developed values for Pionite Thick Phenolic Core Laminate. Thick Phenolic Core Laminate can be manufactured to provide Class A fire test performance. For details, call Pionite Customer Service at 1-800-PIONITE (746-6483).

ASTM E-84/UL723

“Standard Test Method for Surface Burning Characteristics of Building Materials”

Type	Sample Configuration	Flame Spread Index	Smoke Developed Values
D56	Unbonded	30	190
D68		30	190
D74		30	190

ASTM E-162

“Surface Flammability of Material Using a Radiant Heat Energy Source”

Type	Sample Configuration	Flame Spread Index
D44	Unbonded	25
D56		17

Pionite Thick Phenolic Core Laminate can also be manufactured to provide improved fire resistant characteristics.

ASTM E-662

“Specific Optical Smoke Density”

Type	D _s @ 1.5	D _s @ 4.0
D44	1.0	10.2
D56	0.9	5.6

Care and Maintenance

Pionite Thick Phenolic Core Laminate provides a durable surface that is easy to maintain using ordinary care.

To maintain the laminate’s lasting beauty, cleaning with a solution of warm water and liquid dishwashing detergent is all that should be required in most cases.

Stains may be removed with most non-abrasive household cleaners such as FORMULA 409®, FANTASTIK®, GLASS PLUS®, or WINDEX WITH AMMONIA D®. Light scrubbing with a soft bristled brush may be necessary to remove stains from the depth of the structure on some textured surfaces.

If the stain persists, use a paste of baking soda and water and apply with a soft bristled brush. Light scrubbing for 10-20 strokes should remove most stains. Although baking soda is a low abrasive, excessive scrubbing or exerting too much force may damage the decorative surface, especially if it has a gloss finish.

Stubborn stains that resist any of the above cleaning methods may require the use of undiluted household bleach. Apply the bleach to the stain and let stand no longer than 1 1/2 minutes. Rinse thoroughly with warm water and wipe dry. This step may be repeated if the stain appears to be going away and the color of the laminate has not been affected. **WARNING:** Prolonged exposure of the laminate surface to bleach will cause discoloration.

Many commercially available products contain substances that may damage or discolor a laminate surface. **ABRASIVE CLEANERS SHOULD NOT BE USED.** Particular care should be used with any products labelled CAUTION or WARNING. Any questions or concerns should be referred to the product’s manufacturer or call 1-800-PIONITE. Do not allow harsh materials to remain in contact with the laminate surface. Examples of these are as follows:

- Toilet bowl cleaners
- Hydrogen Peroxide
- Oven cleaners
- Drain cleaners
- Metal cleaners and polishes
- Chlorine bleach
- Coffee pot cleaners
- Hard water stain removers
- Fruit and berry juice
- Tub and tile cleaners

Formula 409 is a registered trademark for The Clorox Company of Oakland, CA 94612; Glass Plus and Fantastik are registered trademarks for The Dow Chemical Company of Indianapolis, IN 46268-0511; Windex is a registered trademark for S.C Johnson & Sons INC. of Racine, WI 53403-5011

Manufacturing Headquarters

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Limited Warranty

Subject to the limitations set forth below, Pionite® Decorative Surfaces 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 Pionite® Decorative Surfaces, 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 other warranties, express 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 Pionite® Decorative Surfaces 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.

The buyer's sole and exclusive remedy for any noncompliance with the express warranty set forth above shall be limited to repair or replacement of the defective product, or, in the event that repair or replacement is not feasible, return of the product and refund of the purchase price.

Under no circumstances shall the manufacturer be liable in excess of the purchase price of this product, in either tort or contract or otherwise, for any loss, damage or injury in connection with or arising from the purchase, use, or inability to use this product, or for any special, indirect, collateral, incidental, consequential or exemplary damages such as, but not limited to, loss of anticipated profits or other economic loss. Because some states do not allow the exclusion or limitation of incidental or consequential damages, this limitation may not apply to you.

Retaining all documentation after purchasing laminate will significantly expedite claim resolution.

Pionite®

Thick Phenolic Core Laminate Technical Bulletin

Product Identification

Pionite Thick Phenolic Core Laminate is designed for applications where the decorative surface must contribute to the structural stability of the finished assembly. Thick Phenolic Core Laminate is available in the following configurations: decorative both sides; decorative one side, glueable one side; glueable both sides.

Product Composition

Thick Phenolic Core Laminate is manufactured in a flat press by combining decorative papers saturated in melamine resin with phenolic-impregnated kraft layers at pressures exceeding 1000 psi (6895 kPa) and temperatures approaching 300° F (150° C). The thickness of the laminate is determined by the number of kraft layers used. The laminating process combines the durability of melamine resins with the aesthetics of decorative papers creating a surfacing material that has been the standard for well over forty years.

Product Description

Thick Phenolic Core Laminate can be manufactured using any Pionite solid color or pattern, and is available with either brown or black phenolic core. Laminate edges can be polished for a finished appearance. To further enhance the edge appearance, Thick Phenolic Core Laminate can be manufactured with colored stripes within the core.

Optimal Flatness is obtained by specifying the same color and finish on both sides of thick phenolic core laminates.

Thick Phenolic Core Laminate is available in thicknesses up to 1 inch (25 mm) and offers the same chemical resistance properties as standard Pionite laminate. Thick Phenolic Core Laminate can be manufactured with enhanced chemical resistance, for details please see our ChemGuard Technical Bulletin. Thicker grades of Thick Phenolic Core Laminate can be very heavy. Because of this increased weight, manual handling may be difficult. Please consult the chart below for approximate sheet weight and thickness.

		Product Types				
		D20	D44	D56	D68	D74
Thickness	(in)	0.12	0.25	0.50	0.75	1.00
	(mm)	3	6	13	19	25
	(lb/ft ²)	0.84	1.78	3.68	5.43	7.44
	(g/m ²)	4.1	8.7	18.0	26.6	36.5

Thick Phenolic Core Laminate is available in the following sizes:

Nominal widths; 36" (915mm), 48" (1220mm) and 60" (1525mm).

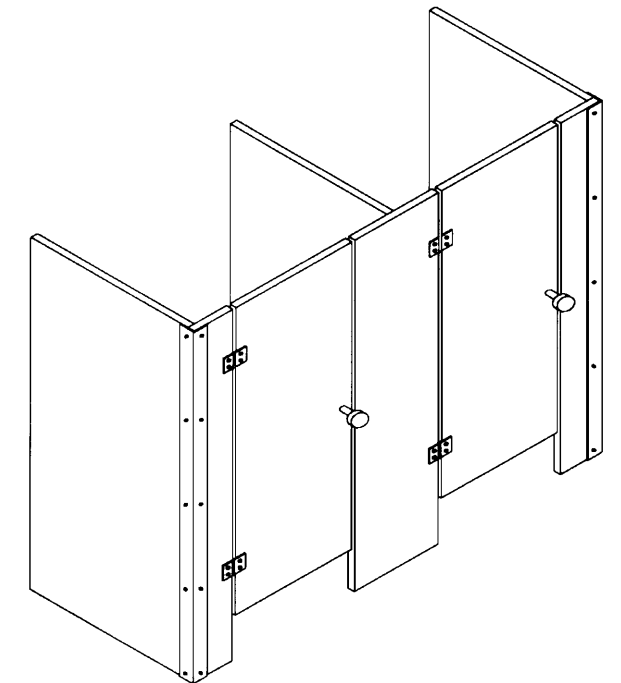
Nominal lengths; 96" (2440mm), 120" (3050mm) and 144" (3660mm).

Finish Options

Code	Finish	Description
N	Suede	Low gloss, textured finish, 12 ± 3 gloss units.
G	Gloss	A high gloss, smooth finish, 100 ± 10 gloss units.
J	Crystal	Fine pebble grained finish with a medium gloss, 15 ± 3 gloss units.
H	Hi-Brite	Smoothly textured furniture finish, 25 ± 5 gloss units.
C	Soft Leather	A finely grained leather finish, 14 ± 3 gloss units.
Available in widths of 48" and 60" only.		
Z	Ashwood	A fine wood finish with a cathedral grain, 18 ± 3 gloss units.

NOTE: Gloss units measured with a 60 degree gloss meter.

Dressing Room Made Of Pionite Thick Phenolic Core Laminate



Typical Uses

Pionite Thick Phenolic Core Laminate is ideally suited for toilet and dressing room privacy partitions. Other uses for Thick Phenolic Core Laminate include tabletops, doors, workstations, wall panels, and desktops.