

**ViviSpectra Spectrum** laminated glass incorporates customer-supplied photos, digital files, and other continuous tone color imagery. Offering astounding creative potential, Spectrum is a great choice if you have the imagery you want to use, and the file is large enough to fit your application (minimum 300 dpi at scale). Artwork that ties to project design themes, features logos or branding graphics, displays wayfinding elements, or has regional appeal are just some of the ways Spectrum can be used to bring a highly personalized look to any environment.

**Material Description**

ViviSpectra Spectrum glass is defined by three parameters that are key to product specification:

Parameter	Description	Page
<b>Configuration</b>	Configuration refers to the amount of light transmitted—or not—through the glass. To a large extent, the glass configuration is determined by the end use of the glass. ViviSpectra Spectrum is available in three configurations: Reflect, View, and LightPlane Panels.	2
<b>Interlayer</b>	Interlayers serve as the primary visual aspect of the glass. ViviSpectra Spectrum interlayers can be used to display the digital artwork of your choice, including photographs, logos, and other graphic elements. Artwork provided must be a minimum of 300 dpi at scale.	3
<b>Finish</b>	Finishes define the surface appearance of your glass by providing different levels of diffusion, reflectivity, glare and optical distortion. ViviSpectra Spectrum is available in two finishes: Standard and Pearlex+.	4

**Products & Applications**

ViviSpectra Spectrum glass can be used in the F+S Systems listed below or specified as loose lites for custom applications.

F+S Systems	Loose Lites
<ul style="list-style-type: none"> <li>• LEVELr Wall Panel &amp; Column System</li> <li>• LEVELe Wall Panel &amp; Column System</li> <li>• LEVELr Elevator Interiors</li> <li>• LEVELe Elevator Interiors</li> <li>• LEVELc-2000 Elevator Interiors</li> <li>• LightPlane Panels</li> </ul>	<p>Processing options include polished edges, tempering, notches, cutouts and pattern cuts. ViviSpectra Spectrum can be specified in any size up to 60" x 120" (1524 mm x 3048 mm). Glass can be made to fit a flat or curved profile. Curved profiles are subject to certain limitations.</p> <p>ViviSpectra Spectrum glass lites can be used with commonly available glass hardware components to address a wide range of glass mounting and installation scenarios.</p> <p>Products are manufactured to specification and provided cut to size and ready to install.</p>

## Glass Characteristics

Aspect	Description
<b>Environment</b>	Suitable for interior and exterior applications.
<b>Safety</b>	Available in annealed, tempered or heat strengthened glass. We recommend heat strengthening for glass over 50 square feet. Tempering is required for glass with holes and cutouts.
<b>Fire Rating</b>	Class A fire rated in accordance with ASTM designation E84-09, standard test method of surface burning characteristics of building materials. The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1.
<b>Routine Maintenance</b>	Requires minimal maintenance: with decorative treatment inside the glass, rather than surface-applied, glass surfaces are easy to clean. Additional details can be found in the Architectural Materials Care & Maintenance document on our website.

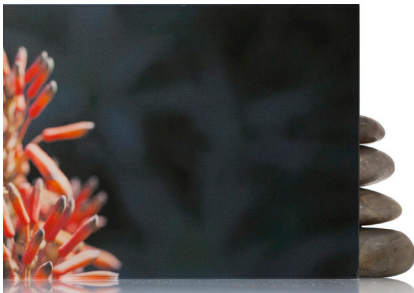
## Specification Parameters

As summarized on page 1, ViviSpectra Spectrum glass is defined by three parameters that are key to product specification: configuration, interlayer color, and finish. The information below and on the following pages goes into more detail about each.

### Configuration

Configuration refers to the amount of light transmitted—or not—through the glass. To a large extent, the glass configuration is determined by the end use of the glass.

#### Reflect



Reflect is a single-sided configuration that consists of an interlayer between a transparent lite of glass and a reflective glass backer.

Typical Applications: Reflect is ideal for applications where the glass will be installed against another surface, for example, in LEVELr, LEVELe and LEVELc-2000 Elevator Interiors, LEVELr and LEVELe Wall Panel & Column Systems, or custom fabrications.

(Configuration shown: ViviSpectra Spectrum, Reflect, Custom Interlayer)

#### View



View is a double-sided configuration that consists of an interlayer between two transparent lites of glass.

Typical Applications: View is ideal for use in doors, partitions, room dividers and other applications where semi-privacy is desired and the glass is seen from both sides.

(Configuration shown: ViviSpectra Spectrum, View, Custom Interlayer)

#### LightPlane™ Panel



LightPlane is a panelized edge-lit configuration. Panels consist of an extruded aluminum frame, LED lighting, and laminated glass inset.

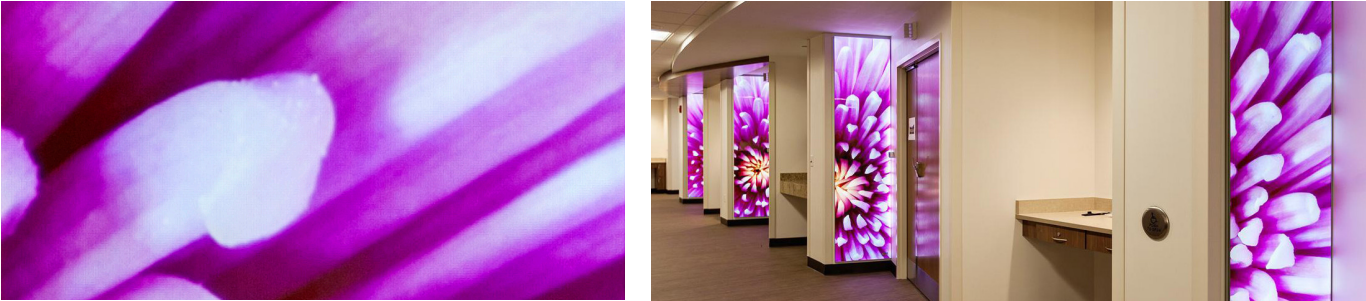
Typical Applications: LightPlane is ideal for applications where illuminated glass panels will be installed against another surface, for example, in LEVELe Elevator Interiors, LEVELe Wall Panel & Column Systems, or as standalone LightPlane Panels.

(Example shown: ViviGraphix Gleam glass, LightPlane configuration, Tempo II interlayer, Standard finish; LightPlane panel at left has illumination turned on; panel at right has illumination turned off)

### Spectrum Image Interlayers

ViviSpectra Spectrum glass is a great choice if you already have the imagery you want to use, and the file is large enough to fit your intended application (supplied imagery must be a minimum of 300 dpi at scale). Since Spectrum interlayers can incorporate photographs, digital files, and other continuous tone color imagery, your options are virtually limitless. Artwork that ties to a project's design theme, features logos or branding graphics, or displays wayfinding elements are just some of the ways our customers have incorporated their own artwork into ViviSpectra Spectrum glass applications.

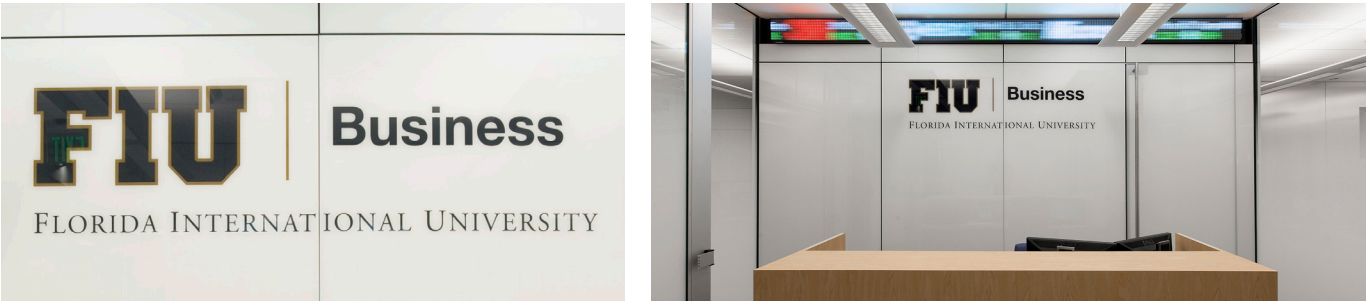
### Custom Photography



### Custom Digital Art



### Custom Logo Art



Usage rights, permissions, and/or copyrights for all submitted artwork are the responsibility of the submitting party. Forms+Surfaces is not responsible for obtaining or verifying these rights or permissions and cannot be held liable for conflicts of rights tied to submitted artwork.

## Finish Options

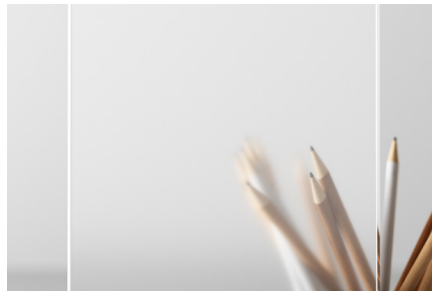
Glass finishes define the surface appearance of your glass. As described below, the different options vary in levels of diffusion, reflectivity, glare, and optical distortion and provide different solutions for meeting individual project needs.

### Standard



**Surface:** Smooth  
**Diffusion:** None  
**Reflectivity:** Reflective  
**Glare:** High  
**Optical Distortion:** None  
**Maintenance:** Easy to clean  
**Durability:** Durable

### Pearlex+™



**Surface:** Finely etched  
**Diffusion:** Minimal  
**Reflectivity:** Non-reflective  
**Glare:** Minimal  
**Optical Distortion:** Minimal  
**Maintenance:** Fingerprint resistant; exceptionally easy to clean  
**Durability:** Highly durable; extremely scratch-resistant

## Customization

Forms+Surfaces is always willing to consider custom variations and modifications to meet specific project needs. Please contact us to discuss your requirements.

## Environmental Considerations

Please refer to the VividGlass Product Environmental Data Sheet for detailed environmental impact information. For more information on our sustainability mission visit our website.

## How To Specify

A Design Guide is available to lead you through the specification process in a simple, checkbox format. The Design Guide captures all the information needed to generate a quote: configuration, finish, pattern, as well as other options.

## Glass Handling Guidelines

### Ordering

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- Plan the order to avoid off-site storage and to minimize rehandling and time in storage at the job site before installation.
- Prepare boxing, trailer and floor loading schedules in consideration of weight limitations and handling and distribution needs.

### Receiving

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- VividGlass is sold and shipped on an F.O.B. FACTORY basis. Inspect all glass upon arrival.
- Before unloading, inspect handling equipment, rigging and surrounding conditions for safety compliance and inspect the general condition of the shipment for load shifting or possible damage in transit.
- Inspect the shipment for any shortage, abuse, wetness or other transit damage; note such on the bill of lading or delivery ticket and obtain the driver's signature as acknowledgment.
- Inventory received materials; immediately report any shortage to Forms+Surfaces and report concealed damage to the carrier.
- If necessary, file a written freight claim with the carrier and order replacement glass from Forms+Surfaces.

### Storage

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- Store indoors at moderate temperature (above the dew point).
- If outdoor storage is required, shade from direct sunlight and cover with tarp or plastic (for plastic, particularly, allow for air circulation in and around the cases—condensation can lead to glass surface staining).
- Support both sides of vertically stored cases.
- Wet glass must be towel dried prior to storage as prolonged moisture exposure can cause permanent surface staining.

### Handling

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- During handling, wear hard-hats, safety shoes, gloves, and glazing gauntlets and follow all established safety procedures.
- Remove the lid of the crate and unpack lite-by-lite; never end-pick glass or move partially unpacked cases.
- Exercise care to prevent damage to the glass; edge damage may lead to thermally associated glass breakage after installation.
- Cushion lites at bottom-edge quarter points on soft, firm blocks, free from glass chips, dirt or foreign matter.
- Stack glass on edge and lean against a structural column or other sturdy upright or rack at an angle of five to seven degrees from vertical; place interleaving between lites. Never slide one lite against another.
- Check finished surfaces and glass edges for damage before installation; set only acceptable material.

### Protection

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- Install finished materials after potentially damaging construction activities nearby—such as welding, sandblasting and fireproofing—have been completed. If the construction schedule does not allow for this, protect the glazing from damage by other processes.
- Immediately after glass is set, identify the openings with streamers or ribbons suitably attached to the framing or surround and held free from the glass; do apply warning markers directly to the glass.

### Maintenance

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- Shortly after glazing, remove grease or excess glazing materials by cleaning the glass with commercial solvents such as mineral spirits or naphtha, followed by a normal wash and rinse.
- Never use fluoride salts or hydrogen-fluoride producing compounds to wash the glass or surrounding surfaces; avoid use of razor blades or abrasive cleansers.
- Use soft, clean, grit-free cloths and a mild soap, detergent or slightly acidic solution for normal washing, rinse with clean water, and squeegee dry; ordinary commercial window-washing techniques are appropriate.
- Remove any stains from weathering steel by washing frequently during the weathering period (according to the steel manufacturer's recommendations).
- Remove any runoff from concrete, stucco or other alkaline materials by frequent window washing.
- Please refer to the Architectural Materials Care & Maintenance document on our website for additional information.