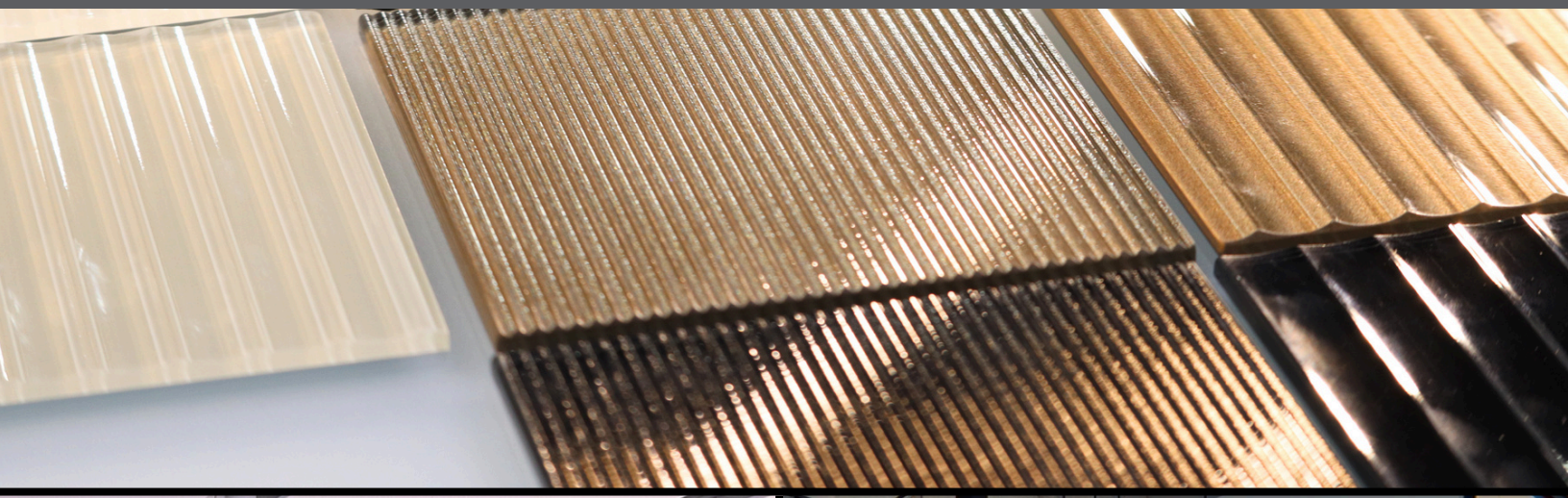
element® DESIGNS







Backpainted Glass Technical Manual

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Element Designs manufactures backpainted glass for interior commercial and residential applications. Backpainted glass is available in our **standard colors and any custom color.** Ideal for interior applications such as **markerboards, backsplashes, wall cladding, tabletops, countertops, shelving, partitions, decorative panels, elevator panels and more.**

All backpainted glass is tempered and utilizes low-iron glass for color clarity. Available in **4mm, 6mm, 10mm, and 12mm** thicknesses, depending on glass type. Glass is available in **gloss, matte, writable matte, reeded, and narrow reeded.**



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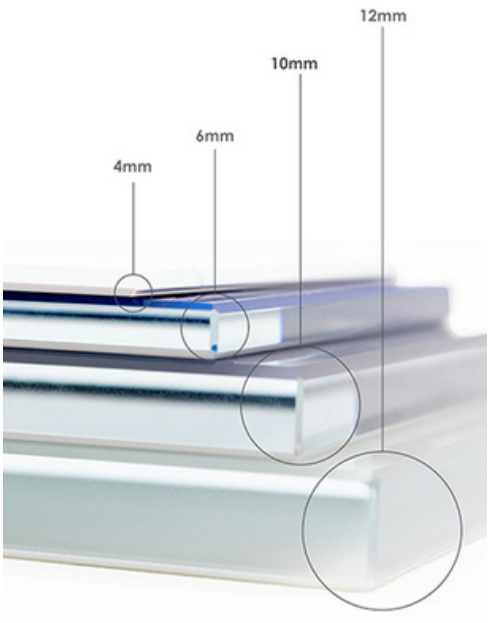
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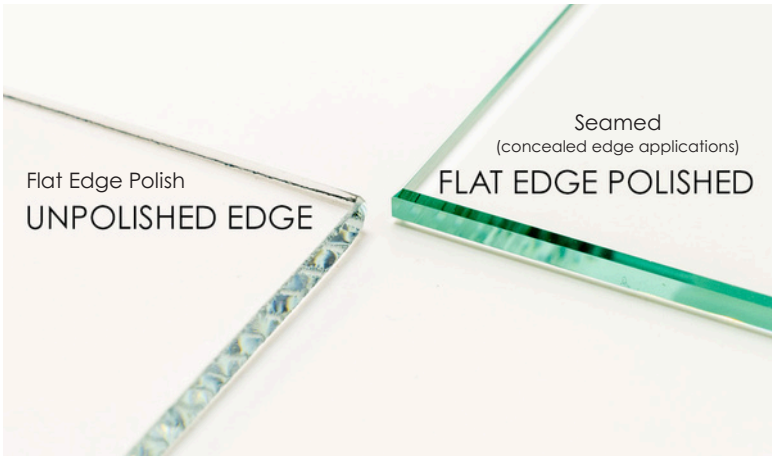
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Glass Thickness Options



Edge Finish Options



Design Guidelines

Thickness	Minimum	Maximum	Recommended Applications
4mm (5/32")	3.5" x 12"	48" x 96"	**vertical:** door inserts, markerboard
6mm (1/4")	3.5" x 12"	60" x 120"	**horizontal:** shelving **vertical:** backsplashes, wall cladding
10mm (3/8")	3.5" x 12"	60" x 120"	**horizontal:** table tops, countertops, shelving **vertical:** partitions, privacy panels, display cases, decorative feature walls
12mm (1/2")	3.5" x 12"	60" x 120"	**horizontal:** table tops, countertops, shelving **vertical:** partitions, privacy panels, display cases, decorative feature walls

Contact Element Designs for availability of other thicknesses.

- All Element Designs glass is tempered, glass will not have an etched tempered logo unless specified at time of order.

Technical specifications subject to change

Glass Dimensional Tolerances

Thickness	Edge Finish	Metric	Decimal, Standard	Fraction, Standard
4mm (5/32")	unpolished	+1.6mm, -1.6mm	+0.063, -0.063"	+1/16", - 1/16"
	flat edge polished	+0, -1.6mm	+0, -0.063"	+0, - 1/16"
6mm (1/4")	unpolished	+1.6mm, -1.6mm	+0.063, -0.063"	+1/16", - 1/16"
	flat edge polished	+0, -3.2mm	+0, -0.125"	+0, - 1/8"
10mm (3/8")	flat edge polished	+0, -3.2mm	+0, -0.125"	+0, - 1/8"
12mm (1/2")	flat edge polished	+0, -3.2mm	+0, -0.125"	+0, - 1/8"

Custom Fabrication

- Backpainted glass can be fabricated to include **notches, cut-outs, holes and custom shapes.**
- All custom shapes require **CAD file** at time of order.
- Glass holes are located 2 times the thickness of the glass from the edge of the glass to the rim of the hole:

Glass Thickness	Minimum Distance from Edge
4mm	8mm from the edge
6mm	12mm from the edge
10mm	20mm from the edge
12mm	24mm from the edge

- All internal cuts will have **unpolished edges**.
- Cut-outs will have radius corners **equal to, or greater than**, the glass thickness. The minimum being a **6mm radius** for 4mm and 6mm glass.

Note: Fabrication possibilities for reeded & narrow reeded backpainted to be verified at time of order by Element Designs' technical support team.

Note to Specifier:

- Glass used for backpainting is **low-iron clear,** which allows for minimal color distortion of the paint through the glass.
- All paint is water based and no VOCs are released during production.
- **Standard backer is a light grey color**. Alternative color options are available upon request.
- ANY **liquid** adhesive or mastic should be **avoided**, because it will telegraph through the paint.

Standard Colors

white

cream


sand


amarillo


bronze


mist


slate


sienna


oasis


navy


black

available glass types: gloss, matte, writable matte, reeded, narrow reeded

High-quality water-based paint on low-iron glass. All backpainted glass includes a light grey backer on the color-coated surface for additional durability and 100% opacity. Alternative colors for backer are available upon request.

Non-Standard Colors & Custom Color Match

Exact color matching is available, but samples are required for approval. Additional custom color match fee applies.

Note: Glass thicknesses can optically distort the backpainted glass color and appearance. Please make sure any samples requested are in the same thickness as your application.

Backpainted Glass Types and Thicknesses

	4mm (5/32")	6mm (1/4")	10mm (3/8")	12mm (1/2")
Gloss	✓	✓	✓	✓
Matte	✓	✓	✓	✓
Writable Matte	✓	✓		
Reeded	✓		✓	
Narrow Reeded	✓			

Adhesive Options

Gunther Premier Plus Mirror Mastic along with a Category II shatterproof cladding, textured backer as this
will not telegraph through the paint.

Category II shatterproof textured backer can be added to any backpainted glass upon request. Using this installation method, we can confirm that the mastic will not telegraph through the backpainted glass.

3M VHB Tape

For installation, we recommend 3M VHB tape with non-textured backer panels (currently in order). Please contact a 3M sales rep to confirm the appropriate tape based on your glass thickness and substrate.

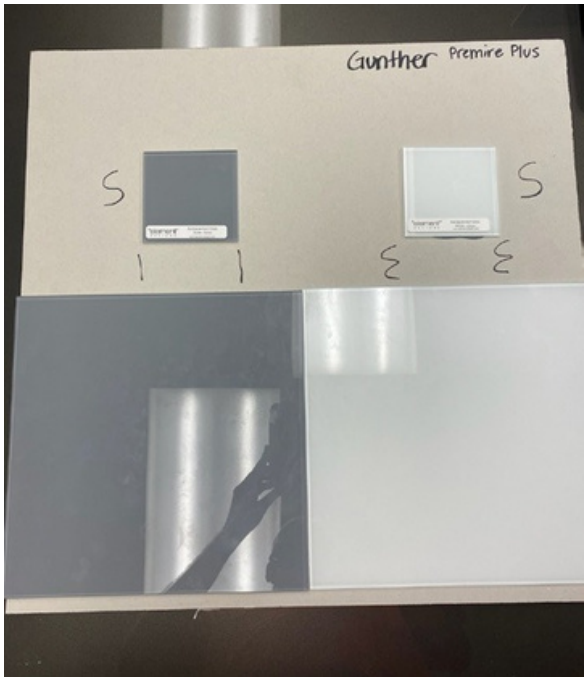
Since our backpainted glass uses water-based paint, some adhesives may telegraph through. To prevent this, we suggest Gunther Premier Plus Mirror Mastic with a Category II shatterproof textured backer, which we can apply to the glass. This method has been tested and ensures the mastic won't show through the paint. The textured backer also improves adhesion and speeds up cure time.

OBJECTIVE:
Test different industry recommended adhesives to determine if the adhesive would telegraph through the paint when CR Laurence Category II Shatterproof Safety Tape is applied to the back of Element Designs backpainted glass panel before adhering Element Designs glass panel to a drywall substrate.

METHOD:
CR Laurence Category II Shatterproof Safety Tape was applied according to the manufactures recommended installation instructions to the back of Element Designs' backpainted glass. Tests were done on two paint colors, white and slate gray, to confirm if pigmentation interferes with the telegraphing process. Element Designs backpainted glass consists of 2 coats of the chosen paint color with 1 coat of the light grey backer.

Adhesive was applied according to the manufacturer's recommended installation instructions on the CR Laurence Category II Shatterproof Safety Tape in various linear patterns. The glass was then applied to an unfinished drywall sample. Pressure was applied to Element Designs' backpainted glass panel, allowing the adhesive to spread the mastic out, creating the bond to the drywall substrate. See the photo of the finished experiment board below.

CONCLUSION:
After 48 hours of cure time, no visible telegraphing of the adhesive was present. The backpainted glass was securely bonded to the drywall substrate with no movement from the original placement. Element Designs concludes Gunther's Premier Plus Mirror Mastic can successfully be used as a recommended installation. method when CR Laurence Category II Shatterproof Safety Tape is applied to the back of Element Designs backpainted glass panels.



Completed experiment


CR Laurence Category II Shatterproof Safety Tape



Gunther's Premier Plus Mirror Mastic

Bonded to an intermediate substrate (wood/melamine) DIY drawer front:

Prepare the substrate backer panel to match the dimensions of the glass. Clean both surfaces using alcohol. (Use cloth, do not spray directly on paint)

If using VHB:

- Apply VHB tape to the perimeter of the glass panel (1/2" from the edge) around all sides. Use tape suited for glass type and weight.
- Apply 15lbs of vertical pressure to the applied VHB tape.
- Rremove protective film exposing tape for adhesion.
- Once adhered to the surface, apply 15lbs of pressure to the glass panel.
- When possible, it is recommended to use additional weight on the surface for 24 hours.

Bonded directly to vertical surface (wall panel):

- Lightly clean the vertical surface and backpainted side with 99% isopropyl alcohol on a cloth (do not apply any liquids directly to the water-based backpainted coating) and gently wipe the surfaces clean of debris or any foreign matter.
- Apply 3M's VHB to the outside perimeter of the backpainted glass panel (1/2" from the edge) around all sides. Add strips of tape to the center of the glass as needed based on the weight of the glass. Select tape designed for the type of substrate being bonded and the weight of the glass.
- Apply approximately 15 lbs of vertical rolling pressure to the VHB applied to the backpainted glass. Remove the peel coat on the VHB tape.
- Immediately hang the backpainted glass with the VHB to the vertical surface **using a soft pad clamp system at a minimum of four points to add continuous areas of contact to maintain pressure across the backpainted glass panel.**
- Apply 15lbs of horizontal rolling pressure to the smooth side of the glass panel to activate the perimeter VHB.
- Allow 24 hours for the backpainted glass to cure in place while under pressure of the clamped stiles.

Method 1: 3M VHB Tape (Non-Textured Backer Panels)

Use: For smooth, clean surface installations where mechanical fasteners are not desired.
Recommended Tape: 3M VHB Tape

- Contact a 3M Sales Representative to specify:

Glass thickness
Substrate type (e.g., painted drywall, metal, MDF, etc.)
Ensure the surface is properly cleaned and primed before applying tape.

- Not recommended for uneven or highly porous substrates.

**These methods are only recommendations on installing backpainted glass on vertical surfaces. Element Designs takes no responsibility or liability in the result or performance of the backpainted glass adhesion to a vertical substrate. These are recommendations only and the finished product is the sole responsibility of the installer.

Method 2: Textured Backer + Premier Plus Mirror Mastic

Use: For applications requiring strong adhesion to wall substrates using adhesive/mastic.

Installation Materials:

- Category II Shatterproof Textured Backer (applied by Element Designs)
- Premier Plus Mirror Mastic

Why Textured Backer?

- Acts as a barrier between the water-based paint and adhesive.
- Prevents telegraphing (marring or showing through) of adhesive through the paint layer. Improves the grip on substrate, allowing for a faster cure time.

Note: This is the preferred method when using adhesives.

Method 3: Elevate System (Cleat and Z-Clip)

Use: When mechanical hanging is preferred for removability or flexibility.

System Components:

- Cleat Mounts
- Z-Clips

Benefits:

- Allows for easier removal or replacement of glass panels.
- Minimizes reliance on adhesives.
- Ideal for panelized wall systems or situations requiring accessibility.

Method 3: Elevate System (Cleat and Z-Clip)

Use: When a framed aesthetic or precision alignment is desired.

System Components:

- Element Designs Aluminum Frame (Edge & Align profile)
- Z-Clip Hanging System

Benefits:

- Clean, architectural appearance.
- Integrated system supports weight and maintains alignment.
- Excellent for commercial or high-end residential applications.
-

Always confirm compatibility of installation materials with water-based paint used on the backpainted glass.

Improper adhesives may lead to paint damage or telegraphing.

If unsure of the best method for your project, consult Element Designs for guidance.

Cleaning & Care Guide

To ensure proper cleaning and care, please follow these recommendations:

- We recommend using 99% isopropyl alcohol or citrus- or vinegar-based cleaners on a clean, non-abrasive cloth or paper towel.
- Windex and other glass cleaners are OK to use.
- If a stain, marker residue, or ghosting is present and does not come clean using the suggestions above, use isopropyl alcohol with a Mr. Clean Magic Erase
- For the backer, we recommend using a mildly damp (water only) on a non-abrasive cloth.

Note: Please AVOID using any abrasive cleaning pads or solvents. This includes brillo, steel wool, scrub daddy, ammonia, etc.

Backpainted Glass – Limited Warranty:

Element Designs warrants the water based backpainted glass product against deterioration or degradation of the color-coated backpainting for a period of five years.

Additional backpainted glass specifications:

Element Designs provides an additional water based coating on the color-coated surface for additional durability and to provide 100% opaqueness. All backpainted glass is coated on low iron glass in 4mm, 6mm 10mm and 12mm thicknesses. Element Designs recommends that the end user review the color choice on the glass thickness for exact color matching prior to placing a production order. Various glass thicknesses can optically distort the backpainted glass color when viewed
through the glass.

All Element Designs glass is safety-tempered glass. The manufactured tempered glass meets ASTM C1048-25 for heat-treated and fully tempered flat glass and is subject to permissible defects as defined in the referenced ASTM specification.