

Manufacturer

Arborite
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Product Description

Product Description & Recommended Uses:

Arborite® Metal Core Laminate is a high-pressure decorative laminate product designed for interior surfaces requiring high strength, fire and heat resistance, ease of maintenance, and design flexibility. When bonded to the appropriate substrate, Arborite® Metal Core is ideal for use as wall, ceiling, and door panels in mass transit, marine, and other light industrial and/or commercial applications.

Product Composition:

Arborite® Metal Core Laminate is high-pressure decorative laminate produced by thermally fusing melamine and phenolic impregnated papers to an aluminum core at pressure greater than 1000 pounds per square inch at temperatures approaching 300 °F (149 °C).

Arborite® Metal Core Laminate is manufactured in five standard thicknesses with either AnoGrip™ precleaned aluminum or sanded aluminum. Standard alloy and hardness of the aluminum used in Metal Core is 5052-H32. Non-standard aluminum sizes, thicknesses, alloys, hardnesses are available on special order, subject to approval by the manufacturer. Please contact Arborite for further information.

Basic Limitations:

Arborite® Metal Core Laminate is intended for interior use only and should be protected from continuous exposure to direct sunlight and weathering.

Arborite® Metal Core is not a structural material and must be bonded to a suitable substrate (see section 4). It should not be used as direct covering for plaster or concrete walls or for gypsum wallboard. It should not be used as a cutting surface.

The decorative face of Arborite® Metal Core Laminate should not be exposed to flame, molten metal, metallic sparks or temperatures greater than 356 °F (180 °C). Additionally, exceeding a temperature of 250 °F, for long periods of time, can result in separation between the laminate and the aluminum. Maximum temperature is dependent on length of press time or exposure.

Pattern Availability:

Metal Core is available in most **Arborite** and **Wilsonart** designs.

Please verify pattern, size and finish availability.

Minimum order quantities and up-charges may apply.

Finishes:

- **#59** Non-directional, non-glare texture. *Glossometer reading: MD and CD 16 ± 2.*

NOTE: Glossometer readings are made at a 60° angle of incidence. MD means the machine direction of a laminate sheet and CD refers to the cross direction.

Sheet Dimensions

Sizes Available (not available in all product types)				
4' x 8' 1219mm x 2438mm	4' x 10' 1219mm x 3048mm	5' x 8' 1524mm x 2438mm	5' x 10' 1524mm x 3048mm	5' x 12' 1524mm x 3048mm

***3' widths and other sizes available on a 'special order' basis**

Sheet Tolerance

±1/4"

Product Offering

Type	Aluminum Core	Overall	Weight PSF
Type 953 Aluminum core	0.025" (0.635mm)	0.038" ± 0.004" (0.965mm ± 0.101mm)	0.51#
Type 958 Aluminum core	0.050" (1.27mm)	0.063" ± 0.005" (1.60mm ± 0.101mm)	0.87#
Type 960 Aluminum core	0.063" (1.6mm)	0.076" ± 0.005" (1.93mm ± 0.101mm)	1.057#
Type 964 Aluminum core	0.080" (2.032mm)	0.093" ± 0.004" (2.362mm ± 0.101mm)	1.185#
Type 965 Aluminum core	0.090" (2.286mm)	0.103" ± 0.004" (2.692mm ± 0.101mm)	1.366#

Note: Type 953 is typically manufactured with oversized aluminum with filed edges which can result in as much as an additional 2" in length and width. If net sized aluminum is used or sheared, sheets may be +/- 1/4" in length or width.

Minimum Order Quantity:

Stocked aluminum core: 2 sheets per size and product type. Orders must be placed in increments of 2, i.e., 2, 4, 6 etc.

Special Order aluminum core: As required by the aluminum distributor.

NOTE: Sheet size availability is dependent on inventory on hand by specific aluminum thickness. Please consult your Arborite sales representative for additional details.

Standard Size Availability

Product Type	Aluminum Thickness	Sheet Sizes				
		4'x8'	4'x10'	5'x8'	5'x10'	5'x12'
953	0.025"	Stock	Stock	Stock	Stock	*
958	0.050"	Stock	*	*	*	*
960	0.063"	*	*	*	*	*
964	0.080"	*	*	*	*	*
965	0.090"	*	*	*	*	*

For orders of 50 sheets or more, please confirm availability

* Sizes with an asterisk are non-stock items and may require minimum order quantities, manufactures lead times and price quotations.

Technical Data

National Electrical Manufacturers Association (NEMA) is the nationally recognized standards organization for high-pressure decorative laminate. NEMA standards have not been established for metal-backed decorative laminate. NEMA LD3-2005 testing procedures were used to obtain the following data:

Typical Physical Properties of Arborite® Metal Core Laminate

NEMA Test	NEMA HGS Requirements	Results
Surface Wear Resistance	400 cycles (min)	700 cycles
Boiling Water Resistance	No effect	No effect
High Temperature Resistance	Slight effect	No effect
Radiant Heat Resistance	125 seconds (min)	No effect – test stopped after 10 minutes of exposure
Conductive Heat Resistance	N/a	No effect
Scuff Resistance	N/a	No effect
Dimensional Stability machine direction	0.5% (max)	No measurable change
cross direction	0.8% (max)	No measurable change
Cleanability	20 cycles (max)	10 cycles
Light Resistance	Slight effect	Slight effect
Impact Resistance Supported 70" (1524mm) to end point Unsupported 144" (3657.6mm)		No cracks but surface dented
Special Test		Results
Moisture Absorption		Less than 1%
High Temperature/High Humidity 100° F (38° C), 100% RH		No loss of adhesion after 10 days in test environment

Fire Test Data

Arborite® Metal Core Laminates are classified under Underwriters Laboratories File R 5434 for Flame Spread Index and Smoke Developed Index in accordance with UL 723/ASTM E 84 (Steiner Tunnel) procedures in unbonded and bonded conditions.

The values are as follows:

Test	Unbonded	Bonded
Flame Spread	15	15
Smoke Developed	5	5

Note: ULC (Canada) Flame Spread is 20 and Smoke Developed is 5.

Note: Bonded material was adhered to ¼" inorganic reinforced cement board with WA 800 Adhesive.

Typical Transit Test Data

Arborite® Metal Core laminate meets the applicable requirements set forth in *NFPA 130 Fixed Guideway Transit Systems*. The following data is representative of the performance of Arborite/Wilsonart® Metal Core Laminate in fire and physical testing generally recognized and required in the transit industry:

Test Method	Results
ASTM E 162 Surface Flammability of Materials Using a Radiant Heat Energy Source	Is ≤ 5
ASTM E 662 Specific Optical Density of Smoke Generated by Solid Materials	Ds(1.5) < 10 Ds(4.0) < 75 Dm(corr) < 100
ASTM E 1354 Cone Calorimeter Caloric Content	500 Btu/lb
SMP 800-C Toxicity	Call for results
BSS 7239 Toxicity	Call for results
ASTM D 638 Tensile Strength Machine Direction Cross Direction	24,000 psi 21,500 psi
ASTM D 638 Modulus of Elasticity Machine Direction Cross Direction	6.3 x 10 ⁶ psi 6.3 x 10 ⁶ psi
ASTM D 790 Flexural Strength Machine Direction Cross Direction	28,000 psi 27,000 psi
ASTM D 790 Modulus of Elasticity Machine Direction Cross Direction	4.0 x 10 ⁶ psi 3.7 x 10 ⁶ psi
ASTM D 952 Internal Bond Strength	2600+ psi

The GREENGUARD Environmental Institute™ has awarded its GREENGUARD Indoor Air Quality Certification to Wilsonart Laminate. All Wilsonart Laminate product types were tested under the stringent GREENGUARD Standards for low-emitting products. All GREENGUARD Indoor Air Quality Certified® products ensure minimal impact on the indoor environment. For a copy of the certificate, visit www.greenguard.org.

Installation: Fabrication and Assembly Recommendations

Assembled pieces should meet the specifications of KCMA (Kitchen Cabinetmakers Manufacturers Association) ANSI-161.2-1998 (revised) and "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program" guidelines of the Architectural Woodwork Institute where applicable.

Substrates

Arborite® Metal Core Laminate must be bonded to a substrate of reliable quality and appropriate fire rating. Suitable substrates for Wilsonart® Metal Core Laminate are particleboard, fiberboard, plywood, solid wood, Nomex® paper or aluminum honeycomb, or composition board of reliable quality.

Adhesives

Arborite® Metal Core Laminate should be bonded to appropriate substrates with permanent type adhesives following the techniques recommended by the adhesive manufacturer. Recommended adhesives included specialized PVAs, epoxies, or contact cement.

Methods

The face and backing laminates and the substrate should be conditioned in the same environment for 48 hours prior to fabrication to ensure an appropriate moisture balance. Recommended acclimation conditions are 75° F (24° C) and 50% relative humidity.

To avoid stress cracking, do not use square-cut inside corners. All inside corners should have a minimum of 1/8" (3.18mm) radius and all edges should be routed smooth. Stress cracking at door or window cutouts due to torque or flex is virtually nonexistent with Metal Core Laminate when fabricated in this manner.

Metal Core Laminate may be sized with power shears (such as Bosch 16-gauge Unishear, Model 1500) prior to fabrication. The decorative face should be face up and protected from damage while the sheet is being cut. After cutting, edges may need to be lightly filed.

Product Type 953, Metal Core Laminate, may be cold-formed using roll forming equipment to an inside radius of 2 inches (51mm) and an outside radius of 4 inches (102mm). **They should not be heat formed.**

Oversized holes should be drilled for screws or bolts. Screws or bolts should be slightly countersunk into the face of the laminate-clad substrate.

Caution: The decorative face of Metal Core Laminate is thin, and the core is aluminum. This can create a surface that is a conductor of electricity. Unintentional exposure to an electrical current can cause an electrical shock.

Warranty

Arborite, a division de/of ITW Canada, warrants that, under normal use and service, this 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 that contain specific standards of performance for the products. In the event that this 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 that 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 for 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 WILSONART INTERNATIONAL, INC. 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, HAS THE AUTHORITY TO MODIFY THE OBLIGATIONS OR LIMITATIONS OF THIS WARRANTY.

This warranty gives you specific legal rights, and you also may have other rights that 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.

1. Maintenance*

The decorative surface may be cleaned with warm water and mild soaps, such as those used for hands or dishes. Do not use cleansers that contain abrasives, acids, or alkalis; they will damage the decorative surface. Stubborn stains may be removed with a 2-minute exposure to hypochlorite bleach such as Clorox®, followed by a clean water rinse.

We recommend that you **not** allow any of the following reagents to **remain** in contact with the decorative surface:

1. Hypochlorite bleach, except as described above
2. Hydrogen peroxide solution
3. Mineral acids, hydrochloric acid such as Lime-A-Way™, sulfuric or nitric acid
4. Caustic solutions containing greater than 2% lye, such as Drano®
5. Sodium bisulfate, such as Sani-Flush®
6. Potassium permanganate
7. Berry juices
8. Silver nitrate, in 1% concentration
9. Gentian violet
10. Mild silver protein, such as 20% Argyrol
11. Bluing
12. Fabric dye, such as Tintex® or Rit®
13. Alcohol containing 1% iodine in solution

Technical Services

For samples, literature, questions or technical assistance, please contact your Arborite sales representative.

Specification Form:

Surface shall be Arborite® Metal Core Laminate, with Wilsonart or Arborite designs, produced by Arborite a division of ITW.

Type: Metal Core Laminate, Types 953, 958, 960, 964 & 965

Product Type _____
Metal Core Thickness _____

Surface
Color Number: _____
Color Name: _____

Finish
Number: _____
Name: _____

Material shall equal or exceed performance standards set by the American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD3-2005 for high-pressure laminate. Fabrication shall comply with "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program" guidelines of the Architectural Woodwork Institute.

Metal Core TD (TD1371)