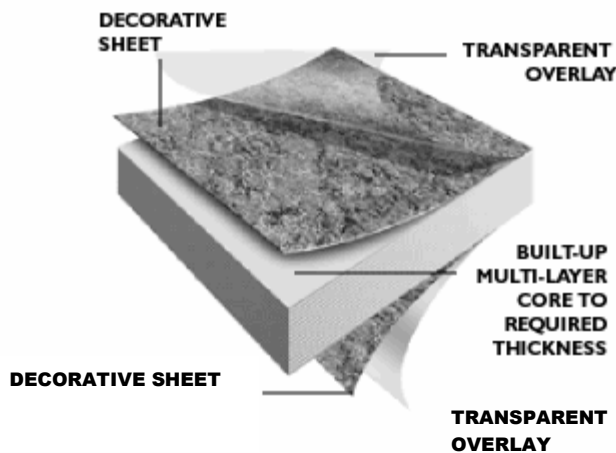


# ARBORITE® SOLID PHENOLIC CORE PANELS

---

## General

Arborite® Solid Grade laminate is a high pressure solid composite designed for laboratory work surfaces, fume hood decks, fume hood liner panels, pegboards (drying racks), reagent racks, commercial countertops, cabinet drawer fronts, locker drawers, shelving, window sills and toilet partitions, and decorative casework components. Solid phenolic panels provide exceptional chemical and stain resistance combined with superior physical characteristics.



Three categories of Solid Phenolic Core Panels include:

- 1) **Arborite® Classic Grade** – represent a category of thick, self-supporting homogeneous panels finished with melamine surfaces on both sides. Can be used for laboratory applications and casework where less harmful acids and other chemical products are used.
- 2) **Arborite® Laboratory Grade** - represent a category of thick, self-supporting homogeneous panels finished with melamine surfaces on both sides. They are engineered to resist a variety of acids, solvents, general reagents and cleaning agents.
- 3) **Arborite® Fire rated solid phenolic core panels** – Arborite® high pressure laminate with fire retardant properties are suitable for applications where fire retardant properties are required by building codes, i.e., elevator cabs, stairwells, public areas, and hospitals. This laminate is also suitable for all segments within the transportation industry.

## **Solid phenolic core panels (material specifications)**

- Decorative surfaces on both sides
- Non-asbestos
- Chemical and stain resistant (see list of chemicals and stains below)
- Non-porous
- Does not promote growth of common bacteria
- Durable and strong
- Resists corrosion
- Meets or exceeds performance standards set by NEMA LD3-2000 for Compact Laminate grade (CGS)
- Resistant to impact and stress cracking

## **Chemical Resistance Properties**

For further information regarding Arborite® chemical resistance properties for Solid Phenolic panels, please see list of chemicals below for both categories: **Arborite® Laboratory Grade and Arborite® Classic Grade.**

## ARBORITE® CLASSIC GRADE - Chemical Reagent Staining Effect

Acetic Acid (all concentrations).....	SL/E	Methyl Methacrylate .....	NE
Acetone .....	SL/E	Methyl Orange .....	NE
Ag Eosin Bluish 5% in Alcohol.....	NE	Methyl Red.....	NE
Alconox .....	NE	Mineral Oil.....	NE
Aluminon .....	NE	Monsel's Solution .....	NE
Ammonium Hydroxide (all concentrations).....	NE	Naphtha .....	NE
Ammonium Phosphate.....	NE	Naphtalene .....	NE
Amyl Acetate .....	SL/E	n-Hexane .....	NE
Amyl Alcohol .....	SL/E	Nigrosine.....	NE
Aqua Regia .....	SE	Nitric Acid (all concentrations).....	SE
Aromatic Ammonia .....	NE	Perchloric Acid (concentrated).....	SE
Benedict's Solution.....	NE	Petroleum Jelly.....	NE
Bromothymol Blue .....	NE	Phenol (all concentrations).....	NE
Butyl Alcohol.....	SL/E	Phenolphthalein.....	NE
Calcium Hypochlorite (concentrated) .....	NE	Phosphate Buffered Saline .....	NE
Camphorated para-chlorophenol.....	NE	Phosphoric Acid (all concentrations) .....	SE
Carbon Disulfide.....	SL/E	Picric Acid 1.2% (0.05M) .....	SE
Carbon Tetrachloride.....	SL/E	Pine Oil .....	NE
Cellosolve .....	NE	Potassium Permanganate.....	SE
Chlorobenzene .....	NE	Povidone Iodine .....	NE
Chloroform .....	NE	Procaine.....	NE
Chromic Trioxide.....	SE	Quaternary Ammonia Compounds.....	NE
Copper Sulfate .....	NE	Safranin O .....	NE
Cresol.....	NE	Silver Nitrate .....	SE
Cresol Red .....	NE	Sodium Azide.....	NE
Crystal Violet.....	NE	Sodium Chromate.....	NE
Dimethyl Formamide.....	NE	Sodium Hydroxide (all concentrations).....	ME
Dioxane.....	NE	Sodium Hypochlorite 5%.....	SL/E
EDTA.....	NE	Sodium Sulfide 15%.....	NE
Ethyl Acetate.....	SL/E	Sulfuric Acid (all concentrations) .....	SE
Ethyl Alcohol.....	NE	Sodium Thiocyanate .....	NE
Ethylene Glycol .....	NE	Sucrose 50%.....	NE
Eucalyptol .....	NE	Sudan III.....	NE
Formaldehyde .....	SL/E	Tannic Acid (sat.).....	SL/E
Formalin.....	SL/E	Tetrahydrofuran.....	NE
Formic Acid (all concentrations) .....	SE	Thymol & Alcohol .....	NE
Gasoline .....	NE	Thymol Blue .....	NE
Gentian Violet.....	ME	Tincture of Iodine.....	NE
Glacial Acetic Acid, 99% (concentrated).....	SL/E	Tincture of Mercurochrome .....	NE
Gram Stains .....	NE	Tincture of Merthiolate .....	NE
Hydrofluoric Acid 48% (concentrated).....	SE	Toluene .....	NE
Hydrochloric Acid (all concentrations).....	SE	Trichlorethane .....	NE
Hydrogen Peroxide 3%.....	NE	Trisodium Phosphate 30%.....	NE
Iodine.....	NE	Urea.....	NE
Karl Fischer Reagent.....	NE	Uric Acid (sat.).....	SL/E
Kerosene .....	NE	Vegetable Oils.....	NE
Lactated Ringers Solution.....	NE	Water.....	NE
Lysol™ .....	NE	Wright's Blood Stain.....	NE
Malachite Green.....	NE	Xylene.....	NE
Methanol.....	SL/E	Zephiran Chloride .....	NE
Methylene Blue.....	NE	Zinc Chloride .....	NE
Methylene Chloride .....	NE	Zinc Oxide Ointment.....	NE
Methyl Ethyl Ketone.....	NE		

Test procedure: Listed materials were placed in contact with Arborite® Classic Grade surface under 1" (25.4mm) diameter watch cover glass for 16-24 hours duration prior to evaluation for effect. The effects of staining are color and pattern dependent.

### Explanation of test results:

NE: No effect

SL/E: Slight effect

ME: Moderate effect

SE: Severe effect

Results may vary slightly by color. Request a sample for evaluation and chemical resistance testing. It is recommended that chemical spills be cleaned immediately to prevent or greatly reduce the effects caused by longer exposure.

# Arborite® Laboratory Grade - Chemical Reagent Staining Effect

---

## Acids:

Acetic Acid (all concentrations)  
Aqua Regia \*\*  
Chromic Trioxide (Chromic Acid Cleaning Solution)\*  
Formic Acid (all concentrations) \*  
Glacial Acetic Acid 99% (concentrated)  
Hydrochloric Acid (all concentrations)  
Hydrofluoric Acid 48% (concentrated) \*  
Nitric Acid (all concentrations) \*\*  
Perchloric Acid (concentrated)  
Phosphoric Acid (all concentrations)  
Picric Acid 1.2% (0.05M)  
Sulfuric Acid (all concentrations) \*\*  
Tannic Acid (sat.)  
Uric Acid (sat.)

## Solvents:

Acetone  
Amyl Acetate  
Amyl Alcohol  
Butyl Alcohol  
Carbon Disulfide  
Carbon Tetrachloride  
Chlorobenzene  
Chloroform  
Cresol  
Dimethyl formamide  
Dioxane  
EDTA  
Ethyl Acetate  
Ethyl Alcohol  
Formaldehyde  
Methanol  
Methyl Ethyl Ketone  
Methylene Chloride  
Naphthalene  
n-Hexane  
Phenol (all concentrations)\*  
Tetrahydrofuran  
Toluene  
Trichloroethane  
Xylene

## Bases:

Ammonium Hydroxide (all concentrations)  
Sodium Hydroxide (all concentrations) \*\*  
Sodium Sulfide 15%

## General Reagents:

Alconox (Lab. Detergent)  
Aluminon  
Ammonium Phosphate  
Aromatic Ammonia  
Benedict's Solution  
Blood  
Calcium Hypochlorite (concentrated)  
Camphorated para-chlorophenol \*  
Cellosolve  
Coffee, black  
Copper Sulfate  
Ether, 1:20  
Ethylene Glycol  
Eucalyptol  
Formalin  
Gasoline  
Hydrogen Peroxide 3%

Iodine  
Karl Fisher Reagent  
Kerosene  
Lactated Ringers  
Lysol™  
Methyl Methacrylate  
Milk, homogenized  
Mineral Oil  
Monsel's Solution (Ferric Subsulfate)  
Naphtha  
Orange juice  
Petroleum Jelly  
Phosphate Buffered Saline (PBS)  
Pine Oil  
Potassium Permanganate  
Povidone Iodine  
Procaine  
Quaternary Ammonia Compounds  
Silver Nitrate  
Sodium Azide  
Sodium Chromate  
Sodium Hypochlorite 5%  
Sodium Thiocyanate  
Sucrose 50%  
Thymol & Alcohol  
Tide™  
Tincture of Iodine  
Tincture of Mercurochrome  
Tincture of Merthiolate  
Trisodium Phosphate 30%  
Urea  
Vegetable Oil  
Vinegar  
Water  
Zephiran Chloride  
Zinc Chloride  
Zinc Oxide Ointment

## Stains and Indicators:

Ag Eosin Bluish 5% in Alcohol  
Bromothymol Blue  
Cresol Red  
Crystal Violet  
Gentian Violet 1%  
Gram Stains  
Malachite Green  
Methyl Orange  
Methyl Red  
Methylene Blue  
Nigrosine (India Ink)  
Phenolphthalein  
Safranin O  
Sudan III  
Thymol Blue  
Wright's Blood St

---

Test procedure: Listed materials were placed in contact with Arborite® Laboratory Grade surface under 1" (25.4mm) diameter watch cover glass for 16-24 hours duration prior to evaluation for effect. The effects of staining are color and pattern dependent. Request a sample for evaluation and chemical resistance testing

\* Causes slight change of gloss or color.

\*\*Causes slight damage, with degree of damage proportionate to length of exposure and concentration.

Other items leave no effect

**Arborite® Fire rated solid phenolic core panels**

Arborite® high pressure laminate with fire retardant properties are suitable for applications that require a Class A / Class I product.

**Certifications - SOLID PHENOLIC Fire Retardant (1/4" – 1 1/4")**

- UL
- Class 1

The basic standard to investigate products in this category is UL723, "Test for Surface Burning Characteristics of Building Materials"

**Performance Properties:**

Flame spread :        25  
Smoke developed:    200

**Available Surface Textures for Arborite® Classic Grade and Fire rated solid phenolic core panels**

- 1) *Cashmere* – a fine texture with a slight sheen
- 2) *Diamond* – a fine beaded texture which minimizes smudges, finger marks and offers optimum scratch resistance
- 3) *Gloss* \*– a flat texture with a high sheen
- 4) *Laqwood* – a slightly embossed woodgrain texture
- 5) *Velvutex* – a smooth furniture finish texture

<b>TEXTURES</b>	<b>SURFACE GLOSS VALUE *</b>
Cashmere – a fine, matte texture with a slight sheen	8-12
Diamond – a fine beaded texture which minimizes smudges, finger marks and offers optimum scratch resistance.	10-16
Gloss – a flat texture with a high sheen	90-110
Laqwood – a slightly embossed woodgrain texture	20-30
Velvutex – a smooth furniture finish texture	10-20

\* CAN3-A172-M79

**Available Surface Textures for Arborite® Laboratory Grade solid phenolic core panels**

- 1) *Matte* - fine, matte texture with a slight sheen
- 2) *Diamond* – a fine beaded texture which minimizes smudges and finger marks.

**Standard Panel Sizes for Solid Phenolic Core Panels:**

<b>IMPERIAL MEASURE (FEET)</b>	<b>METRIC MEASURE (MM)</b>
4' x 8'	1220 mm x 2440 mm
4' x 10'	1220 mm x 3050 mm
5' x 8'	1525 mm x 2440 mm
5' x 10'	1525 mm x 3050 mm
5' x 12'	1525 mm x 3660 mm

\* Gloss Surface Texture is only available in 4' x 8', 4' x 10', 5' x 12' (guaranteed good one side only)

**Nominal Panel Thickness\* Solid Phenolic Core Panels:**

<b>Imperial Measure (In.)</b>	<b>Metric Measure (Mm)</b>	<b>Thickness Tolerance</b>	<b>Lbs/Sq.Ft</b>
1/8"	3.2 mm	± 0.012"	0.9
1/4"	6.4 mm	± 0.0125"	1.81
3/8"	9.6 mm	± 0.0187"	2.72
1/2"	12.7 mm	± 0.025"	3.62
5/8"	15.9 mm	± 0.0312"	4.53
3/4"	19.0 mm	± 0.037"	5.40
1"	25.4 mm	± 0.050"	7.24
1 ¼ "	32.0 mm	± 0.0625"	9.00

\* *thickness tolerance according to NEMA LD3-2000 for 2000 for Compact Laminate grade (CGS)*

**NEMA Performance Properties of Solid Phenolic Core Panels (CGS) - Arborite® meets or exceeds these values**

<b>ASTM TEST METHOD</b>	<b>NOMINAL THICKNESS</b>	<b>UNITS: MM / INCHES</b>	<b>COMPACT LAMINATE</b>	
			<b>&gt;6.0 mm (&gt;0.236")</b>	<b>2.0-6.0 mm (0.079" – 0.236")</b>
D 790	Flexural Strength	MPa (psi) MD Min.	1.24 x 10 <sup>2</sup> (18000)	1.24 x 10 <sup>2</sup> (18000)
		MPa (psi) CD Min.	8.27 x 10 <sup>1</sup> (12000)	8.27 x 10 <sup>1</sup> (12000)
D 790	Flexural Modulus (Modulus of Elasticity)	MPa (psi) MD Min.	1.10 x 10 <sup>4</sup> (1.6 x 10 <sup>6</sup> )	1.10 x 10 <sup>4</sup> (1.6 x 10 <sup>6</sup> )
		MPa (psi) CD Min.	9.65 x 10 <sup>3</sup> (1.4 x 10 <sup>6</sup> )	9.65 x 10 <sup>3</sup> (1.4 x 10 <sup>6</sup> )
D 638	Tensile Strength	MPa (psi) MD Min.	1.24 x 10 <sup>2</sup> (18000)	1.24 x 10 <sup>2</sup> (18000)
		MPa (psi) CD Min.	8.27 x 10 <sup>1</sup> (12000)	8.27 x 10 <sup>1</sup> (12000)

**NEMA Performance Properties for ARBORITE® CLASSIC GRADE ONLY  
(Arborite® meets or exceeds these values)**

PROPERTY	GRADE**  UNITS	COMPACT LAMINATE	
		>6.0 mm (± 5% of thickness) >0.236" (± 5% of thickness)	2.0-6.0 mm (± 0.30 mm) 0.125" - 0.236" (± 0.012")
Light Resistance	Rating, * Min.	SL	SL
Cleanability	Rating, * Max.	20	20
Stain 1-10 Stain 11-15	Rating, * Min.	NE M	NE M
Boiling water resistance	Rating, * Min.	NE	NE
High Temperature Resistance	Rating, * Min.	SL	SL
Ball Impact Resistance	mm (in.) Min.	1900 (75)	1900 (75)
Radiant Heat Resistance	Sec., Min.	200	200
Dimensional Change	% MD, Max	0.3	0.3
	% CD, Max	0.7	0.7
Room Temperature Dimensional Stability	% MD, Max	0.3	0.3
	% CD, Max	0.7	0.7
Wear Resistance	Cycles, Min.	400	400

\* Rating system: NE – no effect, SL – slight effect, M – moderate effect, S – Severe Effect

\*\* Grade designations are not acronyms



**Limitations:** Arborite® Laboratory Grade and Arborite® Classic Grade panels offer special protection for all kinds of laboratory work surfaces. However, no one material is suitable for all possible conditions; its properties should be checked for suitability under the specific conditions of each installation. The information provided herein is not intended for or to guarantee specific properties.

## **Care and Maintenance**

To clean solid grade laminate surfaces, simply wipe with a soft damp cloth and mild detergent; then rinse thoroughly with warm water and wipe dry. For stubborn stains, use an all-purpose cleaner, with a damp cloth; then rinse thoroughly with warm water and wipe dry.

For really tough stains, create a paste composed of baking soda and water. Using a soft brush, scrub gently in a circular motion – 10 to 20 strokes should remove most stains; then rinse thoroughly with warm water and wipe dry. Keep in mind that excessive scrubbing can dull or damage the finish.

## Installation

Generally, the principles applicable to the installation of decorative laminate work will also apply to the installation of **Arborite®** Solid Grade laminate.

Solid Grade **Arborite®** decorative laminate can be cut, drilled and machined by standard wood-working equipment fitted with carbide cutting edges.

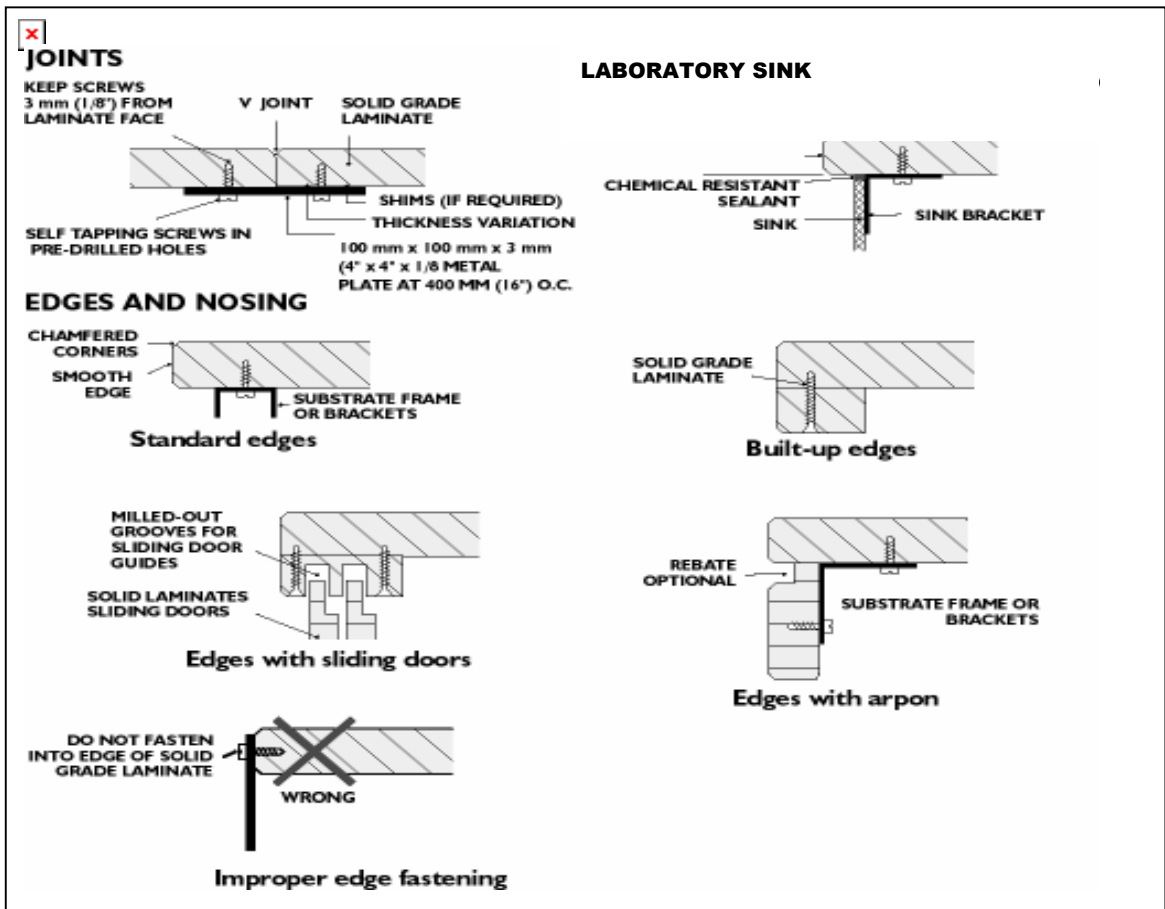
Surface mounted objects should be secured into the face or back of the laminate using self-tapping screws in pre-drilled holes. **IMPORTANT NOTE: D not screw into the edges of Solid Grade laminate.**

Leveling at joints should be done using shims on the underside if necessary. Do not use splines in the edges.

Metal brackets or retaining clips are recommended for securing the laminate panels together, and to abutting surfaces.

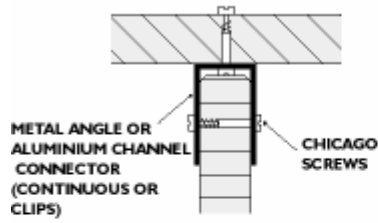
To secure counters to cabinets and provide liquid proof butt joints, a two part epoxy or silicone sealant can be used.

The following detailed drawings indicate the basic principles for installing **Arborite®** Solid Grade decorative laminate.

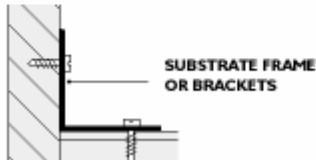




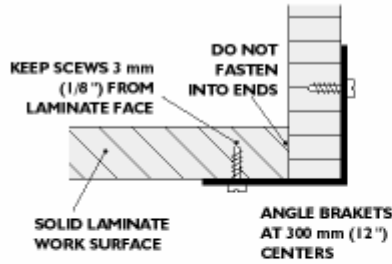
### INTERSECTIONS



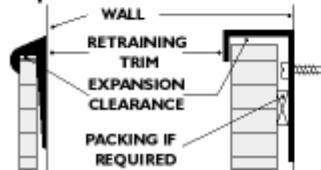
Tee intersection



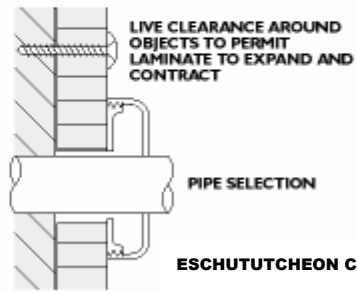
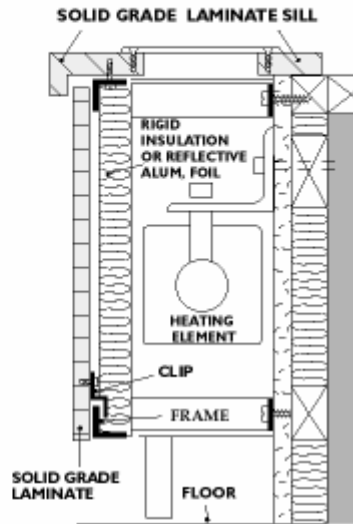
Outside corner



### Backsplashes



### HEATING ENCLOSURE, WINDOW SILL

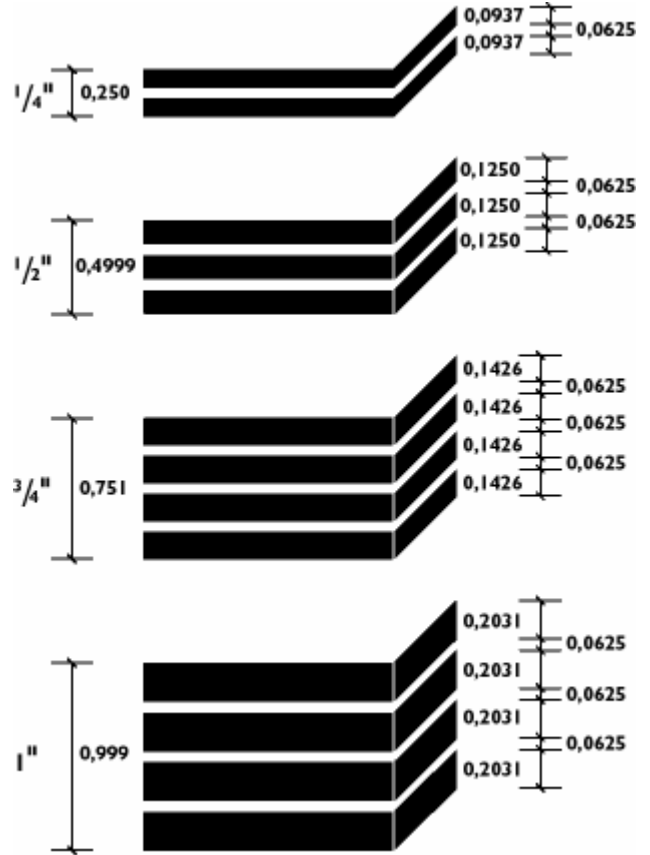


Pass-thru object

## SPECIALTY PRODUCT - CANDYSTRIPE DECORATIVE LAMINATE

Candystripe is a multi-layered solid grade laminate of alternating colored and black lines.

Surface colors available include the complete Arborite® standard color collection, and the alternating colored lines are available in Arborite's standard solid color range.



### Available Surface Textures for Arborite® Candystripe Laminate

- 1) *Cashmere* – a fine, matte texture with a slight sheen
- 2) *Diamond* – a fine beaded texture which minimizes smudges, finger marks and offers optimum scratch resistance
- 3) *Gloss* – a flat texture with a high sheen
- 4) *Laqwood* – a slightly embossed woodgrain texture
- 5) *Velvatex* – a smooth furniture finish texture

### Standard Panel Sizes for Arborite® Candystripe Laminates

IMPERIAL MEASURE (FEET)	METRIC MEASURE (MM)
4' x 8'	1220 mm x 2440 mm
4' x 10'	1220 mm x 3050 mm
5' x 8'	1525 mm x 2440 mm
5' x 10'	1525 mm x 3050 mm
5' x 12'	1525 mm x 3660 mm

\* Gloss Surface Texture is only available in 4' x 8', 4' x 10', 5' x 12' (guaranteed good one side only)

## Warranty

Arborite, division of ITW Canada, warrants that, under normal use and service, the material and workmanship of its products shall conform to the standards set forth on the applicable technical data sheets for a period of twelve (12) months from the date of sale to the first consumer purchaser. Dealers and distributors are provided with the technical data sheets which contain specific standards of performance for the products. In the event that an **Arborite** product does not perform as warranted, the first purchaser's sole remedy shall be limited to repair or replacement of all or any part of the product which is defective, at the manufacturer's sole discretion.

This warranty applies only to product :

1. In its original installation; and
2. Purchased by the first consumer purchaser.

This warranty is not transferable, and expires upon resale or transfer by the first consumer purchaser.

This warranty shall not apply to defects or damage arising from any of the following :

1. Accidents, abuse or misuse;
2. Exposure to extreme temperature;
3. Improper fabrication or installation; or
4. Improper maintenance.

**NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE MADE. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR ANY LOSS OR DAMAGE ARISING FROM THE PURCHASE, USE OR INABILITY TO USE THIS PRODUCT, OR FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. NO FABRICATOR, INSTALLER, DEALER, AGENT OR EMPLOYEE OF ARBORITE, A DIVISION OF ITW CANADA, HAS THE AUTHORITY TO MODIFY THE OBLIGATIONS OR LIMITATION OF THIS WARRANTY.**

**This warranty gives you specific legal rights, and you may also have other rights which vary from state to state; therefore, some of the limitations stated above may not apply to you. It is to your benefit to save your documentation upon purchase of a product.**