



Surell®

Solid Surfacing

T E C H N I C A L D A T A

RECOMMENDED APPLICATION

Surell® solid surfacing material is a solid homogeneous material suitable for many functional and decorative applications. It is a fully densified composite of modified resin and mineral filler. The product is available in the following forms:

- Sheet stock in 1/4" (6.4mm), 1/2" (12.7mm) and 3/4" (19.05mm)
- Kitchen sinks, single and double bowl designs
- Lavatory bowls, universal designs (ADA specification and water conservation)
- Vanity tops with integral bowl and backsplash
- Shower bases and shower walls with optional recessed soap dish
- Bath walls with optional recessed soap dish
- Edge strips and windowsills
- Laboratory bowls

Surell solid surfacing material is ideally suited for domestic use in the kitchen and bathroom. It is also widely specified for a full range of uses in offices, banks, restaurants, hospitals and other commercial applications.

FABRICATION AND ASSEMBLY

Refer to the *Surell® Fabrication Guide* for full information on working with Surell solid surfacing material. Follow accepted standard practices and safety procedures.

Limitations

Surell solid surfacing material is not recommended for certain applications, which include: exposure to heat sources that may elevate material temperature above 175°F (79°C), including hot pads for cookware, as excessive heat may cause stress fractures; below-grade wall surfacing, if moisture can affect the adhesive bond; exterior use, due to the possibility of some color change caused by exposure to direct sunlight. The 1/4" (6.4mm) thick material should not be used for countertops or other horizontal applications. Exposure to certain strong chemicals may be harmful; refer to the *Use and Care* section for specific recommendations.

Storage

Surell sheets may be stored in their shipping crates. If stacked, limit stack to three (3) crates high and only stack crates of the same size. Store crates on a flat surface or support with at least three (3) cantilever rack arms. If the sheets are stored individually, they should be well supported to prevent sagging and warping. Do not put long sheets on top of shorter sheets.

- Surell kitchen sink boxes may be stacked up to six (6) boxes high of the same size.
- Surell lavatory bowl boxes may be stacked up to six (6) boxes high of the same size.
- Surell vanity top boxes may be stacked up to five (5) boxes high of the same size.
- Surell shower bases are shipped on pallets and should not be stacked.

Preconditioning

Surell material and adhesives should be 65°F (18°C) or warmer prior to fabrication.

Substrates and Supports

Surell sheets for horizontal surfaces such as countertops should be supported every 18" (45.7cm) for 1/2" (12.7mm) thickness. Do not use 1/4" (6.4mm) thick sheets for horizontal applications.

- Do not use a full wood underlayment as a support for horizontal sheets.
- Restrict unsupported overhang to 6" (152.4mm) for 1/2" (12.7mm) thick Surell sheets.
- Shower bases should be set on the subfloor if it is flat and level; otherwise, set the base in mortar.

Adhesives

For seams and drop edges, use Surell® Seaming Compound or Surell Seaming Cartridge or A-PAK.

Wood and wood veneer inserts (as in some drop-edge designs) can be bonded to Surell material with PVAc adhesive, clear epoxy adhesive, or clear silicone sealant.

When attaching Surell countertops and vanities to cabinets, use dabs of a clear silicone sealant every 10" (25.4cm) to 12" (30.5cm), then lower the unit into place.

When installing vertical panels for shower and bath surrounds, use a clear silicon adhesive. Apply a 3/16-1/4" bead around the perimeter and at 6-8" intervals in the middle.

When installing backsplash sections, use a clear silicone adhesive or Surell colormatched silicone sealant. If the backsplash is less than 8" (203.2mm) high, it may be bonded to the countertop using Formica Surell Seaming Adhesive.

Assembly

When vanities and countertops are placed between walls, allow 1/8" (3.2mm) space per 10' (3.05m) length for dimensional movement.

All inside corners of cutouts must be radiused as large as possible, to a minimum of 1/4" (6.4mm), and reinforced with Surell corner blocks to avoid stress cracking. The edges and corners should be sanded smooth and free of chips or nicks. Heat-conductive aluminum tape must be used for drop-in stoves and around heat sources to protect from thermal stress. See the latest *Formica Surell Fabrication Guide* (Form No. 11-144) for details.

Polishing

Consult the *Surell® Technical Brief — Polishing* (Form No. 11-086) or *Formica Surell Fabrication Guide* (Form No. 11-149) for detailed information.

TECHNICAL DATA

Performance and physical properties of Surell solid surfacing material:

ANSI/NEMA Standards Publication — LD3-1995

Physical Properties	LD3 Test	Formica Surell® Sheet Stock Typical Values
Surface Finish (gloss) – units	3.2	10
Light Resistance	3.3	NE
Cleanability – cycles	3.4	NE
Boiling Water Resistance	3.5	NE
High Temperature Resistance	3.6	NE
Impact Resistance (1/2 lb. ball) in. (226.8g ball) mm	3.8	154 (min.)
Radiant Heat Resistance – sec.	3.10	600 (min.)
Wear Resistance g/100 rev.	3.13	0.1

ASTM Test Methods

Physical Properties	ASTM Test	Formica Surell® Sheet Stock Typical Values
Tensile Strength – lb./sq. in.	D638	5590
Tensile Modulus – lb./sq. in.	D638	1,260,000
Tensile Elongation – %	D638	0.63
Flexural Strength – lb./sq. in.	D790	7,850
Flexural Modulus – lb./sq. in.	D790	1,250,000
Hardness – Barcol	2583	61
Hardness – Rockwell M	D785	95
Izod Impact – ft. lb./in.	D256	0.25
Specific Gravity – g/cc	D792A	1.75
Weight – lb./sq.ft. 1/4" (6.4mm) thick sheets 1/2" (12.7mm) thick sheets	D792A	2.3 4.6
Liquid Absorption (24 hrs.) – % 1/4" (6.4mm) thick sheets 1/2" (12.7mm) thick sheets	D570	0.07 0.04
Coeff. of Linear Expansion – in./in. °F – mm/mm °C	D696	2.3 x 10 ⁻⁵ * 4.14 x 10 ⁻⁵
Heat Distortion Temperature – °F – °C	D648	212 100
Thermal Conductivity Btu. in./sq. ft. hr. °F	F433	6.3

*For a temperature change of 10°F (-12°C). For example, from 70°F to 80°F (21°C to 27°C), a 10' (3.05m) length of Formica Surell solid surfacing material would increase less than 1/32" (0.79mm).

ANSI Test Method — Kitchen Sinks

Physical Properties	ANSI Test Z124.6 - 1990	Formica Surell® Kitchen Sinks
Knife Drop	4.2.2	No cracks or fractures
Skillet Drop	4.2.3	No cracks or fractures
Vibration Test – 1,000 cycles	4.4	No cracks or fractures
Water Resistance – 2,000 cycles between 190°F and 70°F (88°C and 21°C)	6.2	No cracks, crazing blistering or spalling

ANSI Test Method — Vanities and Lavatory Bowls

Physical Properties	ANSI Test Z124.6 - 1995	Formica Surell® Vanity Tops & Lavatory Bowls Typical Values
Surface Integrity	3.3	No cracks, chips, blisters
Subsurface Integrity	3.4	No voids
Strength of Drain Connection (25 lbs. at 24") (11.3kg at 61.0cm)	4.2	No cracks or chips
Impact Load Resistance (1/2 lb. ball at 20") (226.8g ball at 50.8cm)	4.3	No cracks or chips
Cracks Under Load (300 lbs.) (136.1kg)	4.4	No cracks
Residual Deflection – in. (after removing 300 lbs. (136.1kg) load)	4.4	0
Colorfastness (200 hrs.) (ASTM D2565)	5.1	No significant color change
Wear and Cleanability (10,000 cycles) % reflectance loss	5.3	0.2
Cigarette Burn Resistance (2 min.)	5.4	No effect after cleaning
Chemical Resistance	5.5	Pass
Water Resistance (2,000 cycles between 150°F and 50°F) (66°C and 10°C)	6.1.2	No cracks, crazing, blistering or spalling

CODES AND SPECIFICATIONS

- National Sanitation Foundation (NSF) Standard 51 for use in both splash and food areas.
- New York State for fire gas toxicity (value = 74g)
- HUD Bulletin UM-73a
- New York City MEA 190-90M
- Canadian Standards Association (CSA) LM80490-6

Resistance to Fungal and Bacterial Growth

ISO 846-1978 Method A

Fungi: complete agar medium. No mass change.
Not a nutritive medium for micro-organisms.

ISO 846-1978 Method B

Fungi: complete agar medium. No mass change.
Slight fungistatic effect.

ISO 846-1978

Bacteria: no significant mass change.
No visual damage either by eye or microscope.

Chemical Resistance

Passes BS3202 part 2, 1991 Appendix E and also ANSI Z124.3 5.5-1995. Meets requirements for general and heavy use when cleaned using Formica Surell solid surfacing material recommendations.

Formica Surell conforms to the National Sanitation Foundation Standard 51 for use in both splash and food areas. Formica Surell sheets conform with the relevant portions of the National Electrical Manufacturers Association, ANSI/NEMA, LD3-1995 or latest issue. Kitchen sinks conform to ANSI Z124.6. Vanity bowls conform to ANSI Z124.3. Shower bases conform to ANSI Z124.2.

Fire Test Data — ASTM E-84

All Formica Surell sheet stock is classified as Class I(A) fire-resistant material for interior finishes. Meets FAA FAR Part 25-61 and Part 121-189.

Design	Thickness	Supporting Sheet	Flame Spread Index	Smoke Developed Index
Solid Color	1/4" (6.4mm)	None	15	165
Solid Color	1/2" (12.7mm)	None	10	25
Particulate	1/4" (6.4mm)	None	20	235
Particulate	1/2" (12.7mm)	None	10	20

PRODUCT AVAILABILITY

Sheet Stock is available in three thicknesses, in the following sizes:

Thickness	Width	Length
1/4" (6.4mm)	30" (76.2cm)	98" (248.9cm)
	36" (91.4cm)	96" (243.8cm)
1/2" (12.7mm)	30" (76.2cm)	145", 144" (368.3cm, 365.8cm)
	36" (91.4cm)	145" (368.3cm)
3/4" (19.05mm)	30" (76.2cm)	145" (368.3cm)
	36" (91.4cm)	145" (368.3cm)

All Kitchen Sinks are available in Arctic or Frost solid colors. Models K104, KS21 and KS25 are also available in Almondine, Sail White, Sand and Silk solid colors.

- K104 18" x 23" (45.7cm x 58.4cm) outside;
16" x 21" x 8-1/4" (40.6cm x 53.3cm x 209.6mm)
inside dimensions
- K121 18" x 18" (45.7cm x 45.7cm) outside;
16" x 16" x 8-1/4" (40.6cm x 40.6cm x 209.6mm)
inside dimensions
- KS21N *Double Bowl*
18 5/8" x 33 7/16" (47.3cm x 85.0cm)
outside;
(2) 16 5/8" x 15 3/4" x 9 15/16"
(42.3cm x 40.0cm x 25.3cm) bowl

- **KS26 Double Bowl**
20 1/2" x 33 7/16" (52.1cm x 85.0cm) outside;
(1) 18 1/2" x 18 5/16" x 9 15/16"
(47.0cm x 48.1cm x 25.3cm) bowl
(1) 15" x 12 9/16" x 8 3/16"
(38.1cm x 31.9cm x 20.8cm) bowl

Lavatory Bowls (VTA models) are available only in Artic or Frost solid colors. VTUMN model is available in all six solid colors.

- **VTA2***
13" x 17-1/2" (33.0cm x 44.5cm) outside;
10-1/2" x 15" x 6-1/2"
(26.7cm x 38.1cm x 165.1mm) inside
- **VTUMN***
14-3/4" x 18-3/16" (37.5cm x 46.2cm) outside;
13-1/4" x 16-5/8" x 5-1/2"
(33.7cm x 42.3cm x 14.0cm) inside

* Can be installed to meet ADA requirements.

Vanity Tops are available with centered integral bowl and covered backsplash, in Arctic and Frost solid colors only in 5 standard sizes; 22x31 and 22x37. Only single bowl units are available.

End Splashes are universal for mounting at either left or right ends of the full range of vanity tops and are available in Arctic or Frost solid colors only.

HOW TO SPECIFY

Solid surfacing material shall be Surell® solid surfacing material provided by Formica Corporation, Cincinnati, Ohio.

Sheet Stock Thickness	Width	Length	Color
Kitchen Sink Model No.	Size	Color	
Lavatory Bowl Model No.	Size	Color	
Vanity Top Size	End Splash	Color	
Shower Base Model No.	Size	Color	
Shower Wall Surrounds Model No.	Color		
Bath Wall Surrounds Size	Color		
Edge Strips/Windowsills Thickness	Width	Length	Color

USE AND CARE

Surell® will provide years of service with simple care. For ordinary cleaning, use a clean, damp cotton cloth and a household detergent. Stains should be removed using a mild cleanser. If in doubt about the suitability of a particular cleaner or detergent, check with its manufacturer. More stubborn stains may be removed by rubbing gently with a Scotch-Brite® brand scouring pad or #7447 pad for matte and #7448 pad for satin finishes.

Severe damage, nicks, or scratches may be removed by carefully sanding the area with a fine abrasive sandpaper, then finishing with a Scotch-Brite brand #7447 or #7448 pad to restore the finish. Very severe damage can be repaired using Surell Seaming Compound and is best done by a trained fabricator or dealer. Certain strong chemicals may be harmful to Surell. Never allow these compositions or bottles, rags, etc., contaminated with them to contact Surell surfaces. Stains from inadvertent contact with these compositions can generally be removed by the recommended procedures for cleaning and repairing.

Compositions which DO NOT stain Formica Surell:

Acetone	Isopropyl Alcohol (50% solution)
Ag Gentian Violet (1% solution)	Lye Solution (2%)
Ammonia (10%)	Merthiolate (1% solution)
Ammonium Hydroxide (28% solution)	Methyl Ethyl Ketone Milk
Amyl Acetate	Mineral Oil
Amyl Alcohol	Mixture of Naphtha and Ethyl Alcohol (50:50)
Beet Juice	Mustard
Betadine®	Nail Polish Remover (non-oily)
Black Non-Permanent Felt Pen Ink	Perchloric Acid (60% solution)
Black Paste Shoe Polish	Phenol (5%)
Black Wax Crayon	Red Food Dye
Blood	Red Lipstick
Blue Ball Point Pen Ink	Soap (5% solution)
Calcium Hypochlorite	Sodium Hypochlorite
Chromic Acid (60% solution)	Tea
Citric Acid (10% solution)	Tincture of Mercurchrome®
Coffee	Toluene
Cresol	Tomato Catsup
Detergent (5% solution)	Trichlorethylene
Dioxane	Trisodium Phosphate (1% solution)
Ethyl Alcohol (50% solution)	Urea (6.6% solution)
Ethyl Acetate	Urine
Gasoline	Vegetable Cooking Oil
Glacial Acetic Acid	Vinegar
Grape Juice	Washable Blue Ink
Hair Dye	Water
Hydrogen Peroxide (3% solution)	
Iodine (1% solution)	

Compositions which COULD stain Formica Surell:*

Dichromate Cleaning Solution	Phosphoric Acid (85%)
Formic Acid (90%)	Potassium Permanganate (2%)
Furfural	Silver Nitrate (10%)
Hydrochloric Acid (37% solution)	Sodium Hydroxide (40%)
Hydrofluoric Acid (48%)	Sodium Sulfide (15%)
Nitric Acid (70% solution)	Sulfuric Acid (77% solution)
Phenolphthalein (1%)	

**Stains can normally be removed.*

LIMITED WARRANTY

Formica Corporation expressly warrants to the purchaser of Formica Surell® solid surfacing material, at its sole option, to repair or replace such product(s) without charge if it fails during the first ten years after installation solely due to a manufacturing defect. This warranty only applies to Formica Surell solid surfacing material which is stored, handled, fabricated and installed in the manner recommended in the *Formica Surell® Solid Surfacing Material Fabrication Guide*. A copy may be obtained from any authorized distributor of Formica Surell solid surfacing material or by calling 1-800-FORMICA™.

This warranty does not cover damage caused by:

1. Failure to follow recommended procedures for storage, handling, fabrication or installation.
2. Physical abuse, damage from excessive heat, or breakage not due to a manufacturing defect in the product(s).
3. Failure of any adhesive, caulk or other accessory, or failure of caulked or filled joint(s) or seam(s).

This warranty is not transferable or assignable and applies only to Formica Surell solid surfacing material:

1. Installed in the United States or Canada on or after March 1, 1989;
2. Which fails solely due to a manufacturing defect; and
3. Which has not been moved from its original place of installation.

To assert a claim under this warranty, write to Formica Corporation, Sales Technical Services, 10155 Reading Road, Cincinnati, OH 45241. Include the phrase "*Formica Surell solid surfacing material, 10-Year Limited Warranty,*" your name, address and a description of the problem. A response will be provided within 60 days.

Formica Corporation's obligation hereunder is limited to the repair or replacement of product(s) installed hereunder, including reasonable and necessary labor charges. Due to the variety of uses and applications to which the product(s) may be put, FORMICA CORPORATION CAN MAKE NO IMPLIED OR EXPRESS WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND CAN MAKE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, OTHER THAN AS SET FORTH HEREIN. EXCEPT AS PROVIDED HEREIN, FORMICA CORPORATION SHALL NOT BE LIABLE IN TORT, CONTRACT, OR OTHERWISE, FOR ANY LOSS OR DIRECT, CONSE-

QUENTIAL, INCIDENTAL, OR EXEMPLARY DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE FORMICA SURELL SOLID SURFACING MATERIAL.

This warranty gives the purchaser of Formica Surell solid surfacing material specific legal rights. Other rights may be available which may vary from state to state.

IMPORTANT NOTICE

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which Formica Corporation assumes legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

MANUFACTURER

Formica Surell solid surfacing material is manufactured by Formica Corporation. Formica Surell products are available through a nationwide network of distributors. For the telephone number of a distributor near you, call 1-800-FORMICA™.

TECHNICAL SERVICES

Technical assistance may be obtained through the local Formica Surell distributor or from Formica Corporation trained representatives in sales offices throughout the country. Supporting information provided through our network of distributors includes a range of technical literature and a comprehensive fabrication guide. To assist these representatives, the company 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 1-800-FORMICA™; or fax (513) 786-3195. In Canada, call 1-800-363-1405. In Mexico, call (525) 530-3135.

