CHEMICAL AND STAIN RESISTANCE TESTING

GENERAL CHEMICAL RESISTANCE

Products	Dilute Acids (less than 30%)	Concentrated Acids (30% or more)	Weak Alkalis	Strong Alkalis	Chlorinated Solvents Aldehydes + Ketones Esters
GLASBORD PRODUCTS **SEQUENTIA PRODUCTS**	G to E	G to E	E	G	G to E

KEY | E=excellent, G=good, F=faire (test before using), P=poor, not recommended

RESISTANCE TO SPECIFIC CHEMICALS

TESTING INFORMATION

- Ratings are based on visual observations
- Tests were run per VALTO PD procedure #8125 Surface Chemical Resistance. In this procedure the chemicals are exposed to the surface of the panel for 7 days.

GENERAL NOTES

- Ratings are based on a combination of visual observations, and mechanical strength test results.
- All testing was done at 77°F +/- 10°F. Performance ratings are not necessarily valid outside of that temperature range.
- Test ratings are based on white material; non-white panels could show additional visual changes.
- Test was run according to ASTM D-543. Requiring total immersion of samples. Actual results may be better than published since only the Surfaseal finish will be exposed in atypical installation. Glasbord w/Surfaseal finish has exhibited up to 6 times the stain resistance of standard FRP.

RATING KEY

- E (Excellent): Suitable for use in most exposure conditions.
- G (Good): Probably suitable for use; testing under specific exposure conditions is suggested.
- F (Fair): Possibly unsuitable for use; testing under specific exposure conditions is recommended.
- P (Poor): Unsuitable for use in most exposure conditions.
- C: Color change
- NT: Not tested

Chemical	GLASBORD	SEQUENTIA	SANIGRID	General Comments
Acetic Acid, Concentrated	E	P	E	Caused Sequentia panels to turn yellow and erode
Acetic Acid, 5%	E	E	E	
Ammonium Hydroxide, Concentrated	E	C	C	Caused Sequentia + Sanigrid to turn yellow
Ammonium Hydroxide, 10%	C	C	C	Caused all to turn yellow
Aniline	P	P	C	Caused all to turn yellow
Bleach Solution	C	C	E	Caused Glasbord + Sequentia to turn yellow
Citric Acid, 10%	E	E	C	Caused Sanigrid to turn yellow
Detergent Solution	C	E	E	Caused Glasbord + Sequentia to turn yellow
Distilled Water	E	E	E	
Ethyl Acetate	P	P	E	
Ethyl Alcohol, 95%	C	G	NT	Caused Glasbord + Sequentia to turn yellow
Ethyl Alcohol, 50%	G	E	NT	Caused Sequentia panels slight reduction in strength
Formaldehyde	E	E	E	
Heptane	F	G	E	Caused Sequentia panels slight reduction in strength
Hydrochloric Acid, 10%	E	E	E	
Hydrochloric Peroxide, 3%	C	E	E	Caused Glasbord + Sequentia to turn yellow
Isooctane	G	G	E	Caused Sequentia panels slight reduction in strength
Lactic Acid, 10%	E	E	E	
Mineral Oil	E	E	G	Sanigrid absorbed some oil
Nitric Acid, 40%	E	G	C	Sanigrid turned slight yellow/blue
Nitric Acid, 10%	E	C	C	Sanigrid turned slight yellow/blue Caused Sequentia panels slight reduction in strength
Oleic Acid	G	E	G	Sanigrid absorbed some oil
Olive Oil	E	E	G	Sanigrid absorbed some oil
Potassium Iodide Solution, 10%	E	C	G	Sanigrid turned red | Sequentia turned yellow
Soap Solution	E	E	C	

CHEMICAL + STAIN RESISTANCE TESTING

Chemical	GLASBORD	SEQUENTIA	SANIGRID	General Comments
Sodium Chloride Solution, 10%	P	E	E	Caused Glasbord + Sequentia to turn yellow
Sodium Chloride Solution, 60%	P	G	E	Caused Sequentia panels slight reduction in strength
Sodium Hydroxide Solution, 10%	P	NT	E	Caused Glasbord + Sequentia to turn yellow
Sodium Hydroxide Solution, 1%	P	NT	E	Caused Glasbord + Sequentia to turn yellow
Sodium Hydroxide Solution, 4-6%	E	NT	E	
Sulfuric Acid, 30%	G	G	NT	Caused Sequentia panels slight reduction in strength
Sulfuric Acid, 3%	G	E	E	
Toluene	G	P	E	Caused Glasbord + Sequentia to turn yellow
Transformer Oil	G	NT	NT	Sanigrid absorbed some oil
Turpentine	G	E	G	

STAIN RESISTANCE TO FOOD + MISCELLANEOUS PRODUCTS

KEY

- Unaffected = wipes off easily with damp cloth and mild soap; no color or surface change
- Superficial = stain removes easily with water and/or mild abrasive
- Considerable = stain not completely removed.

TESTING INFORMATION

- ASTM D2299 | test stain resistance of applied coating
- ASTM D1308 | test stain resistance of a product's natural surface

Stain (ASTM D2299)	Glasbord (test #1)	Glasbord (test #2)	Sequentia (test #1)
Blood (beef)	Superficial	Superficial	Superficial
Brown Show Polish	Considerable	Considerable	Considerable
Butter	Unaffected	Unaffected	Unaffected
Crayon	Superficial	Superficial	Superficial
Mustard	Unaffected	Superficial	Superficial
Oil (crankcase)	Superficial	Superficial	Superficial
Potatoes (white)	Unaffected	Unaffected	Unaffected
Red Cabbage	Unaffected	Unaffected	Unaffected
Tea	Unaffected	Unaffected	Unaffected
Tomato Acid	Unaffected	Unaffected	Unaffected

At Valto, we partner with our customers, and through innovation, deliver advanced materials that enhance everyday environments. We succeed through a culture of collaboration, continuous improvement, and excellence. With integrity at our core, we challenge the status quo and pursue innovative approaches that benefit our customers and associates.

Since 1954, Valto Engineered Materials has provided innovative products and services and is a leading provider of FRP composite panels. Our lightweight composite products deliver unsurpassed strength and durability; and we continue to pioneer next level performance in building materials, recreational vehicles, and transportation.

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