

# Laminate by FORMICA®

THE ORIGINAL HIGH PRESSURE LAMINATE

## T E C H N I C A L   D A T A

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HPL (GENERAL PURPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20)

### PRODUCT DESCRIPTION

Melamine-impregnated decorative surface papers are combined with phenolic-treated kraft paper and consolidated in a press at high pressures. The sheet back is sanded to maintain a uniform thickness and facilitate bonding.

#### Colors and Finish

Laminate by Formica sheets (horizontal general purpose grade 10/HGS) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the Formica Corporation - National Product Guide (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

Laminate by Formica sheets (horizontal post-forming grade 12/HGP and vertical post-forming grade 20/VGP) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the Formica Corporation - National Product Guide (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

### RECOMMENDED APPLICATION

**Grade 10/HGS:** Laminate by Formica – general purpose grade 10/HGS is intended for application to interior horizontal or vertical surfaces where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

**Grade 12/HGP:** Laminate by Formica – post-forming laminate grade 12/HGP is intended for application to interior horizontal or vertical surfaces requiring 1/2" (12.7mm) or greater outside radiused edges, and/or 3/16" (4.8mm) cove radii, where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

**Grade 20/VGP:** Laminate by Formica – post-forming grade 20/VGP is intended for application to interior vertical surfaces requiring 3/8" (9.5mm) or greater outside radiused edges, where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources important considerations.

### FABRICATION AND ASSEMBLY

#### Limitations

Laminate by Formica is designed for interior use only. Do not adhere directly to plaster, drywall (gypsum board), or concrete. Do not use in areas exposed to temperatures exceeding 275°F (135°C) or for exterior applications. When bonded to metal substrates using contact adhesive, **finished panel widths should not exceed 24" (610mm) maximum** tolerance for grade 20/VGP.

#### Machining Low Sheen Laminate Sheets

Laminate by Formica with low sheen surfaces are subject to marring. Recommend fabricating with peel coat on surface (if applicable). Router base should be clean and free of burrs and debris. Table saws should be clean, flat and free of burrs.

#### Storage

Laminate by Formica should be stored horizontally, with a caul board or other protective sheet placed on top to protect the material from possible damage. The material should be protected from moisture, and should never be stored in contact with the floor or an outside wall. Optimum conditions for storage are approximately 75°F (24°C), and 45% to 55% relative humidity.

#### Preconditioning

Prior to fabrication, allow laminate sheet and substrate to acclimate for at least 48 hours at the same ambient conditions. Optimum conditions are approximately 75°F (24°C), and relative humidity of 45% to 55%. Provisions should be made for the circulation of air around the materials.

#### Substrates

Laminate by Formica sheet should be bonded to an appropriate substrate such as 45# density particleboard (ANSI A208.1 - 1999), or Medium Density Fiberboard (MDF). Due to the potential for stress cracking, shrink-back, and surface telegraphing problems, the use of plywood is strongly discouraged and not recommended. The substrate should be sanded smooth, clean, free of oil or grease, and uniform in thickness.

Laminate by Formica sheet (grade 10/HGS) can be bonded to metal substrates using contact adhesive (see recommendations below, under Adhesives).

## Adhesives

Contact, semi-rigid (PVAc), or rigid (urea, resorcinol) adhesives may be used. Follow the adhesive manufacturer's recommendations. Certain combinations of finish, substrate, and adhesive can cause telegraphing.

When bonding Laminate by Formica sheet (grade 10/HGS) to metal substrates using contact adhesive, use Formica brand flammable solvent-based #155 or non-flammable solvent-base #120M contact adhesives. Do not use water-based or SBR types of contact adhesive when bonding laminate sheets to metal substrates.

## Assembly

Material, equipment, and workmanship should conform to the Formica Corporation recommended standard practices, conditions, procedures, and recommendations as specified by ANSI/NEMA LD3-2005, Architectural Woodwork Quality Standards and ANSI 161.2-1998 Standards.

Laminate by Formica sheets (grade 10, 12, and 20) can be sawed, drilled, routed, and fabricated using standard carbide-tipped cutting tools.

Holes for screws or bolts should be drilled oversized.

Panel assemblies should be laminated with the appropriate backing sheet to minimize warpage. Formica backing sheets (grade 91/BKV or 92/BKH) are recommended for less critical applications. Optimum balancing is obtained by bonding the same surface laminate on both sides of the assembly with the same adhesive. Always align sanding marks in the same direction.

All inside corners of cutouts must be radiused as large as possible, 1/8" (3.18mm) minimum, to avoid stress cracking. The edges and corners should be routed, sanded, or filed smooth and free of chips or nicks. Panels fabricated using metal substrates, which are more dimensionally stable than wood-based materials, should be installed in a framing system, which captures the perimeter of the panel yet allows for the normal dimensional movement of the laminate. This is to protect the panel edge and prevent edge lifting or separation from the substrate, which can occur under dry conditions.

## TECHNICAL DATA

Performance compliance of Laminate by Formica  
General purpose grade 10 and Post-forming grades 12 & 20

### ANSI/NEMA Standards Publication - LD3-2005

Physical Properties	LD3 Test	10/HGS
Appearance	3.1	No ABC Defects
Light Resistance	3.3	Slight
Cleanability	3.4	20 (max.)
Stain Resistance	3.4	No Effect Moderate
Reagents 1 - 10		
Reagents 11 - 15		
Boiling Water Resistance	3.5	No Effect
High Temperature Resistance	3.6	Slight
Ball Impact Resistance - in	3.8	50 (min.)
- mm		1270 (min.)
Radiant Heat Resistance - sec	3.10	125 (min.)
Dimensional Change	3.11	
Machine Direction - %		0.50 (max.)
Cross Direction - %		0.90 (max.)
Wear Resistance - cycles	3.13	400 (min.)

Physical Properties	LD3 Test	12/HGP	20/VGP
Appearance	3.1	No ABC Defects	No ABC Defects
Light Resistance	3.3	Slight	Slight
Cleanability	3.4	20 (max.)	20 (max.)
Stain Resistance	3.4	No Effect Moderate	No Effect Moderate
Reagents 1 - 10			
Reagents 11 - 15			
Boiling Water Resistance	3.5	Slight	Slight
High Temperature Resistance	3.6	Slight	Slight
Ball Impact Resistance - in	3.8	30 (min.)	20 (min.)
- mm		762 (min.)	508 (min.)
Radiant Heat Resistance - sec	3.10	100 (min.)	80 (min.)
Dimensional Change	3.11		
Machine Direction - %		1.1 (max.)	1.1 (max.)
Cross Direction - %		1.4 (max.)	1.4 (max.)
Wear Resistance - cycles	3.13	400 (min.)	400 (min.)
Formability - in	3.14	5/8	1/2
- mm		16	12
Blister Resistance - sec	3.15	55	40

### FIRE TEST DATA - ASTM E-84

Formica Corporation conducts and maintains an active fire testing program to provide code regulators, architects, and designers with current information on a variety of panel assemblies. Fire test data using Formica® brand laminate sheets (grades 10/HGS, 12HGP and 20/VGP) is available upon request. Contact Formica® Technical Services at 1-800-FORMICA™ (option 2) or 513-786-3578 for assistance.

## CODES AND SPECIFICATIONS

### Laminate by Formica

(general purpose - grade 10/HGS / horizontal application)

U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1  
U.S. Military Specification, MIL-P-17171E(SH), Type I  
FMVSS 302

NSF Standard 35

City of New York, Board of Standards and Appeals,

MEA No. 326-86M

GREENGUARD CERTIFICATION

### Laminate by Formica

(post-forming - grade 12/HGP / horizontal application)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 1  
FMVSS 302

NSF Standard 35

City of New York, Board of Standards and Appeals,

MEA No. 327-86M

GREENGUARD CERTIFICATION

### Laminate by Formica

(post-forming - grade 20/VGP / vertical application)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 2  
CFR Part 3280 Manufacturing Home Construction and  
Safety Standards

FMVSS 302

NSF Standard 35

GREENGUARD CERTIFICATION

### Sizes

Sheet widths: 36" (914mm), 48" (1219mm), 60" (1524mm)

Sheet lengths: 96" (2438mm), 120" (3048mm), 144" (3658mm)

### Nominal Thickness

Grade 10/HGS: 0.045"  $\pm$  0.004" (1.14mm  $\pm$  0.12mm)

Grade 12/HGP: 0.035"  $\pm$  0.004" (0.89mm  $\pm$  0.12mm)

Grade 20/VGP: 0.025"  $\pm$  0.004" (0.64mm  $\pm$  0.12mm)

### Weight Per Square Foot

Grade 10/HGS: 0.324 pounds

Grade 12/HGP: 0.252 pounds

Grade 20/VGP: 0.180 pounds

To order Laminate by Formica samples, please call

U.S. – 1-800-FORMICA™ (select option 1)

Canada – 1-800-363-1405 for ZIP-CHIP service

### How To Specify

Surface (and appropriate backing sheet) shall be Laminate by Formica from Formica Corporation, Cincinnati, Ohio.

COLOR NUMBER \_\_\_\_\_

COLOR NAME \_\_\_\_\_

GRADE \_\_\_\_\_

FINISH \_\_\_\_\_

SIZE \_\_\_\_\_

### Use and Care (refer to Formica Laminate Use and Care Guide – Form No. YLT 02358W for specific details)

Laminate by Formica may be cleaned with a damp cloth and mild detergent.

If in doubt about the suitability of a particular cleaner or detergent, check with its manufacturer. Use of abrasive cleaners, powders, scouring pads, steel wool, sandpaper, etc., can damage the finish of the decorative surface and are not recommended.

Acid or alkaline-based cleaners, compounds, etc., will mar, etch, corrode, and permanently discolor the decorative surface of laminate. Never use these materials on laminate, nor allow bottles, rags, etc., contaminated with them to contact the surface. Accidental spills or splatters from these harsh materials should be wiped off immediately, and the area cleaned thoroughly with a damp cloth.

## **LIMITED WARRANTY**

Formica Corporation expressly warrants that, for a period of one (1) year from the date of first sale, these products will be reasonably free of defects in materials and workmanship, and that when properly handled and fabricated, will conform, within accepted tolerance, to applicable manufacturing specifications. Colors subject to dye lot variations. This limited warranty only applies to Laminate by Formica which is stored, handled, fabricated and installed in the manner recommended by Formica Corporation. Due to the variety of uses and applications to which Laminate by Formica may be put, FORMICA CORPORATION CAN MAKE NO WARRANTY THAT THIS PRODUCT IS SUITABLE FOR ANY PARTICULAR PURPOSE AND CAN MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE.

## **DISCLAIMER OF WARRANTIES**

THE WARRANTIES SET FORTH HEREIN OR IN FORMICA CORPORATION'S WARRANTY DOCUMENTS WITH RESPECT TO A PRODUCT ARE THE ONLY WARRANTIES MADE BY FORMICA CORPORATION IN CONNECTION WITH THESE PRODUCTS, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PRODUCTS SOLD BY FORMICA CORPORATION ARE SOLD ONLY TO THE SPECIFICATIONS SPECIFICALLY SET FORTH BY FORMICA CORPORATION IN WRITING. FORMICA CORPORATION'S SOLE OBLIGATION FOR A REMEDY TO BUYER SHALL BE REPAIR OR REPLACEMENT OF NON-CONFORMING PRODUCTS, OR AT THE OPTION OF FORMICA CORPORATION, RETURN OF THE PRODUCT AND REFUND OF THE PURCHASE PRICE. BUYER ASSUMES ALL RISK WHATSOEVER AS TO THE RESULT OF THE USE OF THE PRODUCTS PURCHASED, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

## **LIMITATION OF LIABILITY**

No claim by buyer of any kind, including claims for indemnification, whether as to quality or amount of products delivered or for non-delivery of products, shall be greater in amount than the purchase price of the products in respect of which damages are claimed. IN NO EVENT SHALL FORMICA CORPORATION BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, RELIANCE,

EXEMPLARY, OR CONSEQUENTIAL DAMAGES OR COVER, OR LOSS OF PROFIT, REVENUE OR USE, IN CONNECTION WITH, ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS SOLD HEREUNDER, OR FOR ANY LIABILITY OF BUYER TO ANY THIRD PARTY WITH RESPECT THERETO. BUYER SHALL INSPECT FOR NONCONFORMITY PROMPTLY UPON RECEIPT. Failure by buyer to give Formica Corporation written notice of claim within 30 days from date of delivery or, in the case of non-delivery from the date fixed for delivery, shall constitute a waiver by buyer of all claims in respect of such products.

This limited warranty gives purchaser of Laminate by Formica specific legal rights. Other rights may be available which vary from state to state.

Any information or suggestion concerning application, specifications or compliances with codes and standards is provided solely for your convenient reference and without any representation as to accuracy or suitability. Formica Corporation disclaims any legal responsibility. The user must verify and test the suitability of any information or products for their own particular purpose of specific application.

## **MANUFACTURER**

Laminate by Formica sheets are manufactured by Formica Corporation.

Formica Corporation  
10155 Reading Road  
Cincinnati, Ohio 45241-5279

## **TECHNICAL SERVICES**

Technical assistance may be obtained through your local Formica brand products distributor or from Formica Corporation trained representatives in sales offices throughout the country. To assist these representatives, Formica Corporation maintains a sales technical services staff in Cincinnati, Ohio. For technical assistance, contact your distributor or sales representative; write the company directly at Formica Corporation Technical Services Department, 10155 Reading Road, Cincinnati, OH, 45241; call (513) 786-3578 or 1-800-FORMICA™; or fax (513) 786-3195. In Canada, call 1-800-363-1405. In Mexico, call (525) 530-3135.

