varia ecoresin® | edge sealing

procedures and guidelines for edge sealing Varia Ecoresin

A very popular use of 3form Varia Ecoresin is in showers, swimming pool and water wall applications. You may view several of these applications by browsing our project portfolio at www.3-form.com. This brief provides a few points of guidance when incorporating Varia Ecoresin in submerged or wet applications.

AFFECTED PRODUCTS

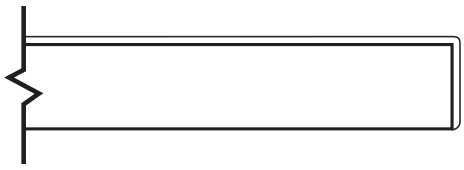
Certain Varia Ecoresin designed interlayers (organics, papers and fabrics in particular) can have a tendency to wick moisture over time if edges become wet and are not adequately sealed. These Varia Ecoresin products should not be exposed to water or wet conditions without first applying an approved edge sealing treatment. Varia Ecoresin produced using C3 color or HiRes 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 Ecoresin Woven Colors that do not exhibit wicking behavior and therefore do not need to be edge sealed. These non-wicking products are listed below.

SEALING EXEMPT VARIA ECORESIN WOVEN COLOR INTERLAYERS

Alu Gold 2	Alu Silver 2	Aqua
Asha	Black	Blue Iridescent
Bronze Weave	Copper	Dark Brown
Electric Blue 2	Flashback	Itemba
Mint	Orchid	Pure Gold
Pure Silver	Quattro (all colors)	Sky
Swept (all colors)	Teal	White Iridescent
Wisp (all colors)		

Exposure to saltwater or drinking water has no detrimental effects (color changes, physical property changes) on ecoresin™ (the base material used to produce Varia Ecoresin panels).

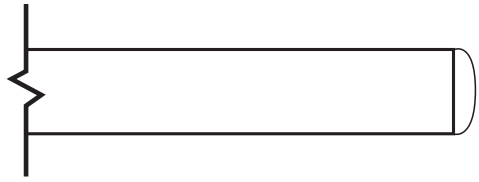
Dilute chlorine disinfection solutions similar to those experienced in pool and drinking water do not show signs of adverse effects on ecoresin after 360 days of submersion testing. Chlorine or salt water may cause oxidation of metallic interlayers (bronze weave, itemba, asha, etc.)



FACTORY APPLIED EDGE SEALING OPTIONS

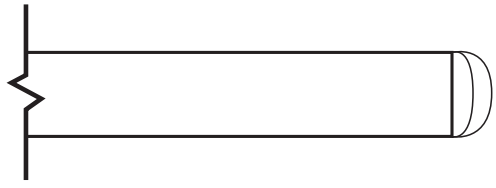
SPRAY SEALANT

A clear "patina" sealant is applied to front face and sides of product. This option can only be used for applications that are semi-immersed or not immersed with light usage. Spray sealant should only be selected if the edge aesthetics of the panel are important



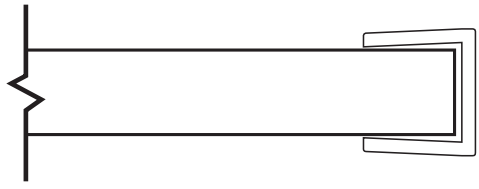
WELD-ON 58

A two part urethane adhesive is applied to the edges of the product and allowed to cure. The finished edge has a polished appearance. This option should only be selected if the edges of the panel are exposed. Use for applications that are semi-immersed or not immersed with heavy usage.



WELD-ON 58 + SILICONE

A two part urethane adhesive is applied to the edges and allowed to cure. A secondary seal of silicone is applied on top of this seal. The final panel should be installed on-site into a channel using silicone. This option should be selected for applications that are not immersed and captured in a frame. Use when edge aesthetics of panel are not important.



TRIM CAP

Edges are sealed using silicone. A polycarbonate trim cap is installed over the edges of the product (mitered in the corners). The final panel should be installed on-site into a channel using silicone. This is the best sealing option. Trim Cap should be selected for applications that are semi-immersed or fully immersed. Use when edge aesthetics of panel are not important. Only available in 1/4" and 3/8" gauges.

EDGE SEALING CATEGORIES AND DEFINITIONS

Use the following definitions to describe the application conditions of your Varia Ecoresin panel.

APPLICATION

Fully Immersed - Fully and continually surrounded by water/liquid (e.g. water walls, shower stalls, tubs, etc)

Semi Immersed - Partially exposed to standing water/liquid (e.g. shower doors, balustrades, exterior signs, windows, etc)

Not Immersed - Exposed only to moisture via vapor or random contact (e.g. hot-tub surround, table tops, etc.)

USAGE

Heavy - Frequent or aggressive contact with the edge OR exterior applications

Light - Little to no contact with the edge will be made

SUPPORT CONDITION

Framed - Assumes edges are captured and therefore do not need to be aesthetic (e.g. fully glazed)

Free - Assumes edges are NOT captured and therefore need to be aesthetic (e.g. point support)

Edge sealing application selection chart

The following chart is provided to demonstrate the best edge sealing technique for your application.

APPLICATION	USAGE	SHEET FORMAT	SUPPORT CONDITION	SEALING TECHNIQUE
Fully Immersed	Heavy	Flat	Framed	Trim Cap
Fully Immersed	Heavy	Flat	Free	Not Recommended
Fully Immersed	Heavy	Curved	Framed	Trim Cap
Fully Immersed	Heavy	Curved	Free	Not Recommended
Fully Immersed	Heavy	Embossed	Framed	Not Recommended
Fully Immersed	Heavy	Embossed	Free	Not Recommended
Fully Immersed	Light	Flat	Framed	Trim Cap
Fully Immersed	Light	Flat	Free	Not Recommended
Fully Immersed	Light	Curved	Framed	Trim Cap
Fully Immersed	Light	Curved	Free	Not Recommended
Fully Immersed	Light	Embossed	Framed	Not Recommended
Fully Immersed	Light	Embossed	Free	Not Recommended
Semi Immersed	Heavy	Flat	Framed	Trim Cap
Semi Immersed	Heavy	Flat	Free	Weld-On 58 + Silicone
Semi Immersed	Heavy	Curved	Framed	Trim Cap
Semi Immersed	Heavy	Curved	Free	Weld-On 58 + Silicone
Semi Immersed	Heavy	Embossed	Framed	Trim Cap
Semi Immersed	Heavy	Embossed	Free	Weld-On 58 + Silicone
Semi Immersed	Light	Flat	Framed	Trim Cap
Semi Immersed	Light	Flat	Free	Weld-On 58 + Silicone
Semi Immersed	Light	Curved	Framed	Trim Cap
Semi Immersed	Light	Curved	Free	Weld-On 58 + Silicone
Semi Immersed	Light	Embossed	Framed	Not Recommended
Semi Immersed	Light	Embossed	Free	Spray Sealant
Not Immersed	Heavy	Flat	Framed	Weld On 58 + Silicone
Not Immersed	Heavy	Flat	Free	Weld On 58
Not Immersed	Heavy	Curved	Framed	Weld On 58 + Silicone
Not Immersed	Heavy	Curved	Free	Weld On 58
Not Immersed	Heavy	Embossed	Framed	Weld On 58 + Silicone
Not Immersed	Heavy	Embossed	Free	Weld On 58
Not Immersed	Light	Flat	Framed	Weld On 58 + Silicone
Not Immersed	Light	Flat	Free	Spray Sealant
Not Immersed	Light	Curved	Framed	Weld On 58 + Silicone
Not Immersed	Light	Curved	Free	Spray Sealant
Not Immersed	Light	Embossed	Framed	Weld On 58 + Silicone
Not Immersed	Light	Embossed	Free	Not Recommended

IN-FIELD EDGE SEALING PROCEDURE

It is strongly recommended that 3form fabrication apply the edge sealing for Varia Ecoresin panels. In the event that this is not possible, use the following guidelines to seal panels on-site. Failure to seal panels may result in wicking of moisture into the interlayer. Varia Ecoresin panels containing certain woven and organic interlayers must be sealed before being installed in an application that may expose the panel to water/liquid. The entire edge of the product must be sealed as well as any holes that are cut into the material. The following guidelines must be followed to insure that your Varia Ecoresin panels remain beautiful. Alternatively, 3form fabrication may be specified to perform factory applied edge sealing if desired.

STEP 1: CLEAN

Clean edges thoroughy by wiping with a cloth dampened with Isopropyl Alcohol. Poor surface preparation can result in a bad seal.

STEP 2: SEAL

Seal all exposed edges with Weld-On 58. This is a two part urethane adhesive that is dispensed from a gun in a 1:1 ratio. Weld-On 58 has a 2-3 minute working time.

The adhesive should be applied in a bead and smoothed down with your finger. Leave the adhesive alone for at least one hour before being touched again.

Pay special attention when sealing the corners of the panel. It is important to ensure the entire corner is sealed. This is the most likely location to leave a void in the sealant.

Correct and complete application is extremely important as any part of the panel not sealed can cause the entire panel to wick. A gap the size of a pinhole may allow water to seep into the interlayer.

DO NOT apply a second layer of Weld-On 58. This will dissolve the first layer and result in a poor seal.

STEP 3: POST SEAL

A second sealing step can be performed with the application of silicone (Momentive SilGlaze II SCS 2801) to the Weld-On 58 coated edges. It should be noted that silicone by itself may not completely seal the Varia Ecoresin panels. A pre-seal of Weld-On 58 is recommended prior to silicone application. Other types of silicone may not work as well as the Momentive silicone that 3form recommends.

After the Weld-on has been allowed to cure for 24 hours, apply a layer of Momentive Performance Materials SilGlaze II SCS 2801 silicone to all edges that the Weld-On was applied. This silicone provides an excellent seal against moisture and also protects the Weld-On from damage. The silicone will continue to cure for 7 days, but can be handled after 24 hours.

