Angled Solar Noise Barrier: PVNB

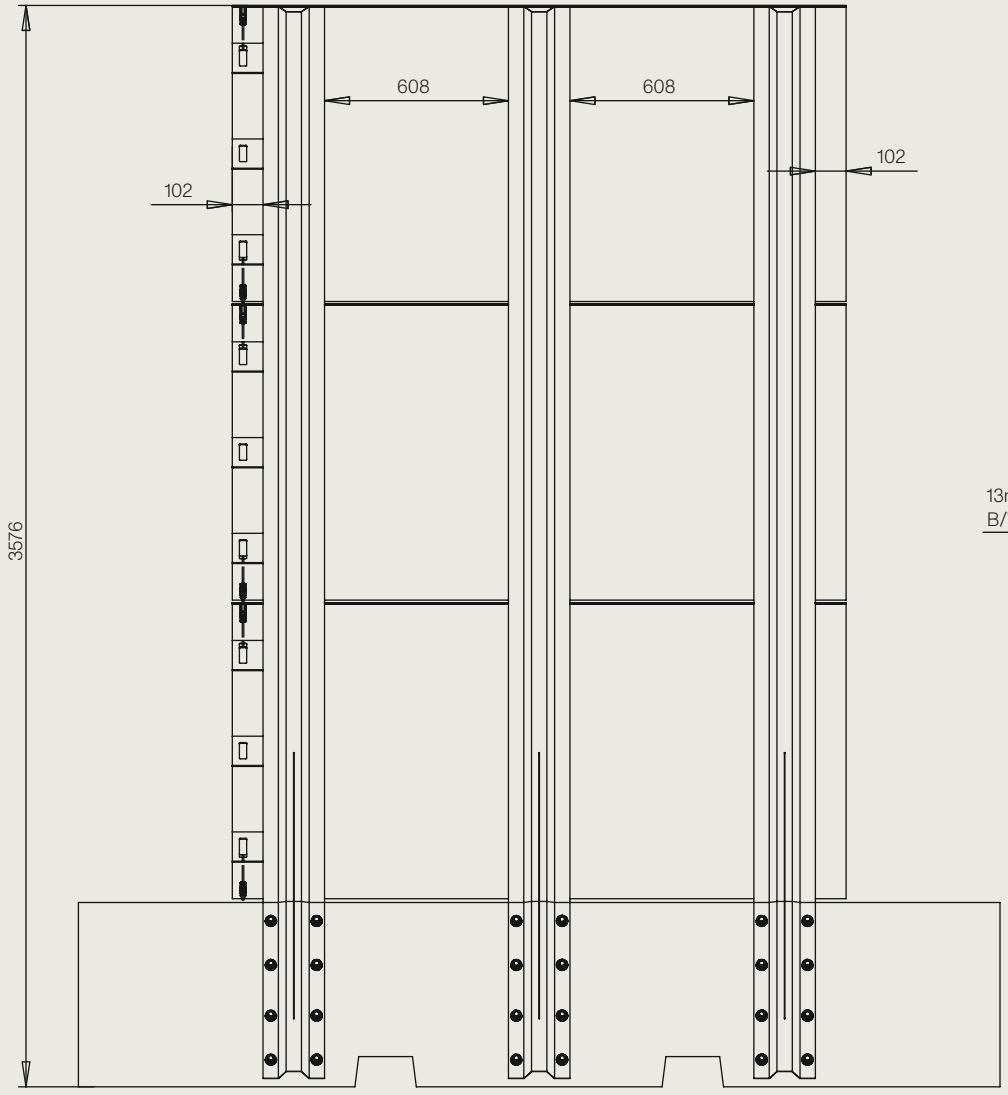
MITREX™

Angled Solar Noise Barrier (PVNB)

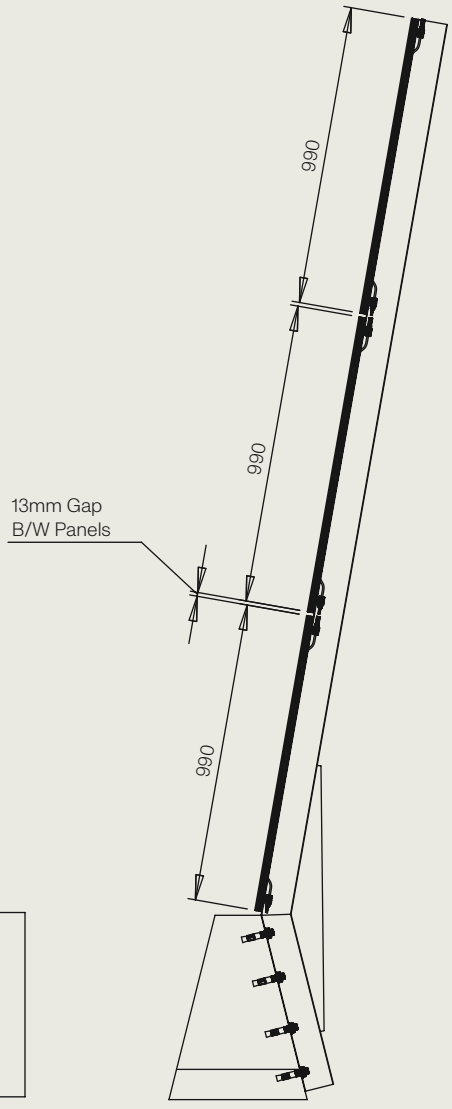
- An energy-efficient solution.
- World's First Sound Absorptive Solar Noise Barriers.
- Customizable PVNB Options.

Technical Drawings

Rear View



Side View



** Concrete base will be provided by an external supplier and may vary in size.

Mechanical Data

Mitrex Photovoltaic Noise Barrier (PVNB) is an ideal alternative to traditional noise barrier walls as they generate power while maintaining the original function—minimizing sound to surrounding areas with reflective or absorptive barriers.

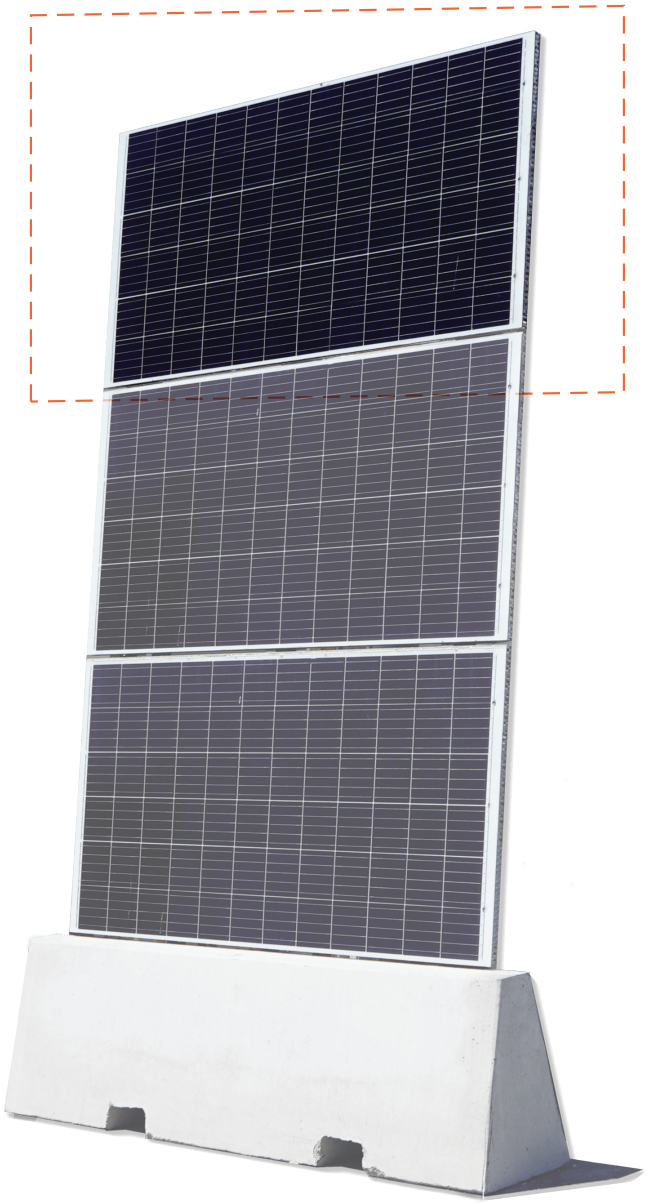
Depending on requirements, Mitrex reflective PVNBs can be customized and designed up to STC 40. For a noise barrier to be considered absorptive, the Sound Absorption Average (SAA) or Noise Reduction Coefficient (NRC) must be greater than 0.70. Mitrex Absorptive PVNBs feature an SAA or NRC of 0.80+. Not only is the function maximized, but there are added benefits of energy and design.

Mitrex PVNBs open energy generation to any surface by integrating solar technology into infrastructure. They generate solar energy and supply it to surrounding infrastructure, including traffic lights, local facilities, EV charging stations, and more.

Unparalleled sound insulation combined with power allows for the decentralization of energy from the high-carbon grid with renewable options. Maximize functionality and design without sacrificing on energy or sound protection with Mitrex.

Specifications	Angled Solar Noise Barrier
Description	• A noise barrier system with an integrated solar solution designed for roads and highways. • Direct mounting onto existing concrete traffic barriers features quick installation with minimal equipment. • Angled installation of the solar noise barrier maximizes power generation.
Overall Panel Height	Up to 4m (Varies with size of concrete traffic barrier)
Overall Panel Width (Span)	2m per section
Overall Panel Weight	136 kg (300 lbs) excluding concrete base
Tilt Angle	66° (Angle can vary between 45° to 90° depending on the concrete base)
STC Rating	Up to STC 40
Honeycomb Thickness	Up to 1” thick
Supporting Mounting Channel Thickness	1.59 mm (16 Ga)
Supporting Mounting Channel Material	Galvanized Steel
Supporting Mounting Channel Total Length	600mm + 3008mm
Supporting Mounting Channel Weight	16kg (35 lbs) per channel x 3

Electrical Data (Single Solar Panel)



Specifications

Solar Panel

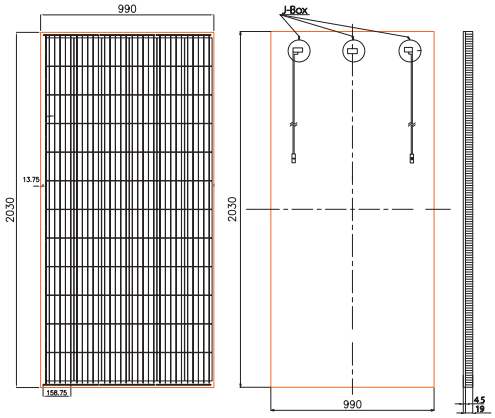
Cell Type	Mono-Crystalline
Cell Arrangement	72 [(12X6)]
Width (mm)	990 (38.9")
Length (mm)	2030 (79.9")
Thickness (mm)	25mm (With AHC)
Front Cover	3.2mm tempered glass
Aluminum Honeycomb Thickness	3/4"
Weight (kg)	29kg + 3/4" Aluminum Honeycomb
J-Box Protection Class	≥ IP67
Connector Protection Class	IP68
Max. Power (PMAX)	390W +/- 5%
Open Circuit Voltage (Voc)	48.2V +/- 5%
Short Circuit Current (Isc)	9.77A +/- 5%
Max. Power Voltage (VPM)	41.9V +/- 5%
Current at Max Power (IPM)	9.31A +/- 5%
Max. Series Fuse Rating	20A
Max. System Voltage	1000V
Fire Protection Class	Class A - Flame Spread Class C - Burning Brand
Operating Temperature (°C)	-40° - +85° [-40°F - 185°F]

Electrical Specifications

Test Conditions	STC
Module Power (Pmax)	390W
Maximum Power Voltage (Vpmax)	41.9V
Maximum Power Current (Ipmax)	9.31A
Open Circuit Voltage (Voc)	48.2V
Short Circuit Current (Isc)	9.97A
Module Efficiency	19.2%
Maximum System Voltage (VDC)	1000V (IEC/UL)
Series Fuse Rating	20A
Power & Other Electrical Specification Tolerance	5%
Application Classification	Class A

Measurement Conditions: STC 1000 W/m² - AM 1.5 - Temperature 25°C

Engineering Drawing



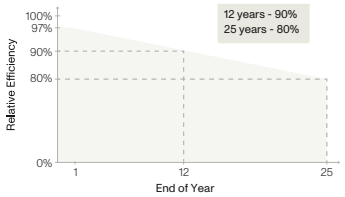
Mechanical Properties

Mechanical Properties	Metric	Imperial
Module Weight	29 kg	63.9 lbs
Dimensions (H x L x D)	2030 × 990 × 24mm	79.9 × 39.0 × 0.9in
Maximum Surface Load (Wind / Snow)	8000Pa rear load / 8000Pa front load	167.1psf rear load / 167.1psf front load
Design Load	5400Pa rear load / 5400Pa front load	112.7psf rear load / 112.7psf front load
Hail Impact Resistance	ø 25mm at 83 km/h	ø 1in at 51.6 mph
Cells	72 [12×6] Mono-crystalline (158.75 × 158.75mm)	72 [12×6] Mono-crystalline (6.25 × 6.25in)
Glass	3.2mm tempered glass, high transmittance, anti-reflective coating	0.126in tempered glass, high transmittance, anti-reflective coating
Cables & Connectors	300mm, 500mm, 1000mm, 1200mm - 4mm², 12 AWG (UL), MC4 from Staubli	11.8in, 19.7in, 39.4in, 47.2in - 0.16in², 12 AWG (UL) MC4 from Staubli
Backsheet	High durability, UV resistant, PV backsheet	
Back Support	Aluminum Honeycomb	
Bypass Diodes	3 diodes- 30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)	
Junction Box	IP68 rated, TUV and UL certified	
Fire Rating	Spread of flame A, burning brand C	

Temperature Ratings

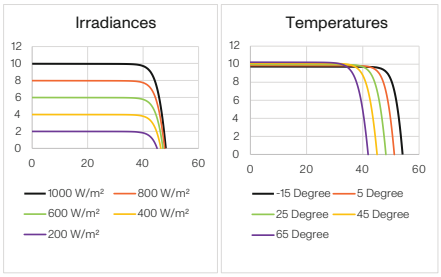
Temperature Coefficient Isc	0.037% /°C
Temperature Coefficient Voc	-0.27% /°C
Temperature Coefficient Pmax	-0.36% /°C
Nominal Module Operating Temperature	45 ± 3°C
Operating Temperature	-40°C ~ +85°C

Warranty



Product Material Warranty: 25 years
Perfomance Warranty: 25 years
≥ 97% end of 1st year
≥ 90% end of 12th year
≥ 80% end of 25th year

I-V Curves



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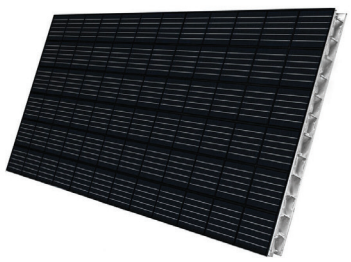
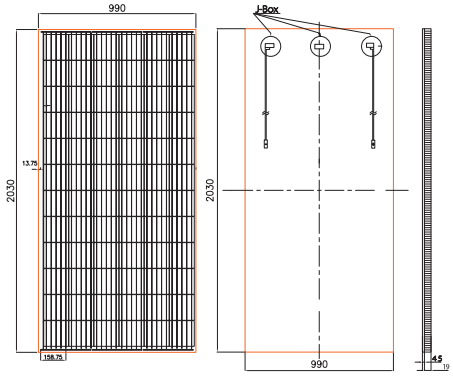


Electrical Specifications

Test Conditions	STC
Module Power (Pmax)	330W
Maximum Power Voltage (Vpmax)	40.4V
Maximum Power Current (Ipmax)	8.04A
Open Circuit Voltage (Voc)	48.7V
Short Circuit Current (Isc)	8.42A
Module Efficiency	16.4%
Maximum System Voltage (VDC)	1000V (IEC/UL)
Series Fuse Rating	20A
Power & Other Electrical Specification Tolerance	5%
Application Classification	Class A

Measurement Conditions: STC 1000 W/m² - AM 1.5 - Temperature 25°C

Engineering Drawing



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Glass	3.2mm tempered glass, high transmittance, anti-reflective coating	0.126in tempered glass, high transmittance, anti-reflective coating
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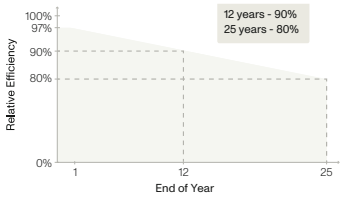
Backsheet	High durability, UV resistant, PV backsheet	
Back Support	Aluminum Honeycomb	
Bypass Diodes	3 diodes- 30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)	
Junction Box	IP68 rated, TUV and UL certified	
Fire Rating	Spread of flame A, burning brand C	

Temperature Ratings

Temperature Coefficient Isc	0.036% /°C
Temperature Coefficient Voc	-0.27% /°C
Temperature Coefficient Pmax	-0.36% /°C
Nominal Module Operating Temperature	45 ± 3°C
Operating Temperature	-40°C ~ +85°C

Warranty



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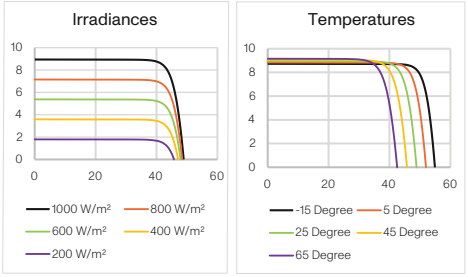
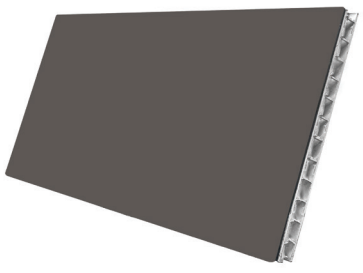


Solar Panel Grey



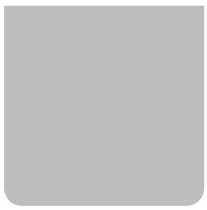
Datasheet is subjected to change without prior notice, always obtain the most recent version of the datasheet. **Caution:** For professional use only, the installation, handling, and cleaning of PV modules should only be performed by qualified professionals. Read the Installation Manual for mounting specifications before handling, installing and operating modules.

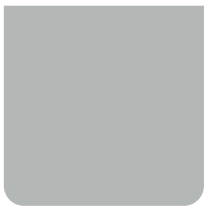
Available Colours

Solar Solid Colours

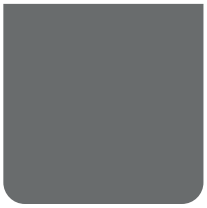

Light Steel Blue


Silver Sand


Grey

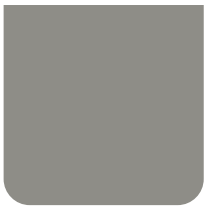

Ash Grey

Light Grey


Dim Grey


Charleston Green

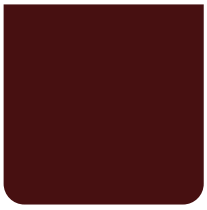

Charcoal

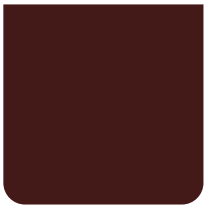

Sand Grey


Dark Slate Grey

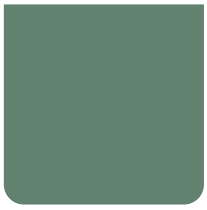

Oxford Blue


Bistre


Dark Sienna

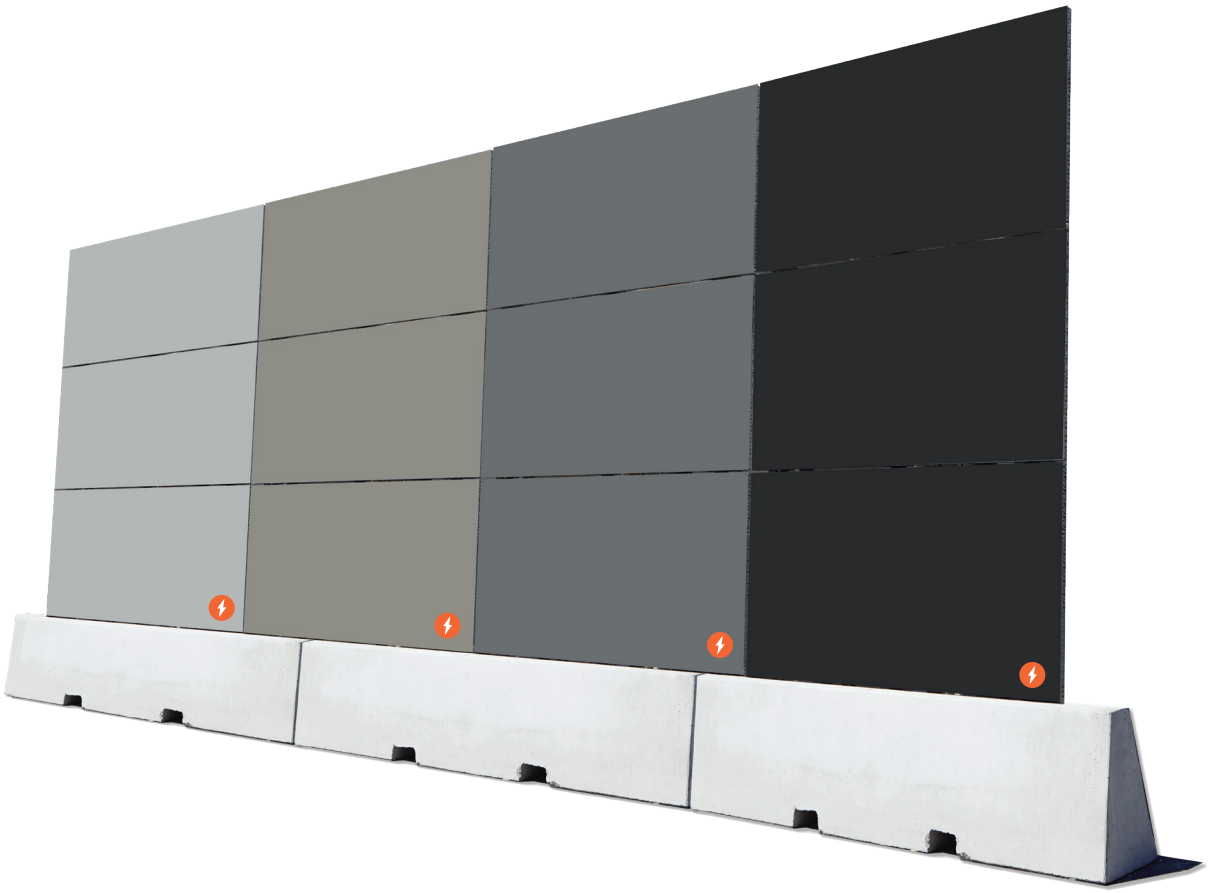

Marron

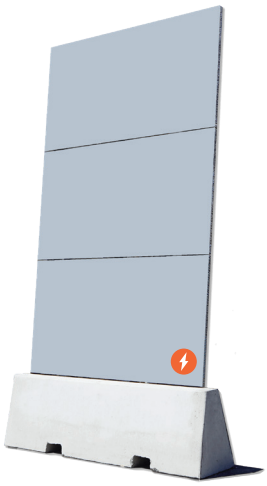

Brunswick Green

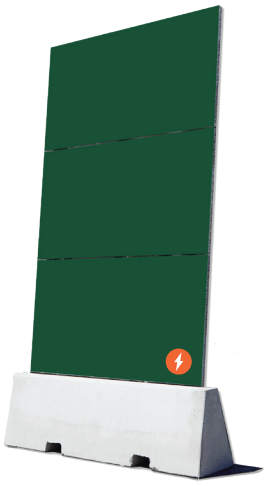

Jadite

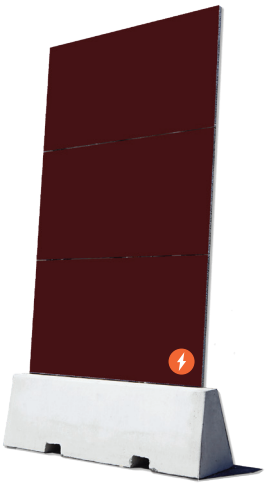
The power per panel for the solar ISP will change depending on the colour.

Angled Sola Noise Barrier (PVNB)









Mitrex Solar Noise Barriers can be made in any colour or pattern.

- **Toll Free**

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- **Learn More**

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