

Product Description

3form Varia is a dynamic interlayer system with design possibilities as diverse as your imagination. By allowing you to custom-select the color, pattern, texture, interlayer and finish of your material, Varia transforms into the perfect medium for your architectural application.

An award-winning 3form product, Varia has the added benefit of being made from a specially-formulated co-polyester resin that combines performance with environmental responsibility. Varia incorporates 40% pre-consumer recycled content without compromising aesthetics or overall physical properties, is compatible with one of the largest post-consumer recycle streams, and is GREENGUARD® Indoor Air Quality Certified.

FEATURES AND BENEFITS

- Produced on an individual order basis, allowing for creative design and product selection (minimum order quantity – ONE sheet!)
- Heat-formable into virtually any shape or size for eye-catching installations
- SCS-certified recycled content helps achieve LEED® credits for building sustainability
- Very tough, allowing for easy fabrication and maximum installed durability
- Extremely versatile which enables designers to achieve full design potential
- Lightweight, half the density of glass, which makes for easier installation and reduces structural support requirements
- Excellent chemical resistance which reduces potential harm incurred by cleaning agents
- Varia is GREENGUARD Indoor Air Quality Certified
- Varia is Underwriters Laboratories registered

AVAILABLE INTERLAYERS AND COLORS

Varia is available in a variety of standard interlayer and color options. Visit 3-form.com for all available options.

TEXTURES AND FINISHES

Each product in the Varia collection comes standard with both a front and back finish. Additionally, 3form provides the option of substituting between standard finishes. In most cases, you can even pick different front and back finishes.

Finishes include:

- **Grain** - Refined organic detail in a translucent wood grain finish. The pattern direction runs parallel to the eight foot side of the panel.
- **Grid** - Fine, horizontal crosshatched lines create a subtle texture.
- **Patent** - A high gloss finish with highest light transmittance
- **Patina** - A non-glare finish with smooth appearance
- **Sandstone** - A more durable finish with a subtle texture

- **Stucco** - A durable finish with a pebbled texture
- **Supermatte** - A frosted matte finish for maximum light diffusion
- **Vellum** - A random brushed matte finish similar to the 3form renewable matte finish.
- **Velvet** - Durable blurred finish with a crushed velvet appearance. The pattern direction runs parallel to the four foot side of the panel.

Varia panels are offered in 4' x 8' (1.2 m x 2.4 m) and 4' x 10' (1.2 m x 3 m). All dimensions and squareness are subject to a 3/16" (4.7 mm) tolerance. 5' x 10' (1.5 m x 3 m) is also available, though some restrictions apply.

Varia is available in gauges from 1/16 inch to 1 inch.

NOMINAL THICKNESS GAUGE	MINIMUM ALLOWANCE GAUGE	MAXIMUM ALLOWANCE GAUGE
1/32" (0.79 mm)	0.027"	0.036"
1/16" (1.5 mm)	0.054"	0.072"
1/8" (3.1mm)	0.098"	0.138"
3/16" (4.7 mm)	0.155"	0.205"
1/4" (6.3 mm)	0.196"	0.306"
3/8" (9.5 mm)*	0.304"	0.434"
1/2" (12.7 mm)	0.412"	0.562"
3/4" (19.0 mm)	0.618"	0.798"
1.0" (25.4 mm)	0.850"	1.090"

*Add +/- 1/32" (+/-0.8 mm) to the above tolerance for hint textured sheets.

**Add +/- 3/16" (+/-4.7 mm) to the above tolerance for all embossed texture sheets.

Sheet tolerance readings are based on an average of several measurements along both long edges of each panel. These measurements are taken 2-3 inches (50-75 mm) from the edges of the panel.

PATTERN SKEW TOLERANCE

Linear patterns in Varia panels have a skew tolerance of 1/4" skew over 48". Panels containing a pattern (Capiz, Timber, etc.) will not match up from sheet to sheet. If the sheets are intended to match, they should be field cut on-site to a smaller final sheet dimension. HiRes panels will have an alignment tolerance of 1/4" from sheet to sheet.

FLATNESS TOLERANCE

Varia panels shall not have distortion in the form of a wrinkle, twist or scallop along the perimeter of the sheet. Overall warp extending across the sheet is permitted to a maximum of 9/32" (7.14 mm) for each 48" (1.2 m) or fraction thereof. Panel is to be measured when laying horizontally under its own weight on a flat continuous surface.

Specifications

FLAMMABILITY & SMOKE TEST RESULTS –

BUILDING CODE APPROVALS

Varia has been independently tested and meet the criteria for approved interior finishes and light transmitting resin materials as described in the 2018 International Building Code®.

TEST	3FORM VARIA	RESULT
ASTM D 2843 Smoke Density	71.6%	PASS Less than 75
ASTM D 635 Flame Spread	Self extinguishing	PASS CC1
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
UL94	Flame Class - HB	PASS
UPITT Mortality Test	PASS	Not more toxic than wood
NFPA 286 1/4" thickness + below (walls only or ceilings only) 3/8" thickness + below (walls in standoff configuration or ceilings only)	Pass Pass	Pass Pass
The NFPA 286 corner burn test is accepted by the 2018 IBC for interior finishes. Passing the NFPA 286 test allows for materials to be utilized where Class A materials are required (IBC 803.1.2).		
ASTM E84 Flame Spread, 1/8" thickness Smoke generated	0 190	Class A: 0-25 <450
ASTM E84 Flame Spread, 3/16" thickness Smoke generated	25 250	Class A: 0-25 <450
ASTM E84 Flame Spread, 1/4" thickness Smoke generated	65 425	Class B: 26-75 <450
ASTM E84 Flame Spread, 1/2" thickness Smoke generated	55 400	Class B: 26-75 <450
ASTM E84 Flame Spread, 3/4" thickness Smoke generated	35 450	Class B: 26-75 <450
ASTM E84 Flame Spread, 1" thickness Smoke generated	20 250	Class A: 0-25 <450

Due to their specialty construction, 3form Dichroic, Reflect and 3form Wood have their own unique set of fire performance results.

TEST	3FORM DICHROIC/REFLECT	RESULT
ASTM D 2843 Smoke Density	47.5%	PASS Less than 75
ASTM D 635 Flame Spread	17.4 mm/min	PASS CC2
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
ASTM E84 Flame Spread, 1/4" thickness Smoke generated	65 450	Class B: 26-75 <450

TEST	3FORM TIMBER	RESULT
ASTM E84-03 Flame Spread, 3/8" thickness Smoke generated	75 450	Class B: 26-75 <450

PANEL WEIGHT

THICKNESS (INCHES)	WEIGHT FLUX (LB/FT ²)
1/32" (.79 mm)	0.2 lb/ft ² (1.0 kg/m ²)
1/16" (1.5 mm)	0.4 lb/ft ² (2.0 kg/m ²)
1/8" (3.1 mm)	0.8 lb/ft ² (3.9 kg/m ²)
3/16" (4.7 mm)	1.2 lb/ft ² (5.9 kg/m ²)
1/4" (6.3 mm)	1.7 lb/ft ² (8.3 kg/m ²)
3/8" (9.5 mm)	2.5 lb/ft ² (12.2 kg/m ²)
1/2" (12.7 mm)	3.3 lb/ft ² (16.1 kg/m ²)
3/4" (19.0 mm)	5.0 lb/ft ² (24.4 kg/m ²)
1.0" (25.4 mm)	6.6 lb/ft ² (32.2 kg/m ²)

EXPANSION/CONTRACTION ALLOWANCES

Like all resin products, 3form Varia will expand and contract nominally with fluctuations in temperature. The following formula provides allowances that should be made in framed or fitted applications:

- Longest length of panel (inches) x temperature change of the sheet (°F) x 0.00004 = Amount of Linear Expansion/Contraction (inches)

Example:

- 48" x 96" panel experiencing 50°F temperature change will expand/contract: 96 inches x 50 degrees x 0.00004 in/in °F = 0.192 inches Installers should take extra precautions if installation is occurring before the HVAC systems are operational. Allowances should also be made in the following situations:
 - Fastening points
 - Channel depths in frames
 - Holes for standoffs and other hardware
 - Meeting points for multiple sheets of 3form Varia

USAGE LIMITATIONS

DO NOT use cyanoacrylate or solvent type thread locking materials with Varia. To more permanently secure hardware, use the recommended products from the 3form adhesives matrix."

REFLECT

When using Varia Reflect in pressure fitting applications, such as stand-off supports, use a pressure distribution plate or neoprene gasket to prevent localized panel separations.

Varia Reflect cannot be heat formed.

DICHROIC

3form Dichroic has an inherent liness running parallel to the panel length. The 3form Dichroic interlayer is very delicate, it is not recommended for use in exterior applications.

DO NOT cut Dichroic with a jigsaw, scroll saw, or waterjet.

When using Dichroic in pressure fitting applications, such as stand-off supports, use a pressure distribution plate or neoprene gasket to prevent localized panel separations.

NATURALS

Varia panels utilizing natural or organic materials (ie. leaves, branches or twigs) may change in appearance over time. Natural materials are also subject to inherent inconsistency in color, texture and shape. Small areas of delamination are also to be expected, especially near saw cut edges.

METALLICS

Varia panels utilizing metallic interlayers (ie. Hollywood, Electra, Itemba, Mirror print) may change in appearance over time due to antiquing of the metallic materials.

TIMBER

Because 3form Timber is produced from engineered wood products, it is not recommended for use in high moisture or exterior applications. Wood products are very responsive to environmental conditions (moisture, humidity, temperature changes) and therefore is restricted to interior applications. Wood pieces in Timber may contain knots, imperfections, dark spots, stains and color variation.

After trimming, the following treatments improve the edge aesthetics.

Natural: Sand edges with 220 grit sandpaper and carefully wipe the edges with Weld-On 3 (or MEK) making sure not to get any of the chemical on the face or back of the sheet.

Mocha: Sand edges with 220 grit sandpaper and carefully wipe the edges with Minwax Special Walnut 224 stain.

OTHER

Birch will sometimes bleed and cause small amounts of yellowing while being manufactured. In addition, due to the manufacturing press process, birch bulbs may be dispersed within the sheet, some of which will be trapped in clear areas for the Birch Grove pattern.

Structured Bamboo is a one-sided product.

FABRICATION

Do not drill or fasten the Varia within 2x thickness of panel edge. See the 3form Varia Fabrication Manual for more detailed guidelines and instructions on cutting, drilling, routing, etc. of Varia panels.

EDGE SEALING

Certain Varia designed layers (organics, papers and fabrics in particular) can have a tendency to wick moisture over time if the edges become wet and are not adequately sealed. These Varia products should not be exposed to water or wet conditions without first applying an approved edge sealing treatment. Varia produced using C3 or HighRes do not require edge sealing. These are good options to use as an alternative to Woven Colors and Organics. Edge sealing is required on all exposed edges (including any holes that are created to allow for stand-off fastening). There are some designed Varia Woven Colors that do not exhibit wicking behavior and therefore do not need to be edge sealed. If you have additional questions or concerns regarding edge sealing of 3form products please contact 3form.

DEFLECTION

3form Varia will exhibit different amounts of deflection given a variety of factors: fastening techniques, loads, gauges and panel dimensions to list a few. 3form can assist you with general deflection guidelines for your application. You may also consult the Varia Deflection Charts technical white paper. If your application has specific engineering requirements, please contact 3form for additional direction.

HEAT FORMING/COLD BENDING

Varia can be cold bent for simple bends and curved areas. As a general rule, a minimum radius of 100 times thickness is acceptable for Varia (will depend on interlayer material). A minimum radius of 250 times thickness should be used for Dichroic. A minimum radius of 200 times thickness should be used for Timber (with the bending axis parallel to the wood slats).

Heat formed Dichroic panels will have a finished size 6" less on each dimension than the standard size sold.

STANDARD SIZE	SIZE AFTER FORMING
48" x 96"	42" x 90"
48" x 120"	42" x 116"

PANEL THICKNESS	MINIMUM COLD BEND RADII		
	VARIA	DICHRIC/REFLECT	WOOD
1/16" (1.5 mm)	7" (178 mm)	-	-
1/8" (3.1 mm)	12" (305 mm)	32" (813 mm)	24" (610 mm)
3/16" (4.7 mm)	19" (483 mm)	47" (1194 mm)	37" (950 mm)
1/4" (6.3 mm)	25" (635 mm)	63" (1600 mm)	50" (1270 mm)
3/8" (9.5 mm)	37" (940 mm)	94" (2388 mm)	75" (1905 mm)
1/2" (12.7 mm)	50" (1270 mm)	125" (3175 mm)	100" (2540 mm)
3/4" (19.0 mm)	75" (1905 mm)	188" (4775 mm)	150" (3810 mm)
1" (25.4 mm)	100" (2540 mm)	250" (6350 mm)	200" (5080 mm)

Because of its low thermoforming temperature, Varia is easy to line bend or drape form. For specific details on line bending and heat-forming please consult the 3form Varia Fabrication Manual.

The special construction of 3form Dichroic and Wood introduces challenges in terms of heat forming. Because both are rigid interlayers, complex curvature is not possible. Simple curves and bends may be accomplished. Timber can only be heat-formed in simple curves, perpendicular to the direction of the wood. Minimum heat forming radius for Timber is 48".

For highly complex shapes and curves, consult with or employ the services of the experts in 3form Fabrication.

EDGE FINISHING

Edges of 3form Varia panels are able to be machined or routed into a variety of different forms. In addition to a straight edge, edges may accept beveling, rounding, etc. Additional finishing, such as sanding or polishing, can also be provided to some edges.

Selected Mechanical and Physical Properties for 3form Varia

Values reported for Varia with no decorative inserts. Decorative inserts may increase or may decrease specific test results. Should your application require specific test values, consult the 3form Product Technology Department.

		TYPICAL VALUE			
		0.118" (3 MM)		0.236" (6 MM)	
PROPERTY*	ASTM METHOD	SI	U.S.	SI	U.S.
GENERAL					
Density	D 1505	1,270 kg/m ³	79 lb/ft ³	1,270 kg/m ³	79 lb/ft ³
Water Absorption	D 570 23° C (73° F), 24h immersion	0.2%	0.2%	0.1%	0.1%
MECHANICAL					
Tensile Stress @ Yield	D 638	53 MPa	7,700 psi	53 MPa	7,700 psi
Tensile Stress @ Break	D 638	26 MPa	3,800 psi	26 MPa	3,800 psi
Elongation @ Yield	D 638	4.8%	4.8%	5.0%	5.0%
Elongation @ Break	D 638	50%	50%	40%	40%
Tensile Modulus	D 638	2,200 MPa	320,000 psi	—	—
Flexural Modulus	D 790	2,100 MPa	310,000 psi	2,000 MPa	290,000 psi
Flexural Strength	D 790	77 MPa	11,200 psi	83 MPa	12,000 psi
Shear Strength	D 732	62 MPa	9,000 psi	62 MPa	9,000 psi
Shear Modulus	—	793 MPa	115,000 psi	—	—
Rockwell Hardness	D 785	115	115	117	117
Safety Glazing	ANSI Z97.1	PASS		PASS	
Izod Impact Strength, Notched	D 256 @ 73°F D 256 @ 32°F D 256 @ -22°F	88 J/m 66 J/m 39 J/m	1.7 ft-lbf/in. 1.2 ft-lbf/in. 0.7 ft-lbf/in.	62 J/m — —	1.2 ft-lbf/in. — —
Impact Strength, Unnotched	D 4812 @ 73°F D 4812 @ 32°F D 4812 @ -22°F	NB** NBB NBB	NB** NBB NBB	NB** — —	NB** — —
Impact Resistance—Puncture, Energy @ Max. Load	D 3763 @ 73°F D 3763 @ 32°F D 3763 @ 14°F D 3763 @ -4°F D 3763 @ -22°F	33 J 40 J 42 J 43 J 47 J	24 ft-lbf 30 ft-lbf 31 ft-lbf 32 ft-lbf 34 ft-lbf	71 J 93 J 96 J >100 J >100 J	53 ft-lbf 69 ft-lbf 71 ft-lbf >74 ft-lbf >74 ft-lbf
THERMAL					
Cont. Max Use Temperature -Varia	—	65°C	150°F	65°C	150°F
Cont. Max Use Temperature - Dichroic/Reflect	—	60°C	140°F	60°C	140°F
Heat Deflection Temp	D 648 @ 264psi	70°C	157°F	73°C	164°F
Vicat Softening Temperature	D 1525 @ 1 kg	83°C	181°F	—	—
Forming Temperature	—	138-160°C	280-320°F	—	—
Thermal Conductivity	ASTM D 5930	0.205 W/m·K	0.118 Btu/hr-ft ² -°F	0.205 W/m·K	0.118 Btu/hr-ft ² -°F
Coefficient of Thermal Expansion	ASTM D 696	7x10 ⁻⁵ mm/mm/°C	4x10 ⁻⁵ in/in/°F	7x10 ⁻⁵ mm/mm/°C	4x10 ⁻⁵ in/in/°F

*Unless noted otherwise, all tests are run @ 73°F (23°C) and 50% relative humidity, using specimens machined from extruded sheeting with a thickness as indicated.

**Nonbreak as defined in ASTM D 4812 using specimens having a thickness as indicated. Properties reported here are typical of average lots. 3form makes no representation that the material in any particular shipment will conform exactly to the values given.

REFINISHING

It is possible for Varia to become damaged by scratching. Patent is the only Varia finish that may be repaired, and requires use of a flame polishing technique.

Light scratches and scuffs on the sandstone surface finish can be repaired with a plastic polish. The majority of 3form products have a surface finish that would be ruined by buffing.

SOUND TRANSMISSION CLASS (STC) VALUES FOR VARIA

Measurement protocol: ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

THICKNESS	STC VALUES
1/8" (3.1 mm)	25
3/16" (4.7 mm)	29
1/4" (6.3 mm)	31
3/8" (9.5 mm)	34
1/2" (12.7 mm)	34
1" (25.4 mm)	39

THERMAL INSULATION VALUES FOR VARIA

Insulative values are a function of both the convective properties (U-values and shading coefficients) and the conductive properties (thermal conductivity).

Measurement protocol: ASTM E 903 - Standard Test Method for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres. ASTM E 891-87 - Tables for Terrestrial Direct Normal Solar Spectral Irradiance Tables for Air Mass. ASTM E 408-71 - Standard Test Method for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.

VARIA CLEAR THICKNESS	WINTER U-VALUE (BTU/HR-FT ² -°F)	SUMMER U-VALUE (BTU/HR-FT ² -°F)
1/4" (6.3 mm)	0.97	0.93
3/8" (9.5 mm)	0.90	0.87
1/2" (12.7 mm)	0.83	0.80

Chemical Resistance of 3form Varia to Select Compounds

365 DAY FULL IMMERSION TESTING @ 73°F (23°C)

Polymer materials are affected by chemicals in different ways. Changes in performance or appearance can be attributed to fabrication methods, exposure conditions, concentration of chemical substances or exposure duration. Such factors can even influence the final effect of substances that 3form Varia is considered "Resistant" to under test conditions. Further details are explained below:

FABRICATION

Stresses generated from sanding, grinding, drilling, polishing, machining, sawing and/or forming (hot or cold).

EXPOSURE

Exposure duration, stresses imparted during the application life-cycle due to loads, temperature changes, heat, environments, etc.

APPLICATION OF CHEMICALS

Application from contact, rubbing, wiping, spraying, soaking, etc. Also having an affect is the relative concentration of the chemical in question.

The following data is based on complete immersion of Varia in the chemical or reagent shown. Samples remained immersed and were stored at 73°F (23°C) for a period of one year. Following the test period the samples were removed from immersion and inspected.

The following table provides indicative performance of the chemical resistance characteristics of Varia. The following codes are used to describe the chemical resistance characteristics:

R = RESISTANT

3form Varia is able to withstand the identified compound for long exposure periods up to 120°F (7 days, full immersion)

LR = LIMITED RESISTANCE

3form Varia is only resistant when in contact with this compound for short periods at room temperature. It is advised that further determination of the effect of the substance be further tested in your particular application.

NR = NOT RESISTANT

3form Varia is not resistant to the compound. The material will swell, craze, haze, dissolve or experience some physical change when exposed to this substance.

GENERAL CHEMICALS

REAGENT	RESULT	REAGENT	RESULT
Acetic Acid, 5%	R	Acetic Acid, conc.	NR
Acetone	NR	Ammonium Hydroxide, conc.	NR
Antifreeze, Automotive Ethylene Glycol Type	R	Benzene	NR
Brake Fluid, DOT3	R	Brake Fluid	LR
Carbon Tetrachloride	NR	Chromic Acid, 40%	R
Citric Acid, 10%	R	Cottonseed Oil	R
Deionized Water	R	Detergent, Alconox (0.25%)	R
Di (2-Ethylhexyl) Phthalate	R	Dibutyl Sebacate	R
Diesel Fuel	LR	Dimethyl Formamide	NR
Ethanol, 50%	R	Ethanol, 100%	R
Ethyl Acetate	NR	Ethylene Dichloride	NR
Gasohol, 10% Ethanol	LR	Gasohol, 10% Methanol	LR
Gasoline, Base for Gasohol	LR	Gasoline, Premium Unleaded	LR
Gasoline, Regular	R	Gasoline, Regular Unleaded	LR

REAGENT	RESULT	REAGENT	RESULT
Grease, Automotive	R	Hand Cleaner, Waterless Jergens SBS30	R
Hexane	R	Hydrochloric Acid, conc.	NR
Hydrochloric Acid, 10%	R	Hydrogen Peroxide, 3%	R
Hydrogen Peroxide, 28%	R	Isooctane	R
Kerosene	R	Lacquer Thinner	LR
Methyl Alcohol	LR	Mineral Oil	R
Maintex Oxy Citrus	R	Motor Oil	R
Nitric Acid, conc.	NR	Nitric Acid, 10%	R
Nitric Acid, 40%	LR	Oleic Acid, 83%	R
Olive Oil	R	OxiCide, product use dilution	R
Penetrating Oil, Liquid Wrench #1	NR	Phenol, 5%	NR
Silicone Spray Lubricant	NR	Soap (Liquid Hand Soap)	R
Soap Solution, 1%	R	Sodium Carbonate, 2%	R
Sodium Carbonate, 20%	R	Sodium Chloride, 10%	R
Sodium Hydroxide, 1%	R	Sodium Hydroxide, 10%	R
Sodium Hypochlorite, 3.5%	R	Sulfuric Acid, conc.	NR
Sulfuric Acid, 3%	R	Sulfuric Acid, 30%	R
Tapping Oil	R	Toluene	NR
Transformer Oil	LR	Transmission Fluid, Auto	R
Turpentine	LR		

DISINFECTANTS*

REAGENT	RESULT
ChemiSwiss SUIclean™	R
ClearSpace powered by PreventX™	R
Clorox Healthcare® Bleach Germicidal Wipes	R
Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant Wipes	R
Clorox Healthcare® VersaSure™ Alcohol-Free Disinfectant Cleaner Wipes	R
Diversey™ Avert® Disinfectant Cleaner	R
Diversey™ Oxivir® TB Hospital Grade Disinfectant	NR
Diversey™ Virex® Cleaner Disinfectant TB	NR
Diversey™ Virex® II 256 One Step Disinfectant Cleaner and Deodorant	R
Ecolab® Neutral Disinfectant Cleaner	R
Ecolab® Oxycide Daily Disinfectant Cleaner	R
Ecolab® Quaternary Disinfectant Cleaner	R
PDI® Sani-Cloth® AF3 Germicidal Disposable Wipe	R
PDI® Sani-Cloth® Bleach Germicidal Disposable Wipe	R
PDI® Sani-Cloth® Plus Germicidal Disposable Cloth	R
PDI® Sani-Cloth® Prime Germicidal Disposable Wipe	R
PDI® Super Sani-Cloth® Germicidal Disposable Wipe	R

*Use recommended cleaners and disinfectant products as directed by the manufacturers

Cleaning Instructions

3form Varia, like all thermoplastic resin materials, should be cleaned periodically. A regular, seasonal cleaning program will dramatically help prevent noticeable weathering and dirt build-up. 3form recommends the use of the following common cleaning products: Windex, Formula 409, Simple Green, Fantastik, Maintex Oxy Citrus, Virex II, 10:1 Water/Bleach Solution.

Rinse the sheets with lukewarm water. (Be careful not to expose edges of organic or fabric interlayers to water) Remove dust and dirt from Varia with a soft cloth or sponge and a solution of mild soap and/or liquid detergent in water. A 50:50 solution of isopropyl alcohol and water also works well. Rinse thoroughly with lukewarm water.

Always use a soft, damp cloth to blot dry. Rubbing with a dry cloth can scratch the material and create a static charge. Never use scrapers or squeegees on Varia. Also avoid scouring compounds, gasoline, benzene, acetone, carbon tetrachloride, certain deicing fluids, lacquer thinner or other strong solvents.

Writeable: Erasable markers contain an ink that dries instantly and should be easily erased. After a period of use, a film or haze could develop on the surface, which is the result of the ink residue that might not be completely removed when the board is erased.

By using a spray on type of glass cleaner, the board may be given a thorough cleaning. Simply spray the surface and briskly rub with a clean microfiber cloth. Rinse with clear water. Avoid using caustic or abrasive types of cleaners.

DO:

- Keep edges dry and free of liquids
- Apply cleaning solution or water to a clean cloth and wipe resin

DO NOT:

- Use a squeegee.
- Use strong solvents, highly alkaline or abrasive cleaning agents.
- Clean in hot sun or at elevated temperatures.
- Rub with a dry cloth.
- Do not completely saturate panel with cleaning solution or water
- Expose organic or fabric interlayers to water or cleaning solution

PRESSURE WASHING

Pressure washing can also be an effective way to remove miscellaneous debris from surfaces of 3form Varia installations that are in exterior or hard-to-reach places.

Pre-soak panels with a light water spray to loosen and remove incidental surface debris.

It is recommended that the water pressure for cleaning Varia panels be 1,500 psi or less. 3form Varia is a tough material but can be damaged if high pressure is concentrated in a single position too long. Use a gradual sweeping motion over the application. Never concentrate water spray in a single position. Pressure nozzle should never be positioned closer than 8 inches (203 mm) from the panel surface.

Test a portion of the sheet first before spraying. If test piece shows any sign of material fatigue, abrasion or delamination – discontinue pressure washing and proceed with manual cleaning instructions as described above.

Coated or painted parts are not suitable for pressure washing as finish may be stripped off. Pressure washing is also not suitable for Varia panels that have been edge sealed or seamed. If using detergent, use mild detergents only. Rinse sheet with light water spray after washing.

DO NOT:

- Concentrate spray in single position.
- Use more than 1,500 psi pressure.
- Position pressure nozzle closer than 8" (203 mm) from panel.
- Proceed with pressure washing if test piece shows detrimental effects to panel.
- Pressure wash Varia panels that have been painted or coated to maintain coating integrity.
- Pressure wash Varia panels with sealed edges to ensure edge seals remain in tact.

If debris or dirt is not removed by pressure washing attempt to clean with manual procedures described in preceding section.

WRITEABLE FINISH

Use Low Odor Dry Erase markers from a reputable brand. It is best to store markers horizontally so that the felt tips do not dry out. Avoid using markers with dried out tips.

Use a dry, soft cloth for cleaning. Press firmly when erasing using a circular motion.

Please remember to use a clean cloth/eraser when erasing. A dirty cloth/eraser will leave ink residue on the writing surface. Microfiber cloths are preferred over felt erasers because they can be machine laundered making them easier to keep clean.

For periodic cleaning, rinse the entire writing surface with soapy water and then dry with a soft cloth.

To remove any permanent marker ink, use a 50:50 solvent solution of isopropyl alcohol and water. You can also trace over any areas of permanent marker ink with a dry erase marker and erase using a dry, soft cloth.

DO NOT:

- Use sharp objects such as pens, pointers, metal magnets, rings/jewelry, knives, scrapers on your writing surface.
- Drag magnets across your writing surface.
- Use felt erasers, scouring pads or other harsh cleaners on your writing surface.
- Use any abrasive material or fingernails to remove tape or stickers.
- Expose edges of panel to moisture or cleaning solutions.

For more information, please visit 3-form.com or call 877-649-2670.