



Hi-Wear laminate is designed for applications requiring increased abrasion and scuff resistance. The product offers over five times the wear resistance of standard grade laminate.

Due to its unique composition Nevamar® Hi-Wear laminate will vary in color from corresponding colors of Standard Nevamar® laminate. Sample evaluation is recommended.

## Product Composition

Hi-Wear 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). 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. Increased wear resistance is achieved by the addition of aluminum oxide particles to the laminate surface. 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 many years.

## Product Description

Type	Thickness*	Standard Nominal Sizes		Colors**
		Width	Length	
NI48 (in) (mm)	0.048 1.2	36, 48, 60 914, 1219, 1524	96, 120, 144 2438, 3048, 3658	All Solids, Patterns and Woodgrains
NI60 (in) (mm)	0.060 1.5	36, 48, 60 914, 1219, 1524	96, 120, 144 2438, 3048, 3658	All Solids, Patterns and Woodgrains

\*Thicker products conforming to NEMA Grade HDS, HDM, and HDH are available.

\*\*Due to its unique composition, Nevamar® Hi-Wear laminate will vary in color from corresponding colors of standard Nevamar HPL. This effect is more pronounced in darker colors and patterns. Sample evaluation prior to order placement is required.

Other widths and thicknesses are available upon request.

## Typical Uses

Hi-Wear high wear laminate is manufactured for application to interior horizontal and vertical surfaces where decorative surfaces require added wear resistance due to scuffing and abrasion. Examples of surfaces where abrasive wear is a major consideration include counters and table tops in restaurants and fast food, convenience stores, and other high traffic transaction areas. Vertical applications include wall panels, laminate interior doors,

partitions, and elevator cab interiors. It is manufactured to provide performance superior to even our exclusive Armored Protection® surface to help offset high exposure to scuffing and abrasion.

## Finish Options

Code	Finish	Description
C	Soft Leather	A finely grained leather finish, 14 ± 3 gloss units. Available in widths of 48" and 60" only.
I	Wood Essence	Natural-appearing. Linear woodgrain finish.
J	Crystal	Fine pebble grained finish with a medium gloss, 15 ± 3 gloss units.
L	Embossed Leather	Deeply embossed leather finish, 5 ± 1 gloss units. Manufactured in Limited Sizes.
N	Suede	Low gloss, textured finish, 12 ± 3 gloss units.
W	Embossed Slate	Deeply embossed slate finish, 7 ± 1 gloss units. Manufactured in Limited Sizes.
Y	Linature	Medium gloss linear woodgrain, 12 ± 3 gloss units.
Z	Ashwood gloss units.	A fine wood finish with a cathedral grain, 18 ± 3
OL	Linen	Embossed, cloth-like finish.
OZ	LineZ	Deeply embossed linear woodgrain finish.

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

## Fabrication Tips

When working with Hi-Wear 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 medium to high density fiberboard, particleboard, or metals. It should not be glued directly to plaster walls, gypsum wallboard, or concrete.
3. Recommended adhesives include solvent or water-based contact cement, white glue (PVA), epoxy, and hot melt glue. Consult your adhesive supplier for specific application requirements.

4. The use of a backing sheet 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 and very sharp. Feed rate should be slow and tool speed should be high.
6. Increased tool wear rate may be experienced when fabricating Hi-Wear as compared to standard laminate.
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. All edges of laminate should be filed smooth with file direction towards substrate to help prevent stress cracks and to minimize chipping.
9. When fasteners are required, it is advisable to first drill an oversized hole through the laminate. This reduces the likelihood of stress cracks.
10. Hi-Wear 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	LD 3-2005 TEST	NEMA NEVAMAR VALUES Method	TYPICAL HGS NEMA STD. NI48	NEVAMAR VALUES HDS	TYPICAL HDM VALUES NI60	NEMA STD. HDM
Thickness	(in) (mm)		0.048 ± 0.003 1.2 ± 0.08	0.048 ± 0.005 1.2 ± 0.12	0.060 ± 0.003 1.5 ± 0.08	0.059 ± 0.005 1.5 ± 0.12
Appearance		3.1	Complies		Complies	
Light Resistance		3.3	Slight effect	Slight effect	Slight effect	Slight effect
Cleanability		3.4	5	20 (max)	5	20 (max)
Stain 1-10			No effect	No effect	No effect	No effect
Stain 11-15			No effect	Moderate effect	No effect	Moderate effect
Boiling Water Resistance		3.5	No effect	No effect	No effect	No effect
High Temperature Resistance		3.6	No effect	Slight effect	No effect	Slight effect
Ball Impact Resistance	(in.) (mm)	3.8	55 1397	50 (min.) 1250 (min.)	60 1524	55 (min.) 1400 (min.)
Radiant Heat Resistance	(sec)	3.10	200	125 (min.)	300	150 (min.)
Dimensional Change						
Machine Direction	(%)	3.11	0.25	0.50 (max.)	0.25	0.50 (max.)
Cross Direction	(%)		0.70	0.90 (max.)	0.70	0.90 (max.)
Wear Resistance	(cycles)	3.13	3500	400 (min.)	3500	3000 (min.)

### Codes and Certifications

1. American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD 3-2005, "High- Pressure Decorative Laminate": for HDS, type I48 complies, for HDM, type NI60 complies.

### Care and Maintenance

Nevamar® 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®, 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.

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 labeled **CAUTION** or **WARNING**. Any questions or concerns should be referred to the product's manufacturer or call 1-877-726-6526. 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

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### Limited Warranty

Subject to the limitations set forth below, Panolam® 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 Panolam®, 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 warranties, expressed 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 Panolam 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.

Our maximum liability arising out of the sale of the products or their use, whether based upon warranty, contract, tort or otherwise, shall not exceed the actual payments received by us in connection therewith. In no event shall we be liable for special, incidental or consequential damages, including, but not limited to, arising hereunder or from the loss of profits, or loss of use damages, sales of the products.

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Formula 409 is a registered trademark for The Clorox Company of Oakland, CA 94612; Glass Plus is a registered trademark for The Dow Chemical Company of Indianapolis, IN 46268-0511; Windex is a registered trademark for S.C. Johnson & Sons INC. of Racine, WI 53403-5011.

## Headquarters

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