

# Pionite®

## Fire Rated Laminate Technical Bulletin

### Product Identification

Pionite Fire Rated laminate is designed for interior horizontal and vertical applications where a decorative surface must resist combustion and inhibit smoke production. Fire Rated laminate, Type K, retains the durability, ease of cleaning, and appearance (including color) of standard Pionite laminate. Pionite Fire Rated laminate is classified in the U.S. and Canada by Underwriters Laboratory, Inc. under File R6581. Pionite Fire Rated Backing Sheets are also available and provide fire ratings equal to fire rated decorative laminate of the same thickness.

### Product Composition

Pionite Fire Rated 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). Special additives are incorporated into the laminate to impart fire-retardant properties. The panels are trimmed to size and the backs are sanded to facilitate bonding. 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

Standard Nominal Sizes				
Type	Thickness	Width	Length	Colors
K61 (in.)	0.060	36, 48, 60	96, 120, 144	All Solids, Patterns and Woodgrains
(mm)	1.5	762, 914, 1219, 1524	2438, 3048, 3658	
K51 (in.)	0.049	36, 48, 60	96, 120, 144	All Colors & Patterns and Woodgrains
(mm)	1.2	762, 914, 1219, 1524	2438, 3048, 3658	
K32 (in.)	0.031	36, 48, 60	96, 120, 144	All Solids, Patterns and Woodgrains
(mm)	0.8	762, 914, 1219, 1524	2438, 3048, 3658	
KB8 (in.)	0.049	36, 48, 60	96, 120, 144	Brown Backer
(mm)	1.2	762, 914, 1219, 1524	2438, 3048, 3658	
KB0 (in.)	0.031	36, 48, 60	96, 120, 144	Brown Backer
(mm)	0.8	762, 914, 1219, 1524	2438, 3048, 3658	

*Pionite Fire Rated laminate is available in brown core only.*

### 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.
C	Soft Leather	A finely grained leather finish, 14 ± 3 gloss units. Available in widths of 48" and 60" only.
L	Embossed Leather	Deeply embossed leather finish, 5 ± 1 gloss units. Manufactured in Limited Sizes.
W	Embossed Slate	Deeply embossed slate finish, 7 ± 1 gloss units. Manufactured in Limited Sizes.
Z	Ashwood	A fine wood finish with a cathedral grain, 18 ± 3 gloss units.

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

### Typical Uses

Pionite Fire Rated laminate is suited for hospitals, schools, airports, hotels, and any other public building where strict fire codes apply.

## Fabrication Tips

When working with Pionite Fire Rated laminate, these techniques will produce a quality application.

1. Proper conditioning of the laminate, substrate, and backing sheet minimizes possible warping, shrinking, or expansion of assembled panels. Ideally, all components should be conditioned at 70° F to 75° F (21° C to 25° C) and 45 to 50 percent relative humidity for 48 hours prior to assembly.
2. Always bond laminate to a suitable substrate such as inorganic cement board, UL listed fire retardant particleboard, UL listed fire retardant MDF, or metals. It should not be glued directly to plaster walls, gypsum wallboard, or concrete.
3. Maximum performance is gained by utilizing a fire-rated adhesive, such as Indspec® G1124 or G1149A/G1131B.
4. The use of Fire Rated backing sheets is recommended to minimize warpage. The thickness of the backing sheet should be relatively equal to the thickness of the decorative laminate on the face of the assembly.
5. All saw blades and router bits used for cutting should be carbide tipped. Feed rate should be slow and tool speed should be high. To minimize the development of surface scratches caused by router bits, lubricating the laminate edge with a wax stick is recommended prior to tooling.
6. All edges of laminate should be filed smooth with file direction towards substrate to help prevent stress cracks and to minimize chipping.
7. Inside corners of cutouts for electrical outlets, sinks, etc., should have a minimum radius of 1/8" (3 mm) and be filed smooth. This reduces the likelihood of stress cracks.
8. 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.
9. All work must be designed, assembled, and installed in compliance with pertinent local fire codes.
10. 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.

## Technical Information

### Physical Properties

TEST		NEMA LD 3-1995 Test Method	TYPICAL PIONITE VALUES K61	NEMA STD. SGF	TYPICAL PIONITE VALUES K51	NEMA STD. HGF	TYPICAL PIONITE VALUES K32	NEMA STD. VGF
Thickness	(in.)		0.060 ± 0.003	0.059 ± 0.005	0.049 ± 0.003	0.048 ± 0.005	0.031 ± 0.003	0.032 ± 0.005
	(mm)		1.5 ± 0.08	1.5 ± 0.12	1.2 ± 0.08	1.2 ± 0.12	0.8 ± 0.08	0.8 ± 0.12
Appearance		3.1	Complies		Complies		Complies	
Light Resistance		3.3	Slight effect	Slight effect	Slight effect	Slight effect	Slight effect	Slight effect
Cleanability		3.4	10	20 (max)	10	20 (max)	10	20 (max)
Stain 1-10			No effect	No effect	No effect	No effect	No effect	No effect
Stain 11-15			No effect	Moderate effect	No effect	Moderate effect	No effect	Moderate effect
Boiling Water Resistance		3.5	No effect	No effect	No effect	No effect	No effect	No effect
High Temperature Resistance		3.6	No effect	Slight effect	No effect	Slight effect	No effect	Slight effect
Ball Impact Resistance	(in.)	3.8	60	55 (min.)	50	45 (min.)	25	20 (min.)
	(mm)		1524	1397 (min.)	1270	1143 (min.)	635	508 (min.)
Dimensional Change		3.11						
Machine Direction	(%)		0.25	0.50 (max.)	0.25	0.50 (max.)	0.40	0.70 (max.)
Cross Direction	(%)		0.70	0.90 (max.)	0.70	0.90 (max.)	0.80	1.20 (max.)
Wear Resistance	(cycles)	3.13	700	400 (min.)	700	400 (min.)	700	400 (min.)

## 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 Fire Rated laminate.

Flame spread index and smoke developed values were determined by ASTM E-84, "Standard Test Method for Surface Burning Characteristics of Building Materials." This method is also designated by other agencies as follows:

UL723	Underwriters Laboratories Inc.
ANSI 2.5	American National Standards Institute
NFPA 255	National Fire Protection Agency
UBC 42-1	Uniform Building Code
CAN/ULC S102-M	Surface Burning Characteristics

## ASTM E-84/UL723

### "Standard Test Method for Surface Burning Characteristics of Building Materials"

Type	Sample Configuration	Flame Spread Index <sup>1</sup>	Smoke Developed Values
K61	Unbonded	55-70 (60-75)	95-130
K51		25 (25)	95-120
K32		25-40 (25-45)	100-170
K61	Bonded* to Cement Board	20 (20)	5
K51		5 (5)	5
K32		5 (5)	5
K61	Bonded* to 1/2" Fire Rated Plywood	50 (55)	35-85
K61		15 (15)	55
K51		15 (15)	60
K32	Bonded* to 3/8" Fire Rated Particleboard	25 (25)	90-160
K32		25 (25)	90-160

\*Bonded with Indspec Chemical G1124 or G1149A/G1131B 2-part Resorcinol glue.  
<sup>1</sup> Values in parenthesis are applicable to Canadian Standards (CNC).

## Codes and Certifications

- Classified by Underwriters Laboratories, Inc., under File R6581, Pionite Type K32, K51, K61, KB8 and KB0.
- Classified in accordance with Standard CAN/ULC-S102-M. by Underwriters Laboratories Inc., under file R6581, Pionite Types K32, K51, K61, KB8 and KB0.
- Lloyds Register of Shipping:

Type	Certificate No.
K32	SVG/F92/316
K51	SVG/F92/317
K61	SVG/F92/318
- United States Coast Guard Certificates of Approval:

Type	Approval No.
K32	164.012/12/0
K51	164.012/13/0
K61	164.012/2/0
- Canadian Coast Guard Board of Steamship Inspection Certificates of Approval:

Type	Certificate No.
K32	G1-118
K51	G1-119
K61	G1-120

- The City of New York, Dept. of Buildings, Materials and Equipment Acceptance Division approval code is as follows:  
K32, K51, and K61: MEA 345-92-M
- MIL-STD-1623D(SH), "Fire Performance Requirements and Approved Specifications for Interior Finish Materials and Furnishings (Naval Shipboard Use)." Pionite K61 complies with this standard.
- MIL-P-17171E(SH), "High Pressure Decorative Laminate." Pionite K51 and K61 comply with Type IV.
- American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA), LD3-1995, "High-Pressure Decorative Laminate." Pionite Type K32, K51, and K61 comply. K32 complies with VGF, K51 complies with HGF and K61 complies with SGF.
- Federal Aviation Administration for Transport Category Airplanes Part 25.853 (a). Pionite K32 and K51 comply.

## Care and Maintenance

Pionite decorative 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

## Manufacturing Headquarters

### Pionite® Decorative Surfaces

One Pionite Rd.  
P.O. Box 1014  
Auburn, ME 04211-1014  
(207) 784-9111  
800-PIONITE (746-6483)  
www.pionite.com

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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.