

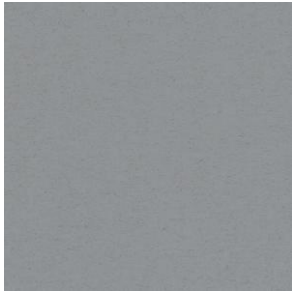
YEMM & HART

GREEN MATERIALS
1417 MADISON 308 MARQUAND MO 63655-9153 USA
TEL 573-783-5434 FAX 573-783-7544 www.yemmhart.com



FLEXISURF Color & Texture Chart

Flexisurf Color & Texture Chart



2801 Light Gray



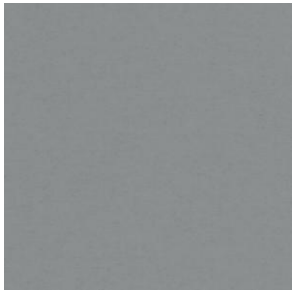
2802 Dark Gray



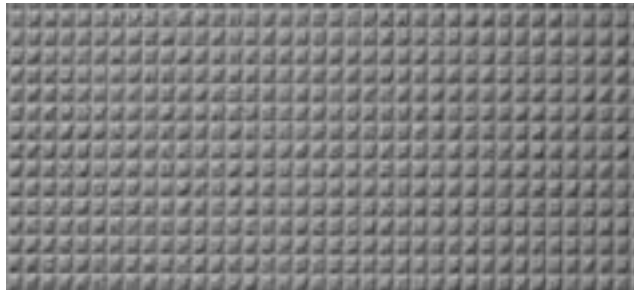
2803 Burgundy



2804 Blue



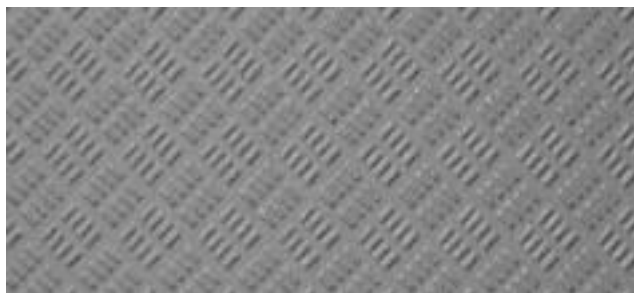
2801 Lt Gray w/Finish



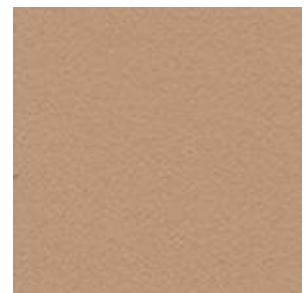
2801 Light Gray Grid



2805 Green



2801 Light Gray Weave



2807 Tan



Flexisurf Introduction

Before Flexisurf, swimming pool covers, industrial roofing membranes and tons of automobile upholstery trim scrap were landfilled. These materials are made of PVC plastic with Polyester strands added to increase overall product rigidity and physical strength. Commingled plastics such as these are practically impossible to separate for recycling but combined as Flexisurf they each play an important part in the material's quality and durability. This retains the many positive attributes that both materials have and which should not be wasted but further utilized.

The materials are collected and sorted by color so that a predictable color of feedstock can be achieved. The material is then granulated and fed into a sheet extruder where color pigment is added. The color penetrates all the way through the material. The light and dark gray colors are available in matte, grid, weave and opti textures. Other colors are available in matte surface only except in larger quantities.

Originally conceived as a recycled resilient industrial flooring, Flexisurf is also finding its way into a variety of other applications such as computer mouse pads, self-healing cutting surfaces and more. Flexisurf is used for furniture components such as ladder treads, tabletop surfaces and other laminate applications where a soft, colorful and environmental material is required.

Flexisurf can be cut with a knife, saw, router, die, water-jet and laser. It can be applied bonded or unbonded to any flat, clean, hard and dry surface. Seams can be welded chemically or by heat to produce watertight joints.

Flexisurf will not shrink, buckle, warp or crack. Flexisurf is easy to clean and maintain. It is stain, chemical, weather, impact and puncture resistant as well as non-corrosive. Flexisurf is treated with Vinyzene® fungicide to resist mold and bacterial growth. The non-skid, resilient surface reduces noise. It is a completely safe, non-toxic material that causes no harm to the environment during its manufacture or use.

As an extruded product, Flexisurf is heated to high temperatures until it becomes molten. When in the heated state, the material off-gases in a controlled situation. Once the material has cooled, its off-gassing is minimal. Sealing and finishing the exposed surfaces of Flexisurf with typical floor care products inhibits any further off gassing. All materials off-gas and all buildings should be properly ventilated. Flexisurf when sealed and finished in a properly ventilated space will not be a factor with regards to indoor air quality. Flexisurf is available with a factory applied UV cured urethane finish.

With these attributes, Flexisurf is excellent alternative flooring for commercial, industrial, institutional and residential buildings. It is also appropriate for exterior applications such as sports, recreational, animal, truck beds, and high traffic areas.

Flexisurf rivals conventional flooring in price, quality, durability and appeal. It deserves serious consideration for specification.

All inquiries are welcome.



FLEXISURF SPECIFICATIONS

1. PRODUCT NAME – FLEXISURF

CSI Division – 9

2. MANUFACTURER

Yemm & Hart Ltd
1417 Madison 308
Marquand MO 63655-9153
Tel: 573-783-5434 Fax 573-783-7544
Email: yemmhart@earthlink.net
Web: www.yemmhart.com



3. PRODUCT DESCRIPTION

Flexisurf is the trade name of a tough, resilient, PVC flooring material. Flexisurf is made from recycled automobile upholstery trim scrap, commercial roof membranes, swimming pool liners mixed with polyester strand reinforcement to increase overall product rigidity and physical strength with a color pigment & fungicide added.

Flexisurf is available with textured surface patterns providing excellent traction even when wet or greasy. Flexisurf is impervious to moisture. Seams may be welded to provide a totally waterproof floor. Cove base, cove base corners and welding rods made from Flexisurf are available for a complete installation.

Flexisurf w/Finish is a UV-cured urethane finish that is factory applied. The factory finish is durable, scratch/scuff resistant and has a glossy appearance.

4. APPLICATIONS

Flexisurf is ideal for heavily traveled environments such as locker rooms, weight rooms, gym floors, laboratories, workshops, garage floors, entrance ways, commercial kitchens, walk-in coolers, factory and plant floors, multipurpose floors and as a temporary gym floor cover.

Flexisurf is used as a self-healing cutting surface and as a veneer covering for table and desktops.

Flexisurf w/Finish may be installed anywhere that a durable glossy wear layer is required such as gym floors, restrooms, lobbies, hallways, etc

5. INSTALLATION

Flexisurf may be installed on most types of clean, dry, level and hard substrates with a special 2-part epoxy adhesive. Flexisurf may be used for interior and exterior applications. Flexisurf w/Finish is recommended for interiors only. Flexisurf is to be installed using normal installation procedures.

6. WARRANTY

Yemm & Hart Ltd guarantees Flexisurf against manufacturing defects for a period of **2 YEARS**.

7. SPECIFICATIONS

Sizes:

Sheet	60" x 96"	(1524mm x 2438.4mm)
Sheet	60" x 60"	(1524mm x 1524mm)
Tile	24" x 24"	(609.6mm x 609.6mm)
Tile	18" x 18"	(457.2mm x 457.2mm)

Thickness: 1/4" (6.35mm), 1/8" (3.175mm) available in all colors. Colors: Select from color chart. Surface Patterns: Matte (all colors), Grid or Weave (Gray only except w/4k sf min). Flexisurf w/Finish available in all standard sizes, colors and patterns except 1/8" (3.175mm) thickness.

8. TRANSPORT

Flexisurf sheets and tiles are shipped flat on a pallet. Small quantities of tiles or rolled sheet are cartoned and shipped via courier. All packaging is reusable & recyclable.

9. MAINTENANCE

Flexisurf may be cleaned using standard floor cleaning practices, except that a power scrubber may be required for high traffic or abusive locations. For ease of maintenance on some interior installations, a urethane coating is recommended. Flexisurf w/Finish may be cleaned using standard cleaning procedures - typically, light mopping or scrubbing is the only cleaning required.

10. CAUTIONS

Prices and availability may change without notice. Flexisurf colors are batch sensitive. Customer is responsible for determining the suitability of this product for their applications.

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FLEXISURF

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Price List

Flexisurf Price List

Standard thickness:
 1/4" or 0.250" (6.35mm)
 Matte texture standard on colors
 4 Textures standard for Grays:
 Gloss, Matte, Grid & Weave

Flexisurf is 100% post-industrial
 recycled PVC & polyester fibers
 from auto upholstery trimmings.

Flexisurf Grays & Colors:
 2801 Light Gray - 2802 Dark Gray,
 2803 Burgundy, 2804 Blue, 2805 Green,
 2807 Tan, 2808 Black, 2809 Terra Cotta

Flexisurf Options by Quotation

1/8" thickness - Less 20%
 1/8" thickness - 4,000 sf minimum order
 Additional sheet sizes:
 30" x 60" (762mm x 1524mm)
 Texture on colors, 4,000 sf min order
Flexisurf is dye-lot sensitive

Flexisurf Sheets:

	1	19
Square Feet:	40	760
60" x 96" (1524 x 2438mm)	\$/Sheet	\$/Sq Ft
Grays:	149.56	3.74
Grays w / Finish:	192.39	4.81
Colors:	211.99	5.30
Colors w / Finish:	249.74	6.24

	20	39
Square Feet:	800	1,560
	\$/Sheet	\$/Sq Ft
Grays:	135.96	3.40
Grays w / Finish:	174.90	4.37
Colors:	192.72	4.82
Colors w / Finish:	227.04	5.68

	40	+
Square Feet:	1,600	+
	\$/Sheet	\$/Sq Ft
Grays:	123.60	\$3.09
Grays w / Finish:	159.00	\$3.98
Colors:	175.20	\$4.38
Colors w / Finish:	206.40	\$5.16

Flexisurf Sheets:

	1	19
Square Feet:	25	475
60" x 60" (1524 x 1524mm)	\$/Sheet	\$/Sq Ft
Grays:	98.46	3.94
Grays w / Finish:	124.78	4.99
Colors:	137.03	5.48
Colors w / Finish:	161.08	6.44

	20	39
Square Feet:	500	975
	\$/Sheet	\$/Sq Ft
Grays:	89.51	3.58
Grays w / Finish:	113.44	4.54
Colors:	124.58	4.98
Colors w / Finish:	146.44	5.86

	40	+
Square Feet:	1,000	+
	\$/Sheet	\$/Sq Ft
Grays:	81.38	\$3.26
Grays w / Finish:	103.13	\$4.13
Colors:	113.25	\$4.53
Colors w / Finish:	133.13	\$5.33

24" Square Cut Tiles:

	1	49
Square Feet:	4	196
24" x 24" (609 x 609mm)	\$/Tile	\$/Sq Ft
Grays:	16.92	4.23
Grays w / Finish:	21.20	5.30
Colors:	23.89	5.97
Colors w / Finish:	26.50	6.62

	50	120
Square Feet:	200	480
	\$/Tile	\$/Sq Ft
Grays:	15.38	3.84
Grays w / Finish:	19.27	4.82
Colors:	21.71	5.43
Colors w / Finish:	24.09	6.02

	121	+
Square Feet:	484	+
	\$/Tile	\$/Sq Ft
Grays:	13.98	\$3.50
Grays w / Finish:	17.52	\$4.38
Colors:	19.74	\$4.94
Colors w / Finish:	21.90	\$5.48

18" Interlocking Tiles:

	1	49
Square Feet:	2	110
18" x 18" (457 x 457mm)	\$/Tile	\$/Sq Ft
Grays:	9.52	4.23
Grays w / Finish:	11.92	5.30
Colors:	13.44	5.97
Colors w / Finish:	14.91	6.62



	50	120
Square Feet:	113	270
	\$/Tile	\$/Sq Ft
Grays:	8.65	3.84
Grays w / Finish:	10.84	4.82
Colors:	12.21	5.43
Colors w / Finish:	13.55	6.02



	121	+
Square Feet:	272	+
	\$/Tile	\$/Sq Ft
Grays:	7.86	\$3.50
Grays w / Finish:	9.86	\$4.38
Colors:	11.10	\$4.94
Colors w / Finish:	12.32	\$5.48

Prices and availability may change without notice.

Payable by check drawn on US bank, COD or major credit cards.

Flexisurf weight calculation formula: L" x W" x T" x 0.04672 = #

Sheets are palletized flat and shipped LTL NMFC - 070970-11, class 60.

Tiles are cartoned and shipped courier or LTL depending upon quantity. Single sheets can be rolled and shipped via courier.

Customer is responsible for determining suitability of these products for their applications. Thank you for considering recycled!



Credit Card Fee	up to 5%
COD Fees	\$5 +
Pallets	\$75
Cartons	\$25

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FLEXISURF

Accessory Price List

Flexisurf Accessories - For a complete installation

Adhesives

PA 127	2-Part Epoxy, 70 - 100 Sq Ft / gal	1 gallon kit	\$124.19
PA 139	2-Part Fast Setting Epoxy, 70 - 100 Sq Ft / gal	1 gallon kit	133.34

Floor Finish (non-Strippable) and Accessories

Hydroline Water-Based Urethane Finish - 700 Sq Ft / gal	1 gallon container	\$200.82
Floor Coater Applicator Kit w/Pad, Handle & Coating Tool	Kit	105.83
Replacement Pad Only	Each	42.61

Floor Finish (Strippable)

Taski Profi	1 Coat	Coverage 1000 sf/gal	1 gallon	\$49.52
Taski Undercover	1 Coat	Coverage 1000 sf/gal	1 gallon	47.70
Taski Vision Mat	3-4 Coats	Coverage 1000 sf/gal	1 gallon	50.88
			5 gallon	221.30

Seam Sealer

Seam Sealer (coverage 500 linear feet)	1 pint	\$52.89
Professional Applicator Bottl w/ Stainless Steel Tip	Each	115.22

Welding Rod

Welding Rod 5.5mm - Grays	10 Lb roll @52.5 Lin Ft/Lb	Roll	\$188.27
Welding Rod 5.5mm - Colors	10 Lb roll @52.5 Lin Ft/Lb	Roll	211.13
6 mm Round Speed Tip (heat welding)		Each	229.83
Gloss Welding Rod 4.2mm - All colors	174 Ft Rolls	Roll	102.29
4 mm Gloss Welding Tip		Each	229.83

Cove Base

1/4" x 6" x 60"	Grays - Matte Only	\$/Lin Ft	10.33	Each	51.64
1/4" x 6" x 60"	Colors - Matte Only	\$/Lin Ft	13.21	Each	66.05

Cove Base Corners - Inside & Outside

1/4" x 6" x 18"	Grays - Matte Only	Each	57.11
1/4" x 6" x 18"	Colors - Matte Only	Each	72.20

Prices and availability may change without notice.

Payable by check drawn on US bank, COD or major credit cards.



Credit Card Fee	up to 5%
COD Fees	\$5 +
Pallets	\$50
Cartons	\$15

Order accessories with Flexisurf sheet or tile to insure all will ship at the same time.

Accessories are cartoned and shipped via courier or LTL depending upon quantity.

Customer is responsible for determining suitability of these products for their applications. Thank you for considering recycled !

Flexisurf Installation

Detailed Installation Instructions may be found in the **FLEXISURF Install** section/booklet.

Where To Install: Flexisurf sheet or tiles may be installed on any clean, dry hard interior or exterior surface. Flexisurf sheet or tiles may be installed bonded or unbonded. A completely flat and smooth subfloor will produce the most satisfactory results.

When to Install: Flexisurf should be fully acclimated before installation. Installation should not begin until the work of all other trades has been completed and the area cleared of extraneous materials. If the job conditions are such that the floor must be installed before other trades have completed their work, the installed flooring should be covered with a suitable protective covering.

Characteristics: Flexisurf sheet or tiles are batch sensitive and directional. If additional material may be required in the future, it is advisable to purchase it with the initial order. Each sheet or tile is marked with the machine direction with the exception of the Interlocking Tiles.

Layout and Design: Flexisurf sheet and 24" square cut tiles are recommended to be installed in a staggered-joint pattern whenever possible. A dry layout prior to adhering and/or seam sealing is recommended for all installations.

Edging: Flexisurf sheet comes pre-edged; however, it is always advisable to check the edges before installing. In certain situations, to achieve tighter seams, it may be necessary to trim the sides and/or ends of Flexisurf. The material cuts best, one sheet at a time using a utility knife and metal straight edge.

Recommended Adhesive: Based upon numerous tests and field reports, Yemm & Hart recommends using a specially blended 2-part epoxy adhesive for the most successful installation. A bond test is always recommended before the installation process begins. The only adhesive recommended is available from Yemm & Hart.

Material Handling: Flexisurf, a heavy flexible material, is not difficult to install if the material is dry fit on the properly prepared subfloor. Adhesive application is simply achieved by peeling back half of the sheet, spreading the adhesive, laying the material into the adhesive and repeating the process for the other half of the sheet. Flexisurf 24" x 24" square cut tiles should be fully adhered for a satisfactory installation.

Further Details: The booklet/section titled, **FLEXISURF Install**, discusses in detail, such topics as adhesive preparation, spread rates, open times and pressure rolling. Flexisurf seams can be welded with PVC cold-welding solution or heat welded with special equipment. Subsurface preparation, layout, design, adhesive application, chemical/heat seam sealing, drains and decoration are discussed thoroughly in the **FLEXISURF Install** section/booklet.

Warranty: Yemm & Hart offers a 2-year warranty on Flexisurf material if properly installed.

Flexisurf Maintenance & Care

Detailed Maintenance and Care Instructions may be found in the **FLEXISURF Install** section/booklet.

Protection Recommended: To protect the Flexisurf installation and keep it looking good for years, Yemm & Hart recommends coating the newly installed floor with the recommended non-strippable floor finish or certain strippable finishes before traffic is allowed. When this is not possible, soil from foot traffic or other construction debris should be cleaned off with a cleaner/degreaser and vacuum.

Finish Application: Finish should be applied as soon as possible for unbonded installations and on bonded installations only after allowing adhesive to set properly according to manufacturer's instructions. The Flexisurf installation should be cleaned thoroughly and allowed to dry prior to any finish application. Follow coating manufacturer's recommendations for application. Finishing is not recommended for outdoor installations.

Recommended Finishes: Yemm & Hart recommends for a non-strippable finish Hydroline Wood Floor Finish - Satin 4X0310 vinyl/sports floor finish for the most successful maintenance and care. This catalyzed finish is available from Yemm & Hart:

When a strippable finish is preferred, Yemm & Hart recommends the Taski brand of floor care products that are available from Yemm & Hart:

Maintenance: Flexisurf installed indoors with a finish applied, should be cleaned and maintained in accordance with the finish manufacturer's recommendations. Otherwise maintenance of the floor by damp mopping with a neutral cleaner is acceptable. A power scrubber or buffer may be used on fully bonded installations following the finish manufacturer's instructions for cleaning. Flexisurf installed outdoors may be cleaned with mild detergent, nylon bristle scrub brush and water. Ensure all soap residue is rinsed from the Flexisurf before allowing to dry. Power washing using medium pressure nozzles may also be utilized for outdoor installations. Stripping removes strippable floor finish and should only be done when renewal of finish no longer produces satisfactory results.

General Precautions: Care should be exercised when moving or relocating equipment over Flexisurf sheet or tiles to prevent damage to the floor. Do not scrub or strip fully bonded floors until at least 4 or 5 days after installation so that the Flexisurf will have become well seated in the adhesive. The use of pads, wide casters/rollers, furniture/equipment cups may prevent excessive indentation. The performance and guarantee of the products used in preparation, testing, installation and maintenance of Flexisurf, during and after installation, remain with the manufacturer of said product and not Yemm & Hart.

Recommended Floor Care Products: The recommended floor care products to be used on Flexisurf installations are manufactured by Basic Coatings and Lever/Taski. Numerous floor care products manufactured by other companies and not specifically recommended by Yemm & Hart may also produce satisfactory results.

Additional Information: Request or review the **FLEXISURF Install** guide to gain the detailed information required for successful Flexisurf maintenance and care.

Chemical Resistance Tests to Date:

Acid Rain
Acrylic Paint
Aluminum Chloride
Ammonium Hydroxide
Ammonium Chloride
Ammonium Nitrate
Ammonium Sulfate
Amyl Acetate
Aniline
Battery Acid
Beef Fat
Beer
Benzoic Acid
Bird Droppings
Bleach
Borax
Boric Acid
Brick & Masonry Cleaner
Butyric Acid
Butter
Butyl Acetate
Calcium Chloride
Calcium Hydroxide
Calcium Hypochlorite
Chromic Acid
Coconut Oil
Coffee
Cooking Grease
Copper Sulfate
Corn Oil
Cotton Seed Oil
Cutting Oil
Detergent Solution
Diatomaceous Earth
Diglycoic Acid
Diethyl Phthalate

Ethyl Alcohol
Ferric Chloride
Fertilizer Solution
Fiberglass Mat
Formaldehyde
Fruit Juice
Furnace Residue
Gasoline
Glyoxal
Hydrogen Peroxide
Ice Cream
Incinerator Ashes
Jet Fuel
Kerosene
Lacquer Spray Paint
Lanolin
Lard
Latex Paint
Lactic Acid
Linseed Oil
Malic Acid
Methyl Alcohol
Milk
Mineral Oil
Mineral Spirits
Mud
Muriatic Acid
Naphtha
Naphthalene
Oleic Acid
Olive Oil
Oxalic Acid
Palm Oil
Paper
Perchloroethylene
Phosphoric Acid

Phthalic Acid
Polyethylene
Polypropylene
Potassium Chloride
Pork Fat
Rain
Salt
Salt Water
Sea Water
Sewer Sludge
Soda Pop
Sodium Hydroxide
Sodium Hypochlorite
Soldering Acid
Soldering Flux
Soybean Oil
Stones
Succinic Acid
Tea
Tannic Acid
Tree Sap
Triacetin
Trichloroacetic Acid
Trichloroethylene
Triethanolamine
Triethylene Glycol
Urea
Urine
Vegetable Oil
Whiskey
Wine
Yeast
Yogurt
Zinc Chloride
Zinc Nitrate

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Flexisurf Fire Testing Data

FLEXISURF was tested according to ASTM E84-91a Standard Test Method for Surface Burning Characteristics of Building Materials. This test method is also published under the following designations: NASI 2.5, NFPA 255, UBC 42-1 and UL 723.

Test Objective: The ASTM E84-91a (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from the tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface (18" wide by 24 feet long) is exposed to a flaming fire exposure, adjusted to cause a 25-foot spread of flame along a red oak calibration specimen in 5.5 minutes. During the 10-minute test duration, flame spread over the specimen surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials. The mineral fiber/cement board forms the zero point, while the red oak flooring is set as 100 for smoke measurements. Thus, with a relative zero established by the non-combustible cement board, all test specimens are compared to select grade red oak flooring, and the results expressed as Flame Spread Index and Smoke Developed Index.

Test Results:	<u>Flame Spread Index</u>	<u>Smoke Developed Index</u>	Specimen Data:	<u>Specimen</u>	<u>Red Oak</u>
Mineral Fiber/Cement Board	0	0	Flexisurf Thickness	00.250	
Red Oak Flooring	100	100	Time to Ignition (min:sec):	00:24	00:50
Flexisurf	20	1110	Time to Max. Flame Spread (min:sec):	09:28	
			Max. Flame Spread (ft):	6.0	
			Max. Temperature (deg. F):	599	
			Time to Max. Temperature (min:sec):	10:00	
			Flame Spread x Time Area (min x ft):	37	
			Smoke x Time Area (min x %s):	930	84
			Temperature x Time Area (min x deg. F):	4764	9381
			Unbounded Flame Spread Index:	18.89	
			Unbounded Smoke Developed Index:	1107.72	
			Total Fuel (natural gas) Consumed (ft ³):	47.65	
			Temperature x Time Area for GRC Board (min x deg. F):	5653	

Conclusion:

Flexisurf meets the UL Class 1 for Flame Spread but does not meet UL Class 1 for Smoke Developed. Smoke content: HCL, CO and CO₂

FLEXISURF was tested according to ASTM E-648 "critical radiant flux of floor covering systems, using a radiant heat energy source". To pass the test, the critical radiant flux (CRF) must be larger than 0.12 w/cm². The CRF is related to the time of burn, the distance of the burn and the heat required to sustain a flame. The CRF will be less than 0.12 w/cm² if the burn distance is more than 90 cm. As you can see from the report, the minimum CRF achieved was .61 w/cm² and the maximum burn distance was 34 cm. In essence, the Flexisurf product was tested at UL and the determination was made that the materials passed this ASTM E-648 test well within acceptable limits. It should be understood that the results as shown below apply only to the particular samples submitted for testing. The test results indicated in this Report are not intended to imply Listing, Classification or other Recognition of any product or materials.

Test #	Sample Type	Burn Time (mins)	Total Burn Distance (cm)	Critical Radiant Flux (w/cm ²)
1	1/8" grid	8:00	13	0.99
2	1/4" grid	12:38	10	1.01
3	1/8" matte	13:04	34	0.61
4	1/4" grid	13:20	20	0.89

The products tested under this Preliminary Investigation are not covered under the Follow-Up Service Program of Underwriters Laboratories Inc. The Classification Marking of Underwriters Laboratories Inc on the product is the only method provided by Underwriters Laboratories Inc to identify products, which have been produced under its Classification and Follow-up Service. No use of a Classification Marking has been authorized as a result of this investigation. In no event shall Underwriters Laboratories Inc be responsible to anyone for whatever use or non-use is made of the information contained in this Report and in no event shall Underwriters Laboratories Inc, its employees, or its agents incur any obligation or liability for damages, including, but not limited to, consequential damages, arising out of or in connection with the use, or inability to use, the information contained in this Report.

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FLEXISURF

Typical Properties

Flexisurf Typical Properties

<u>Material History</u>			
Feed Stock	100% Post Consumer/Industrial		
Primary Source	Commercial and Industrial		
Note: Standards may change with changes in the automotive and roofing industry.			
<u>Component Material Name</u>		<u>Estimated Percentage</u>	
Polyvinyl chloride (PVC)		90% +	
Polyester strands		10%	
Special additives: The fungicide Vinyzene® is incorporated into the material.			
<u>Technical Specifications</u>	<u>ASTM Method</u>	<u>Units</u>	<u>Value</u>
Bacterial & Mildew Resistance	ASTM G-21		Excellent
Specific Gravity	ASTM D792	Lbs/ft ³	0.952
Thickness	ASTM D751	in	0.250
Weight	ASTM D-751	oz/sq ft	25.16
Shore A Hardness			80-85 Average
Break Strength (machine direction)	ASTM D-751	Lbs	405
Break Strength (cross machine direction)	ASTM D-751	Lbs	723
Elongation (machine direction)	ASTM D-751	%	76.5
Elongation (cross machine direction)	ASTM D-751	%	88.5
Tear Strength (machine direction)	ASTM D-751	Lbs	76.5
Tear Strength (cross machine direction)	ASTM D-751	Lbs	84
Dimensional Stability	ASTM D-1204	%	<1
Thermal Expansion	ASTM E-831	in	15.4 x 10 ⁶
Receptivity	ASTM C-657	ohm/cm	4.9 x 10 ⁹
Coefficient of Friction (matte)	ASTM D-2047	dry/wet	0.88/0.92
Coefficient of Friction (grid)	ASTM D-2047	dry/wet	0.92/0.92
Compressive Strength @20% def	ASTM D-695	psi	641
Water Absorption	ASTM D-570	%	0.289
Sound Transmission Class	ASTM E90-90	dB	30
Fire Test on 0.25" grid finish (see Fire Testing Data for more information)			
Critical Radiant Flux	ASTM E-648	w/cm ²	0.89
Burn Distance	ASTM E-648	Cm	20
Flame Spread Index	ASTM E-84-91a		20
Flexisurf meets the requirements for CLASS A flame spread for flooring.			
All information given herein is offered in good faith as representative of the characteristics found in materials listed herein. Physical property measurements are typical values only and are subject to normal variations in test method and product manufacture. No guarantees are expressed or implied and Yemm & Hart Ltd assumes no liability.			

YEMM & HART

FLEXISURF

GREEN MATERIALS

1417 MADISON 308 MARQUAND MO 63655-9153 USA
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Material Safety Data Sheet

SECTION 1 - PRODUCT IDENTIFICATION & EMERGENCY INFORMATION

SUPPLIER: **YEMM & HART LTD** EMERGENCY TELEPHONE NO: **573-783-5434**
CHEMICAL NAME: **Polyvinyl chloride (PVC)** REGULAR TELEPHONE NO: **573-783-5434**
CHEMICAL FAMILY: **Plasticized Polyvinyl chloride** PERCENTAGE (%) **90** CAS NUMBER: **N/A**
TRADE NAMES: **Flexisurf**

SECTION 2 - TYPICAL CHEMICAL & PHYSICAL PROPERTIES

APPEARANCE: **Waxy Solid** ODOR: **Mild characteristic odor**
BOILING POINT: **N/A** MELTING POINT: **482° F (250° C)**
VAPOR PRESSURE - mm Hg 20C: **N/A** SPECIFIC GRAVITY gr/cc (WATER = 1): **.97**
VAPOR DENSITY (AIR = 1): **>10** PERCENT VOLATILE BY VOLUME (%): **<0.4**
SOLUBILITY IN WATER % BY WEIGHT: **Insoluble** EVAPORATION RATE (BUTYL ACETATE = 1): **N/A**
FORMULA: **(CH₂-CHCL)_N Mixrure** pH: **N/A** VOC: **N/A**

SECTION 3 - POTENTIALLY HAZARDOUS INGREDIENTS

MATERIAL: **N/A** PERCENTAGE (%): **N/A** TLV-TWA VALUES ADOPTED BY ACGIH: **N/A**

SECTION 4 - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: **Subjecting this material to temperatures above 250°F may liberate modest amounts of plasticizer. At temperatures above 400°F the product may decompose to CO, CO₂, HCL and other gasses. This product contains 18-30% mixed phthalate esters. These plasticizers have low toxicity. ACGIH and OSHA have not established specific exposure limits for these plasticizers. Chemically similar plasticizers have ACGIH and OSHA exposure limits of: THRESHOLD LIMIT VALUE: 5 mg/m³, 8 hrs TWA**

SECTION 5 - EMERGENCY FIRST AID PROCEDURES

EYE CONTACT: **Flush thoroughly with water. If irritation persists, call a physician.**
SKIN CONTACT: **If hot material contacts skin, flush with cold water and secure treatment of thermal burn.**
INHALATION: **Problems not expected.**
INGESTION: **Problems not expected when ingested, if uncomfortable seek a physician.**

SECTION 6 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: **440° F (227° C) (ASTM D56)** AUTOIGNITION TEMPERATURE: **440° F (227° C)**
FLAMMABLE LIMITS IN AIR % x VOLUME - LEL: **N/A** UEL: **N/A**

EXTINGUISHING MEDIA: **Carbon dioxide, foam, dry chemical and water fog.**

SPECIAL FIRE FIGHTING PROCEDURES: **Water or foam may cause frothing. Use water to keep fire exposed materials cool. Use standard chemical fire fighting procedures. For fires in enclosed areas, firefighters must use self-contained breathing apparatus. Prevent fire control or dilution runoff from entering streams, sewers or drinking water supply.**

UNUSUAL FIRE AND EXPLOSION HAZARDS: **Exposure to fire can generate highly toxic fumes. Dust may be flammable when finely divided and suspended in the air.**

NFPA HAZARD ID: HEALTH: **1** FLAMMABILITY: **1** REACTIVITY: **0**

SECTION 7 - REACTIVITY DATA

STABILITY (THERMAL, LIGHT, ETC.) - STABLE: **Yes** UNSTABLE: **No** CONDITIONS TO AVOID: **Extreme heat**
INCOMPATIBILITY (MATERIALS TO AVOID): **Strong Oxidizers**
HAZARDOUS DECOMPOSITION PRODUCTS: **Carbon monoxide, carbon dioxide, hydrochloric acid**
HAZARDOUS POLYMERIZATION - MAY OCCUR: **WILL NOT OCCUR: X** CONDITIONS TO AVOID: **None Known**

SECTION 8 - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: **Sweep up and collect as harmless organic waste.**
WASTE DISPOSAL METHOD: **Recycle, landfill or incineration in accordance with regulations.**

SECTION 9 - SPECIAL PROTECTION INFORMATION

EYE PROTECTION: **When cutting, drilling or sanding** PROTECTIVE GLOVES: **When handling hot material**
RESPIRATORY PROTECTION (SPECIFY TYPE): **When cutting or sanding, approved dust respirators must be worn.**
VENTILATION: **Use adequate ventilation when cutting, sanding or welding.**
OTHER PROTECTIVE EQUIPMENT: **N/A**

SECTION 10 - SPECIAL PRECAUTIONS

HANDLING: **Thermo degradation products of PVC may include carbon monoxide, carbon dioxide, hydrochloric acid.**
STORAGE: **Store in a cool area.**
PRECAUTIONARY LABELING: **N/A**

SECTION 11 - TOXICOLOGICAL DATA - Acute toxicology

TOXICITY: ORAL (RATS), DERMAL (RABBITS), INHALATION (RATS): **Nontoxic - Based on testing of similar products and/or components.**
EYE & SKIN IRRITATION (RABBITS): **Non-irritating - Based on testing of similar products and/or components.**

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