



# Frequently Asked Questions

## Solar Facade System

### 1. Can the color of the PV panels be customized?

The 6mm F-Series is only available in black but there are currently 10 color options in our 8mm K-Series. There are higher efficiencies associated with black solar panels. As soon as a color is introduced into the panel structure, all wavelengths associated with that color are reflected, resulting in less solar radiation reaching the active layer of the solar panel.

### 2. Is the only finish a reflective one, or is there a matte finish?

K-Series resembles a matte finish, F-Series is black tempered glass.

### 3. Is the System Thermally broken?

Elemex's building systems are designed to be thermally broken. This is typically accomplished in the framing that supports the cladding system. Elemex® has a proprietary building clip that is called the Enviroclip™.

### 4. Are the BIPV panels' weight comparable to other facade materials?

Solstex® system weight is 3.5-5.5 lbs/sq.ft. This is comparable to other cladding offerings from Elemex®, which can range from 2-8 lbs/sq.ft.

### 5. Are the panels live when installed and how do you mitigate the danger during installation?

Panels are 'live' at all times. Electricity does not flow from panel to panel until each panel string is completed, or the loop is closed. This occurs when panels are tied into an inverter, or other electrical equipment. MC4 connectors ensure there are no exposed conductors for panel-to-panel connections.

### 6. Besides maintenance-dust/dirt, what is the rate of degradation of the panel output and how long in theory should these panels last?

0.5% annual degradation rate should be expected.

### 7. What is the lifespan of a BIPV system (when would a full replacement be anticipated)?

Solar modules have a lifespan of 25 years. Inverters and other associate electrical equipment have a lifespan of 7-10 years outdoors, but typically last longer than that when installed inside.

### 8. Can the solar panels be assembled in a running bond pattern?

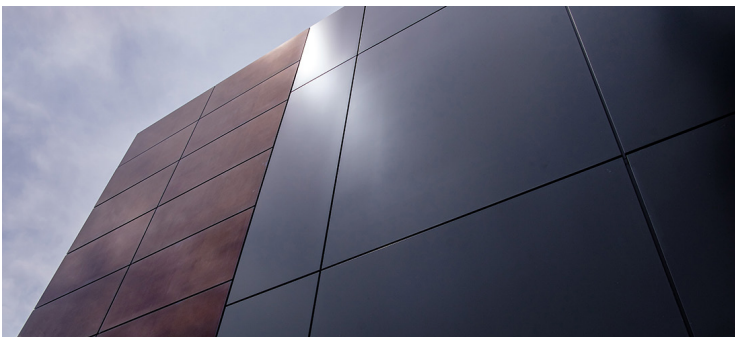
Yes, solar panels can be installed in geometrically appealing patterns.

### 9. Can you replace the wiring to a panel (or a panel) after installation if it fails? Is there any possibility for future upgrade of the photovoltaic elements?

Components can be replaced if failure occurs. The Solstex system is designed for individual panel removal, providing access on a panel-by-panel basis. Photovoltaic elements can be upgraded, but system limits have to be considered. Inverters require specific electrical characteristics from each solar string, and wiring gauges provide upper limits for voltage and amperage.

### 10. Have you ever used (dummy?) PV panels to maintain an aesthetic for places where special sizes or shapes are needed?

Filler panels have to be utilized with Solstex®, as solar modules are not available in every shape and size. In the past, Elemex® materials like Alumitex® and Ceramitex® have been utilized as a filler panel. Certain shades/textures of ceramic and ACM mimic the finish provided by Solstex®.



Architectural Facade Systems

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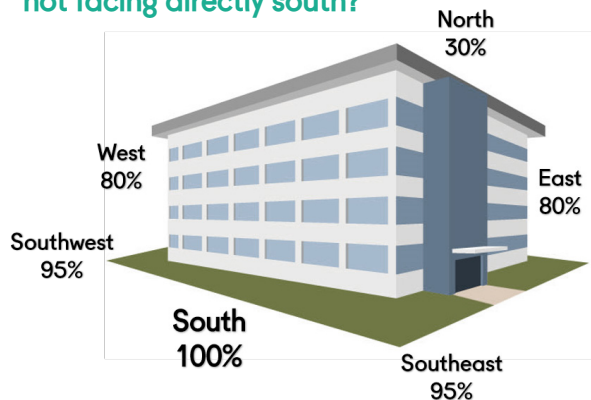
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## 11. How do solar panels perform on buildings not facing directly south?



## 12. Where are the electrical connections from the BIPV panel located and how are they connected to the power systems

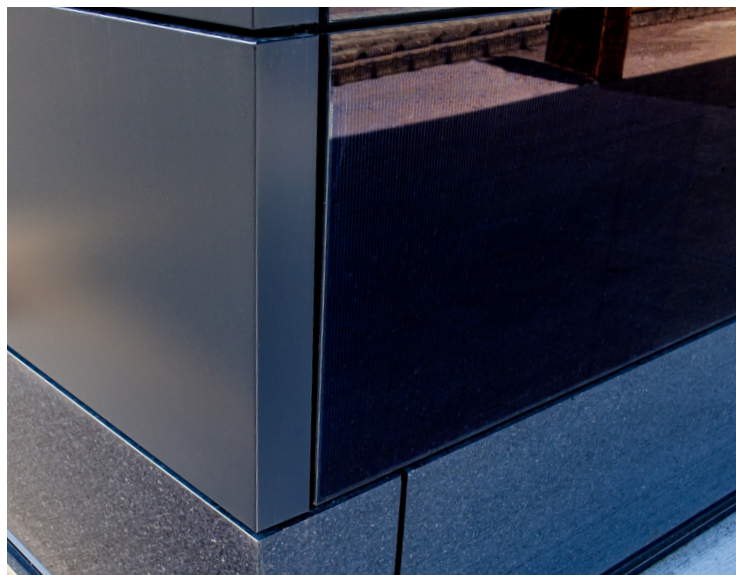
The electrical components are mounted in the 1" air space behind each panel. In a typical installation, they will not be visible from the interior of the building. Connections are made when panels are installed.

## 13. How does the energy intake compare to roof and ground mount?

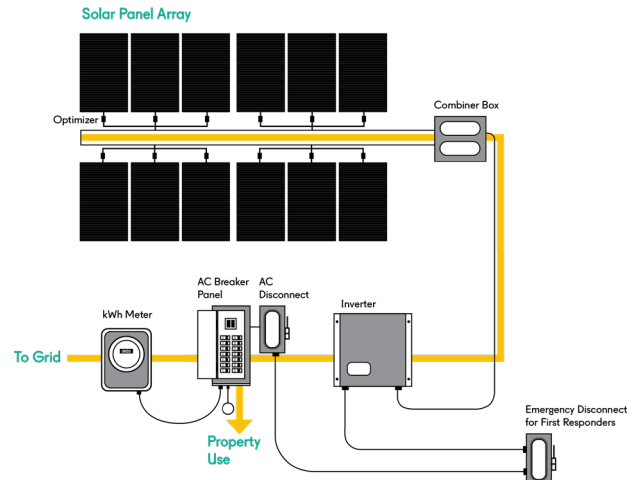
Vertically oriented panels produce about 70-80% of the power produced by fixed tilt ground/roof mounted systems.

## 14. How does the BIPV system resist weather conditions such as hail?

Panels have been tested for hail resistance as per IEC 61215-2. Additionally, the vertical orientation of the panels means hail will not hit the panels head-on, but rather as a glancing blow.



## 15. How is the energy collected directed from the panel to the building?



## 16. How well does it work in high-rise buildings?

Solstex® is compatible with buildings of all heights. Very tall building might require reinforced panels, due to increased wind loading. Additional reinforcement is accomplished via the use of aluminum stiffeners.

## 17. To retrofit an existing building, do we need an additional structure or could it be attached to substrate?

Solstex® should always be anchored in appropriate building framing. The system is designed to be installed over steel L-angles anchored into building clips.

## 18. Are there any anticipated safety issues with the system?

With any electrical install, there are hazards present. Elemex mitigates the hazards associated with Solstex® by following industry guidelines, installing per the local electrical authority, and by utilizing the proper equipment. An example of a safety feature is Rapid Shutdown Technology. This technology allows First Responders to access a control that will shut down all the electricity flowing within a solar system with 30 seconds, allowing for emergency response.



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