



Chemtop²TM

Advanced Chemical Resistance

TECHNICAL DATA

RECOMMENDED APPLICATION

Formica Chemtop2 is intended for application to interior horizontal and vertical surfaces where design, appearance, quality, durability, and resistance to relatively harsh acids, alkalis, corrosive salts, and other destructive or staining substances are required. Horizontal surfaces include sink, counter, lab benches, tabletops, and other work surfaces in chemical, medical, scientific, pathogenic laboratories, clinics, photographic laboratories, mortuaries, nursing stations, and other institutional uses, as well as commercial or light-duty manufacturing operations. Vertical surfaces include cabinets, casework fronts, wall backsplash panels, or screens. Formica Chemtop2 chemical-resistant laminate is available in a postformable grade (Grade 12), and may be postformed around a minimum 1/2" (12.7mm) outside radius and a minimum 3/16" (4.8mm) inside cove radius. Postforming provides an ergonomic edge and excellent protection against chemicals attacking a fabricated seam.

FABRICATION AND ASSEMBLY

Limitations

Formica Chemtop2 laminate is not recommended for application directly to plaster, gypsum board, or concrete. It should not be used in areas where temperatures exceed 275°F (135°C) for prolonged periods of time, or for exterior applications. Do not expose to continuous direct sunlight. Do not chop, slice, pound or hammer on Formica Chemtop2 surface.

NOTE: Chemtop2 laminate should be protected from damage caused by high heat, such as heat created from Bunsen burners. The Bunsen burner should be placed on a trivet to protect the laminate surface.

NOTE: Formica Chemtop2 incorporates a special integrated coating which gives the product its chemical-resistant properties and a slightly different hue from its corresponding standard high pressure laminate (HPL) item. This color difference does not constitute a defect. Make sure to review actual Formica Chemtop2 samples before specifying. Butt joint matches between Formica Chemtop2 and standard HPL are not recommended, while horizontal/vertical matches are acceptable. It is highly

recommended that Formica Chemtop2 be used for entire project as standard HPL will not provide chemical resistance.

Storage

Formica Chemtop2 laminate should be stored horizontally, face-to-face and back-to-back with the top sheet turned face down. A caul board should be placed on top to protect the material from possible damage and reduce the chance of warpage of the top sheets. The material should be protected from light, heat and moisture and should never be stored in contact with the floor or an outside wall. It is important that Chemtop2 be stored at a temperature not less than 60°F (16°C) and a relative humidity not less than 40%.

Preconditioning

Formica Chemtop2 laminates and substrates gain moisture and expand under high relative humidity conditions, and lose moisture and shrink under dry relative humidity conditions. Prior to fabrication, allow the Formica Chemtop2 laminate and the 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 components. Formica Chemtop2 moves about twice as much across the grain as it does in the length direction (sanding direction). Whenever possible minimize the dimension of the cross-grain direction. Note: Stress cracking can result when high-moisture material is glued and subsequently exposed to low humidity conditions. Excessively dry material may expand and cause bubbling if improperly glued.

Cutting

Formica Chemtop2 has a special chemical-resistant surface. We recommend the use of sharp, carbide tipped cutting blades with low or negative hook profiles. Low feed speeds and high tool speeds are also suggested. A featherboard should be clamped to the saw fence to stabilize the stock and prevent chatter, producing safer, cleaner cuts.

Substrates

The recommended cores for Formica Chemtop2 are 45# density, industrial grade particleboard (CS 236-66; Type 1, Grade B, Class 2), Medium Density Fiberboard (MDF), or cabinet grade plywood. The substrates should be sanded smooth, clean, free of oil or grease, and uniform in thickness. Do not use drywall (gypsum), plaster, concrete, solid lumber, or underlayment.

Adhesives

The strength of the bond between Formica Chemtop2 and the substrate determines the amount of stress that may be transmitted to the substrate. Contact adhesives are the weakest of all recommended adhesives because of their elastomeric nature. PVAc (white glue), urea and resorcinol adhesives distribute much more of the stress to the substrate, making these assemblies more crack resistant. Follow the adhesive manufacturer's recommendations.

Assembly

Material, equipment and workmanship should conform to the industry standard practices, conditions, procedures and recommendations as specified by ANSI/NEMA LD3-1995, Section 4, Architectural Woodwork Quality Standards, DLPA (Decorative Laminate Products Association) and ANSI 161.2-1979 standards. Formica Chemtop2 has a special chemical-resistant surface. We recommend the use of sharp, carbide tipped cutting blades with low or negative hook profiles. Low feed speeds and high tool speeds are also suggested. A board should be clamped to the saw fence to hold the product down and prevent flutter/vibration while cutting. Panel assemblies should be laminated with a suitable balancing sheet to minimize warpage. 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 filed smooth and free of chips or nicks.

Postforming

Formica Chemtop2 can be formed similarly to conventional HPL, but at a lower temperature. Ideal postforming temperature is 250°F (121°C). Tempilaq® (gray colored) can be used to determine the proper temperature. Formica Chemtop2 can be postformed to a minimum 1/2" (12.7mm) outside radius and 3/16" (4.8mm) inside cove radius. Slight color change in the cove is normal, and does not indicate a product defect. COVES SHOULD BE FORMED AT 300°-325°F (149°-163°C).

TECHNICAL DATA

Performance compliance of Formica Chemtop2 chemical resistant laminate

ANSI/NEMA Standards Publication - INDOOR BROCHURE

Physical Properties	LD3 Test	Chemtop2 (12)	NEMA Standard
Appearance	3.1	No ABC Defects	No ABC Defects
Cleanability/Stain Resistance	3.4		
Reagents 1 - 10		No Effect	Slight Effect
Reagents 11 - 15		No Effect	Slight Effect
Boiling Water Resistance	3.5	Slight Effect	Slight Effect
High Temperature Resistance	3.6	No Effect	Slight Effect
Linear Glass Scratch	3.7	50-100 Moderate	50-100 Moderate
Ball Impact Resistance (in.)	3.8	54" (1371.6 mm)	30" (508 mm)
Dart Impact Resistance (in.)	3.9	21" (533 mm)	11.8" (300 mm)
Radiant Heat Resistance (sec.)	3.10	55	100 (minimum)
Dimensional Change	3.11		
Machine Direction		1.0%	.1% (maximum)
Cross Direction)		1.2%	1.4% (maximum)
Wear Resistance (cycles)	3.13	750	400 (minimum)
Forming @ 288°F, 275-350°F	3.14	5/8" (16 mm)	5/8" (16 mm) minimum
Blister Resistance (sec.)	3.15	62	55 (minimum)

Codes and Specifications

Formica® Laboratory Grade Laminate U.S. Federal Specification, LP508-H, Style D, Type II, Class 1
International Organization of Standardization ISO 4586-2

GreenGuard

Formica is proud to announce that the GREENGUARD Environmental Institute has awarded its GREENGUARD Indoor Air Quality Certification to Formica Brand Laminate. All Formica Brand 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 further details and a copy of the certificate, please visit: <http://www.greenguard.org/>.

Chemical and Stain Resistance

The chemicals and reagents listed were placed in contact with the surface of the Chemtop2 laminate in a covered method (watch glass cover) for a period of 16 hours prior to visual examination and evaluation. The reagents listed below did not damage the surface of the Chemtop2 laminate. Those reagents marked with an asterisk(*) may cause a slight change in gloss or color, depending upon the duration or exposure. As with all fine cabinetry surfaces, Formica Corporation recommends prompt cleanup of all spills, using a damp cloth and mild detergent. If in doubt about the suitability of a particular chemical not listed below, contact Formica Sales Technical Services at (513) 786-3048 or 1-800-FORMICA.™

Chemical and Stain Resistance (continued)

Science Laboratories

Acids

Acetic Acid 98%
Carbolic Acid (phenol), 85%
Chromic Acid, 60%
Citric Acid, 10%
Dichromate Cleaning Solution*
Formic Acid, 90%*
Glacial Acetic Acid

Hydrochloric Acid, 37%
Nitric Acid, 20%
Nitric Acid, 70%*
Perchloric Acid, 60%
Phosphoric Acid, 85%
Sulfuric Acid, 77%
Sulfuric Acid, 96%*

Alkalis

Ammonium Hydroxide, 28%
Potassium Hydroxide, 15%
Sodium Carbonate, saturated

Sodium Hydroxide, 40%
Sodium Sulfide, 15%

Solvents

Acetone
Amyl Acetate
Benzene
Carbon Tetrachloride
Cresol
Denatured Alcohol
Dioxane
Ethyl Acetate
Furfural

Methyl Ethyl Ketone
Methylene Chloride
Mineral Spirits
Naphtha
Phenol 85%, (Carbolic Acid)
Tetrahydrofuran
Trichloroethylene
Toluene
Xylene

Other Reagents

Calcium Hypochlorite
Copper Sulfate, 10%
Ferric Chloride, 10%
Phenolphthalein, 1%

Potassium Permanganate, 2%
Sodium Bisulfite
Sodium Chloride
Zinc Chloride

Hospital and Health Care

Amyl Alcohol
Aniline Blue, 2.5%
Bromocresol Green Solution
Chloroform
Coal Tar Solution, 20%
Detachol Adhesive Remover
Eosin Solution
Ethyl Alcohol
Ethyl Ether
Eucalyptol Ferric Sub sulfate
Purified, 13-14%
Formaldehyde, 37%
Gentian Violet, 1% solution
Giemsa Bloodstain
Glycerinum Iodi Composilum
Hematoxylin
Hydrogen Peroxide, 3%
Hydrogen Peroxide, 20%

Iodine Tincture, USP, 2%
Isopropyl Alcohol
Mercurochrome®
Methyl Alcohol
Methylene Blue
Mineral Oil
Petroleum Jelly
Povidine Iodine
PVP Iodine Swab
Silver Nitrate, 10%
Steri-strip, 1544 Benzoin
Tincture
Thimerosal
Tincture Benzoin Compound
Tincture Merthiolate
Wrights Blood Stain
Zephiran Chloride, 17%
Zinc Oxide

Mortician Supplies

Formalin 65%
Cavres Cavity Trioxin
Coloro Dye #1
Dri-Cav Cavity Fluid
Glo-Tone Arterial Fluid
Hexaphene MA 37 Autopsy Gel

Inr-Tone Dye #3
Jaundice Spec. Arterial Fluid
NuLeco Chemical Cauterant
& Preservative
Plasdo-25 Arterial Fluid
PLX Arterial Fluid

Dental Supplies

Acrylic Bonding Cement
Amalgam
Disclosing Tablets

Enthat Phosphoric Acid Etch, 37%
EugenolFluoride Rinse
Germicidal Disposable Cloth

Photo Lab Supplies

D-76 Developer
General Purpose Fixer
Rapid Fixer with Hardener
C-41 Processing (developer
A, developer B, developer C,
BLIX A, BLIX B, BLIX C,
stabilizer)

Hypo Clearing Agent
Indicator Stop Bath
Rapid E-6 for color slides
(1st developer, color developer
A, color developer B,
BLIX A, BLIX B, BLIX C)

General Reagents

Cellosolve
Detergent
Gasoline
Kerosene
Lysol® brand disinfectant
Nail Polish Remover

Pine Oil
Sodium Hypochlorite, 5%
(Clorox®)
Trisodium Phosphate, 30%
Urea, 6.6%
Vegetable Oil

Harsh Household Products

Bluing: Mrs. Stewart's®
concentrated liquid bluing™

Ceramic Cooktop Cleaners:
Cook Top cleaning creme for
smooth top ranges

Chlorine Bleaches: Clorox
regular, Mr. Clean® with
bleach, Comet® cleaner with
bleach

Coffeepot Cleaners: Mr. Coffee®
cleaner

Countertop Cleaners: Lysol
antibacterial kitchen cleaner

Crystal Drain Openers: Lewis
Red® Devil Lye® drain opener

Hair Colorings: Miss Clairol®
creme formula - black velvet,
Clairol Pure White® creme
developer

Lime Removers: Lime-A-Way®
extra, Comet® non-abrasive
lime scale remover, CLR®

Liquid Drain Openers: Liquid
Plumber®, Drano®

Metal Cleaners: Cameo®
copper cleaner, Tarn-X®

Mildew Removers: Tilex®
instant mildew remover,
Johnson Wax® Vanish Mildew
Plus stain remover with
bleach + cleaner

Oven Cleaners: Easy-Off®
heavy-duty oven cleaner,

Rust Removers: Duro Naval®
Jelly rust dissolver

Toilet Bowl Cleaners: Lysol®
toilet bowl cleaner,
SNOBOL® liquid disinfectant
toilet bowl cleaner,
Sani-Flush® chlorine thick
liquid bowl cleaner,
The Works® liquid toilet bowl
cleaner

ANSI/NEMA Reagents

Acetone
Betadine®
Catsup
Citric Acid, 10%
Distilled Water
Ethanol, 50%
Fresh Coffee
Household Ammonia

#2 Pencil
Purple Supermarket Stamp
Pad Ink
Shoe Polish
Tea Bag
Vegetable Oil
Wax Crayon
Yellow Mustard

PRODUCT SPECIFICATIONS

Thickness

GRADE A3 - POSTFORMING

.038" ± .005" (0.97mm ± 0.13mm),

Compact*: 1/2" (Grade: S6), 3/4" (Grade: S7), 1" (Grade: R3)
± .005" (12.7mm, 19.0mm, 25.4mm ± .13mm)

*All 1/2" Compact Structural Laminate will be factory ordered.

Sizes

30," 36," 48," 60" x 96," 120," 144"
(76.2cm, 91.4cm, 121.9cm, 152.4cm x 243.8cm,
304.8cm, 365.8cm)

Finish

Other colors may be available with a minimum quantity order. Please contact your Formica representative for details.

Colors And Patterns

Formica Chemtop2 laminates are available in a mixture of 16 distinct colors and patterns.

Colors Matching

Formica Chemtop2 incorporates a special integrated coating which gives the product its chemical resistant properties and a slightly different hue from its corresponding standard high pressure laminate (HPL) item. This color difference does not constitute a defect. Review actual Formica Chemtop2 sample before specifying. Butt matches between Formica Chemtop2 and standard HPL are not recommended, WHILE HORIZONTAL/VERTICAL MATCHES ARE ACCEPTABLE.

Samples are available from Formica Corporation specification representatives or directly from Formica Corporation. Call 1-800-FORMICA™ or visit www.formica.com.

How To Specify

Surface shall be Formica Chemtop2 Chemical-Resistant Laminate from Formica Corporation, Cincinnati, Ohio.

COLOR NUMBER _____

COLOR NAME _____

GRADE _____

FINISH CT

Formica Chemtop2 laminates meet the minimum performance standards of the International Organization of

Standardization, ISO 4586-2, and of the National Electrical Manufacturers Association, ANSI/NEMA LD3-1995.

Use and Care

Formica Chemtop2 laminate surfaces may be cleaned with a damp cloth and mild detergent. Use of abrasive cleaners, powders, scouring pads, steel wool, sandpaper, etc., will damage the finish and can permanently reduce the stain and chemical resistance of the laminate. Good laboratory practice dictates that all chemical spills should be wiped up promptly. Stubborn stains may be removed by use of organic solvent or hypochlorite bleach, followed by wiping with a soft, damp cloth. If in doubt about the suitability of a particular cleaner or detergent, check with its manufacturer.

LIMITED WARRANTY

FORMICA CORPORATION EXPRESSLY WARRANTS THAT, FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FIRST SALE, FORMICA CHEMTOP2 CHEMICAL-RESISTANT LAMINATE WILL BE REASONABLY FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP AND THAT WHEN PROPERLY HANDLED AND FABRICATED WILL CONFORM, WITHIN ACCEPTED TOLERANCES, TO APPLICABLE MANUFACTURING SPECIFICATIONS. THIS LIMITED WARRANTY ONLY APPLIES TO FORMICA CHEMTOP2 LAMINATE, WHICH IS STORED, HANDLED, FABRICATED AND INSTALLED IN THE MANNER RECOMMENDED BY FORMICA CORPORATION. DUE TO THE VARIETY OF USES AND APPLICATIONS TO WHICH FORMICA CHEMTOP2 PRODUCTS MAY BE PUT, FORMICA CORPORATION CAN MAKE NO WARRANTY THAT THIS PRODUCT IS SUITABLE FOR ANY PARTICULAR PURPOSE AND CAN MAKE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE.

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Cincinnati, Ohio 45241
Printed in the U.S.A.
Form No. 15-003 (05/05)

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