

TECHNICAL DATA

Arborite® High Wear Laminate

Types: HW3, HW4 and HW5

1. Manufacturing facility location

80 L a White Dr
Fletcher, NC
28732, USA

2. Product Description

Recommended Uses

Arborite® High Wear Laminate offers five times the abrasion and scuff resistance of conventional laminate. It is produced for commercial, contract and institutional applications where a decorative surface must withstand more than normal wear. Typical applications of High Wear Laminate include checkout counters in retail stores; restaurant and fast food fixtures and casework; tabletops; change counters; bank deal plates and tellers' desks; wall panels, wainscoting and institutional furniture.

High Wear Laminate is manufactured in three extra-high wear (HW) types:

- Vertical Surface (VGS) **Type HW3** is intended for vertical applications where a functional, durable, decorative surface must absorb somewhat less impact than a comparable horizontal surface.
- Postforming (HGP) **Type HW4** is intended for use on vertical and horizontal interior surfaces where it is necessary or desirable to roll the laminate on a simple radius over the edge of a substrate. This eliminates seams and leaves an attractive surface.
- General Purpose (HGS) **Type HW5** is produced for both horizontal and vertical interior applications such as commercial interior doors, walls and wainscoting, which must combine a pleasing appearance with enhanced resistance to both impact and abrasion.

Product Composition

High Wear surface papers impregnated with melamine resin are pressed over core sheets impregnated with phenolic resin. These sheets then are bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F (149°C). Finished sheets are trimmed and the backs sanded to facilitate bonding.

Basic Limitations

Arborite® High Wear Laminates are interior surfacing, not structural materials. They must be bonded to suitable substrates.

Do not subject these laminates to extremes in humidity or to temperatures over 275°F (135°C) for sustained periods of time.

They should not be exposed to flame, molten metal, metallic sparks. They should not be used as cutting surfaces.

It also should not be exposed to intense, continuous, direct sunlight.

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Patterns & Colors

Available in the full range of Arborite® solid colors, stones, marbles, woodgrains and patterns. See all patterns and colors at www.arborite.com.
 Please request a sample before ordering.

Finish

Cashmere (CA) – a fine, matte texture with a slight sheen
Nominal Glossometer Reading = 10

Standard Sheet Widths

48"	60"
1219mm	1524mm

Standard Sheet Lengths

96"	120"	144"
2438mm	3048mm	3658mm

Thickness and Weight

Description	Vertical Surface Type HW3 (VGP & VGS)	Postforming Type HW4 (HGP & HGL)	General Purpose Type HW5 (HGS)
Thickness	0.028" + 0.001" - 0.004" (0.71mm + 0.03 - 0.10mm)	0.039" ± 0.005" (0.99mm ± 0.13mm)	0.048" ± 0.005" (1.22mm ± 0.13mm)
Weight per square foot	0.186#	0.260#	0.322#

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3. Technical Data

Physical Properties of High Wear Laminate

ISO 4586 Test	Arborite High Wear Laminate	Typical Arborite High Wear Laminate Value	ISO 4586-3
Wear Resistance (cycles)	All types	3,200	1,000 (min.)
Boiling Water Resistance	All types	No effect	No effect
High Temperature Resistance	All types	Slight effect	No effect
Radiant Heat Resistance VGS HGS HGP	HW3 HW4 HW5	200 seconds 205 seconds 210 seconds	≥ 200 seconds ≥ 200 seconds ≥ 200 seconds
Stain Resistance Reagents 1-10 11-15	All types All types	No effect Moderate effect	No effect Moderate effect
Light Resistance	All types	Slight effect	Slight effect
Impact Resistance VGS HGS HGP	HW3 HW4 HW5	24" (609mm) 50" (1270mm) 60" (1524mm)	23.5" (600mm) 31.5" (800mm) 31.5" (800mm)
Cleanability (cycles)	All types	10	20 (max.)
Appearance	All types	No ABC defects	N/A
Formability**	HW4	9/16" face (14mm) 3/16" back (5mm)	9/16" face (14.27mm) 3/4" back (19.05mm)

**Radius listed for face is actually the radius of the form around which the laminate is postformed. The radius for back is actually the radius to which the decorative face is postformed.

Dimensional Stability: Gross Dimensional Change

Arborite High Wear Laminate	Direction of Change	Typical Arborite High Wear Laminate Value	ISO 4586-3
VGS Vertical Surface (HW3)	Machine Direction	0.5%	1.1% (max.)
	Cross Direction	0.8%	1.4% (max.)
HGP Postforming (HW4)	Machine Direction	0.5%	1.1% (max.)
	Cross Direction	0.8%	1.4% (max.)
HGS General Purpose (HW5)	Machine Direction	0.3%	1.1% (max.)
	Cross Direction	0.7%	1.4% (max.)

Typical Fire Test Data

High Wear Laminates are subject to Flame Spread and Smoke Developed standards in structures where codes establish such conditions.

Test data to determine compliance with these codes are obtained by the Steiner Tunnel Test method of the American Society for Testing Materials (ASTM-E-84, Standard Test Method for Surface Burning Characteristics of Building Materials). Tests were conducted in accordance with test method and mounting procedure as described in paragraph X1.7.2 of the test method. This procedure is cataloged by Underwriters Laboratories, Inc. as UL 723.

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Here is typical data for Arborite® High Wear Laminates:

Typical Flame Spread and Smoke Developed Properties

Product Type	Test Condition	Flame Spread	Smoke Developed
Vertical Surface Type HW3	Unbonded	40	40
Postforming Type HW4	Unbonded	45	55
General Purpose Type HW5	Unbonded	55	55

When you wish to specify decorative laminate for a Class I or A fire rating, please refer to the Fire-Rated Laminate Tech Data.

Model Code Designations used to determine flame spread classification

Flame Spread Classification (Maximum Rating)	International (IBC)	Life Safety (NFPA 101)
25	A	A
75	B	B
200	C	C

Reference: *Architectural Woodwork Quality Standard, 8th Edition, Version 1.0 - 2003*

All Model Codes regulate the generation of smoke by interior finish material. In all cases they specify a maximum smoke development rating of 450.

Codes and Certifications

Arborite® Laminate Types HW3, HW4 and HW5 conform to the voluntary standards of the American National Standards Institute, for thickness, performance properties and appearance. Arborite® Laminate Types HW3, HW4 and HW5 meet or exceed the International Standards Organization specifications as found in ISO 4586, titled "High-Pressure Decorative Laminate (HPDL) – Sheets Based on Thermosetting Resins – Part I: specifications."

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

All Arborite® Laminate products are tested regularly for code compliance for building construction and other applications. Here are some examples of frequently encountered regulations:

Basic Construction

U.S. Federal Specification L-P 508H, April 9, 1977, "Plastic Sheets, Laminated, Decorative and Nondecorative" spells out criteria for general purpose, vertical and postforming types, as well as backing sheets for federal installation. High Wear Laminate types in compliance include HW5 General Purpose, HW3 Vertical Surface and HW4 Postforming.

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Mobile Homes

U.S. Federal Register August 9, 1984, Housing and Urban Development Mobile Home Construction and Safety Standard, (24CFR), Part 3280.203. High Wear Laminate Type HW5 General Purpose complies with paragraphs 1, 4 and 6.

Motor Vehicles/Interiors

U.S. Federal Motor Vehicle Safety Standard (FMVSS) 302, "Flammability of Interior Materials." High Wear Laminate types in compliance include patterns in HW5 General Purpose, HW3 Vertical Surface and HW4 Postforming types.

4. **Installation: Fabrication and Assembly Recommendations**

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

Arborite® Laminates must be bonded to a substrate of reliable quality, such as particleboard, medium density fiberboard or plywood with one A-face. High-pressure laminate, plaster, concrete and gypsum board should not be considered suitable substrates. High Wear laminate may not be used as structural members.

Bond with adhesives and follow the techniques recommended by the adhesive manufacturer. Recommended adhesives are permanent types, such as urea and polyvinyl acetate (PVA), and contact types. Arborite® adhesives are recommended for most bonding conditions.

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. Drill oversized holes for screws or bolts. Screws or bolts should be slightly countersunk into the face side of a laminate-clad substrate.

Take care to ensure an appropriate acclimation between the laminate and the substrate prior to fabrication. The face and backing laminates and the substrate should be conditioned in the same environment for 48 hours before fabrication.

Recommended conditioning temperature is approximately 75°F (24°C). Laminates should be conditioned at 45% to 55% relative humidity.

With postforming machinery, Arborite® HW3 and HW4 will postform at a nominal sheet temperature range of 325°F to 338°F (163°C to 170°C) in 20 ± 5 seconds.

Carbide-tipped saw and router blades should be used for cutting. High tool speed and low feed speed are advisable. Cutting blades should be kept sharp. Use a hold-down to prevent any vibration.

5. **Warranty**

6. **Maintenance**

7. **Technical Services**

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



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 Canada, H8R 3H7
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Specification Form:

Surface shall be Arborite® Laminate	
Type: HW3, HW4 or HW5	
Surface Color Number: _____	Color Name: _____
Finish Code: <u>CA</u>	Finish Name: <u>Cashmere</u>
Edge Trim Color Number: _____	Color Name: _____
Adhesive Name: _____	Grade/Type: _____
Brand: Wilsonart® Adhesive	