TECHNICAL DATA
Arborite® Compact Laboratory Grade

Division de/of Wilsonart Canada ULC
385 Lafleur, Lasalle, Québec
Canada, H8R 3H7
www.arborite.com

1. Manufacturing facility location

80 L a White Dr
Fletcher, NC
28732, USA

2. Product Description

Recommended Uses

Compact Laminate is a high pressure solid composite designed for laboratory work surfaces, toilet partitions, wall panels, fume hood decks, fume hood liner panels, pegboards (drying racks), reagent racks, commercial countertops, cabinet drawer fronts, locker drawers, shelving, window sills, decorative casework components and other interior applications. Compact Laminate provides superior impact, fire-rated, chemical and stain resistance.

Compact Laboratory Grade – Thick panels engineered to resist a variety of acids, solvents, general reagents and cleaning agents. Thickness range - ¼" to 1". Laboratory Grade panels are guaranteed good one side only.

For Arborite's Compact Classic, Fire-Rated and Solid Phenolic Backer grades, please refer to the Arborite's Compact Grades Laminates tech data sheet.

Product Composition

Decorative surface papers impregnated with melamine resins are pressed over kraft paper core sheets impregnated with phenolic resin. These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300◦F (149◦C).

Basic Limitations

Compact Laboratory Grade panels offer special protection for many work surface applications. These product types are designed for interior applications. However, no one material is suitable for all possible conditions; its properties should be checked for suitability under the specific conditions of each application. The information provided herein is not intended for or to guarantee specific properties.

Patterns & Colors

Compact Laboratory Grade Laminate is available in the following patterns:

P500	P585	P886	P999	S405	S406	S407	S431
S463	S466	S486	S513	W548	W550	W403	W405
EB405	EB548	EB550					

Due to resin composition, a slight color-shift can occur in Compact Laboratory Grade panels. Please request a sample for color confirmation.

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Finishes

MA Finish - A matte texture designation for chemical resistant only. *Nominal Glossometer Reading = 20*
MC Finish - Electron beam surface. *Nominal Glossometer Reading = 13*

Finish	Compact Grade Available	Minimum	Special Requirements
MA	Laboratory	1 sheet	Available in Arborite® 16 limited patterns
MC	Laboratory	1 sheet	Black (EB405), Grey (EB548), White (EB550)

Standard Panel Sizes

Compact Grade	Imperial Measure (Feet)	Metric measure (mm)	Finish Availability
Laboratory	4' x 8'	1220 mm x 2440 mm	MA, MC
Laboratory	4' x 10'	1220 mm x 3050 mm	MA, MC
Laboratory	5' x 8'	1525 mm x 2440 mm	MA, MC
Laboratory	5' x 10'	1525 mm x 3050 mm	MA, MC
Laboratory	5' x 12'	1525 mm x 3660 mm	MA, MC

Design and Finish	Compact Grade Available	Minimum	Sheet Sizes
16 limited patterns-MA	Laboratory	1 sheet	4’x8’,4’x10’, 5’x8’, 5’x10’, 5’x12’
Black (EB405)-MC	Laboratory	1 sheet	4’x8’,4’x10’, 5’x8’, 5’x10’, 5’x12’
Grey (EB548)-MC	Laboratory	1 sheet	5’x8’, 5’x10’, 5’x12’
White (EB550)-MC	Laboratory	1 sheet	5’x8’, 5’x10’, 5’x12’

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Nominal Panel Thicknesses*

Product Type & Finish	Compact Grade	Imperial Measure (Inches)	Description	Metric Measure (Mm)	Thickness Tolerance	Lbs/ Sq.Ft
S025-MA	Laboratory	1/4" (0.250")	Double Faced	6.35 mm	± 0.0125" (0.32mm)	1.81
S031-MA	Laboratory	5/16" (0.312")	Double Faced	7.92 mm	± 0.0156" (0.40mm)	2.26
S038-MA	Laboratory	3/8" (0.375")	Double Faced	9.52 mm	± 0.0187" (0.47mm)	2.72
S050-MA	Laboratory	1/2" (0.500")	Double Faced	12.7 mm	± 0.025" (0.64mm)	3.62
S075-MA	Laboratory	3/4" (0.750")	Double Faced	19.0 mm	± 0.037" (0.94mm)	5.40
S100-MA	Laboratory	1" (1.00")	Double Faced	25.4 mm	± 0.050" (1.27mm)	7.24
S025-MC	Laboratory	1/4" (0.250")	Double Faced	3.17 mm	±0.012" (0.30mm)	1.81
S031-MC	Laboratory	5/16" (0.312")	Double Faced	6.35 mm	± 0.0125" (0.32mm)	2.26
S038-MC	Laboratory	3/8" (0.375")	Double Faced	7.92 mm	± 0.0156" (0.40mm)	2.72
S050-MC	Laboratory	1/2" (0.500")	Double Faced	9.52 mm	± 0.0187" (0.47mm)	3.62
S075-MC	Laboratory	3/4" (0.750")	Double Faced	12.7 mm	± 0.025" (0.64mm)	5.40
S100-MC	Laboratory	1" (1.00")	Double Faced	19.0 mm	± 0.037" (0.94mm)	7.24

**Note: thickness tolerance according to ISO 4586-4 for Compact Laminate grade (CGS)*

3. Physical Properties

Sample	Test Method	Units	Scale	Arborite Lab Grade MA	Arborite Lab Grade MC
SEFA 3 stain (24 hr. stain)	SEFA 3	Pass/Fail	Pass/Fail	Pass	Pass
Number of Level 3 effects	SEFA 3	Numerical Rating	Maximum of 4 level 3	0	0
Scratch resistance	EN438-2:25	N	1 to 5 (5 best)	≥4	≥5
Resistance to Wear	EN438-2:10	Cycles	Cycles	≥ 450	≥ 400
Resistance to Impact	EN438-2:21	Indentation diameter, mm	Max of 10mm	0	0
		Height, mm	Measurement of distance	1800	>1800
Resistance to Dry Heat	EN438-2:16	Rating (min)	1 to 5 (5 best)	≥ 2	≥ 5
Resistance to Wet Heat	EN12721	Rating (min)	1 to 5 (5 best)	≥ 3	≥ 5

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Sample	Test Method	Units	Scale	Arborite Lab Grade MA	Arborite Lab Grade MC
Boiling Water Immersion	EN438-2:12	Appearance	1 to 5 (5 best)	≥ 2	≥ 5
Dimensional Stability	EN438-2:17	Cumulative change (%)	Percent Change	≤0.1	≤0.1
Resistance to Water Vapor	EN438-2:14	Rating	1 to 5 (5 best)	≥3	≥5
Resistance to Cigarette Burn	EN438-2:30	Rating	1 to 5 (5 best)	≥5	≥5
Resistance to Crazing	EN438-2:24	Grade	1 to 5 (5 best)	≥5	≥5
Modulus of Elasticity	EN ISO 178/ASTM 638-08	Mpa	>11000	≥15,000	≥12,000
Modulus of Elasticity	EN ISO 178/ASTM 638-09	psi	> 1,400,000	>2,200,000	>1,776,000
Flexural Strength (MD)	EN ISO 178/ASTM 790-07	Mpa	> 114.0	≥150	≥210
Flexural Strength (CD)	EN ISO 178/ASTM 790-08	Mpa	>82.7	≥120	≥170
Tensile Strength (MD)	EN ISO 527-2/ASTM 638-08	Mpa	> 114.0	≥150	≥230
Tensile Strength (CD)	EN438-2:25	Mpa	>82.7	≥150	≥140
Density	EN ISO 1183/ASTM 792-08	g/cm2		> 1.34	> 1.34
Light Fastness	EN438-2:27	Blue wool scale	Min of 4 to 5	> 5	> 6
ISO 4586-2 Method 33	Light Resistance	4	Visual	≥ 4	≥4
ISO 4586-2 Method 31	Resistance to staining	20 Max Rating	Visual	44	20
ISO 4586-2 Method 31	Stains 1-10	5	Visual	5	5
ISO 4586-2 Method 31	Stains 11-15	3	Visual		
ISO 4586-2 Method 42	Resistance to Wet Heat	Rating (min)	Visual	3	5

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Sample	Test Method	Units	Scale	Arborite Lab Grade MA	Arborite Lab Grade MC
ISO 4586-2 Method 18	Resistance to Dry Heat	Rating (min)	Visual	5	5
ISO 4586-2 Method 25	Resistance to Impact by Large Diameter Ball	Height mm	Visual	5	1/4" ≥ 1800mm
				1/4" ≥ 800 mm	1/2" ≥ 1800mm
				1/2" ≥ 1800 mm	3/4" ≥ 1800mm
ISO 4586-2 Method 19	Dimensional Change MD	% MD Max	% Change	3/4"≥ 800 mm	0.4
	Dimensional Change CD	% CD Max	% Change	0.4	0.8
ISO 4586-2 Method 11	Resistance to Surface Wear	Revolutions	Min Value 350	0.8	≥ 400
Fire Properties	ASTM E-84			≥ 400	1" = Class B
Warpage		On products >3/8"	Maximum of 1/4"	Maximum of 1/4"	Maximum of 1/4"
Screw Hold Strength	**1/4"**	Pounds (N)		Maximum of 1/4"	≥ 500 (≥2000)
	3/8"	Pounds (N)		≥ 500 (≥2000)	≥ 900 (≥4000)
	1/2"	Pounds (N)		≥ 900 (≥4000)	≥ 1300 (≥5000)
	3/4"	Pounds (N)		≥ 1300 (≥5000)	≥ 1900 (≥8000)
	1"	Pounds (N)		≥ 1900 (≥8000)	≥ 2000 (≥8500)

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SEFA Rating Scale	Description
0	No detectable Change
1	Slight Change in color or gloss
2	Slight Surface etching or severe staining
3	Pitting, cratering, swelling, erosion of coating, obvious & significant deterioration

Sample	**Arborite Classic Grade**	**Arborite Lab Grade MA**	**Arborite Lab Grade MC**
Pass/Fail	Pass	Pass	Pass
# of Severe Stains (3)	3	0	0
Amyl Acetate	0	0	0
Ethyl Acetate	1	1	1
Acetic Acid 89%	0	0	1
Acetone	1	1	1
Acid Dichromate, 5%	2	0	1
Butyl Alcohol	0	0	0
Ethyl Alcohol	0	0	0
Methyl Alcohol	0	0	0
Ammonium Hydroxide, 28%	0	1	0
Benzene	0	1	1
Carbon Tetrachloride	0	0	1
Chloroform	1	1	0
Chromic Acid, 60%	1	1	0
Cresol	0	1	1
Dichloroacetic Acid	1	1	1
Dimethyl Formamide	0	1	1
Dioxane	0	1	1
Ethyl Ether	0	0	1
Formaldehyde, 37%	0	0	0
Formic Acid, 90%	2	1	1
Furfural	0	1	1
Gasoline	0	0	0
Hydrochloric Acid, 37%	2	0	0
Hydrofluoric Acid, 48%	2	1	1
Hydrogen Peroxide, 30%*	2	0	0
Tincture of Iodine	0	0	0
Methyl Ethyl Ketone	1	0	0
Methylene Chloride	1	1	0
Monochlorobenzene	0	0	1
Naphthalene	0	0	0
Nitric Acid, 20%	3	0	0
Nitric Acid, 30%	3	0	0
Nitric Acid, 70%	3	1	0
Phenol, 90%	1	1	0
Phosphoric Acid, 85%	2	0	0
Silver Nitrate, Saturated**	1	0	0
Sodium Hydroxide, 10%	1	0	0
Sodium Hydroxide, 20%	1	0	0
Sodium Hydroxide, 40%	1	1	1
Sodium Hydroxide, Flake	1	1	1
Saturated Sodium Sulfide	0	1	0
Sulfuric Acid, 33%	2	0	0

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SEFA Rating Scale	Description		
0	No detectable Change		
1	Slight Change in color or gloss		
2	Slight Surface etching or severe staining		
3	Pitting, cratering, swelling, erosion of coating, obvious & significant deterioration		
Sample	**Arborite Classic Grade**	**Arborite Lab Grade MA**	**Arborite Lab Grade MC**
Pass/Fail	Pass	Pass	Pass
# of Severe Stains (3)	3	0	0
Sulfuric Acid, 77%	2	1	1
Sulfuric Acid, 96%	2	1	1
Equal Nitric and Sulfuric Acids	2	1	1
Toluene	0	0	1
Trichloroethane	1	1	0
Xylene	0	1	0
Saturated Zinc Chloride	0	0	0
Note: The color of the samples tested were black			

Note: All SEFA and EN438 testing were performed on Compact laminate with a black decorative surface

Branded Cleaner and Sanitizer Resistance for Arborite® Compact Laboratory Grade.
No effect was exhibited except as noted (* or **) on the following:

1. Clorox Healthcare Bleach Germicidal Cleaner
2. Clorox Healthcare Versa Sure Cleaner Disinfectant Wipes
3. Oxivir TB
4. Oxivir 1
5. Virex II 256
6. Benefect
7. PDI Super Sani-Cloth Germicidal Disposable Wipes
8. PDI Sani-Prime Germicidal Spray
9. Expose II 256
10. Stride Floral Neutral Cleaner
11. PURELL Advanced Instant Hand Sanitizer

Test procedure: Listed materials were placed in contact with Arborite® Compact Laboratory Grade surface under 1" (25.4mm) diameter watch cover glass for 16 hours duration prior to evaluation for effect. The branded cleaners and sanitizers listed above were cleaned with water only.

* *Causes slight change of gloss or color.*
*** Causes slight damage, with degree of damage proportionate to length of exposure and concentration.*

Core Color
Laboratory Grade panels are produced with a black core as the standard offering in ¼" to 1" thicknesses.

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4. Fabrication

Compact Laminate panels can be cut, drilled and machined using standard wood-working equipment fitted with carbide cutting edges. Rough cuts can be made with carbide tip blades typically 62 tooth or greater on a table saw or Kane saw.

To achieve a clean edge, routers with ¼" or ½" shaft, with 2 flute carbide blades can be used to remove rough edges. CNC routers typically will run at 10,000 to 18000 RPM's at 150 to 900 inches per minute. (Dependent on thickness of panel and type of cut). It is common to run 10,000 RPM's at 200 inches per min on ½" and ¾" material.

Final sanding, of the edge, can be achieved with an orbital sander

Matte Finish	Satin Finish	Semi-Gloss Finish
100u	100u	100u
80u	80u	80u
60u	60u	60u
	1000 Mirka Abralon	1000 Mirka Abralon
		2000 Mirka Abralon

Installation

Generally, the principles applicable to the installation of decorative laminate work, will also apply to the installation of Compact Laminate panels.
Surface mounted objects should be secured into the face or back of the laminate using self-tapping screws in pre-drilled holes. IMPORTANT NOTE: Care needs to be taken when screwing into the edge of the Compact Laminate. Using the appropriate drill diameter and screw size/quality is important. Leveling at joints can be done using shims on the underside if necessary. 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, and two part urethane or silicone sealant can be used.

5. Warranty

6. Maintenance

7. Technical Services

For samples, literature, questions or technical assistance, please email us at info@aborite.com or contact our toll-free number, 1-800-996-0366 Monday through Friday, 8:30 am – 5:00 pm, EST.