



Building a Greener Future:

Sustainable Material Solutions Presentation



Who We Are

Natural Roots to Solar Innovation

Our mission is to be the catalyst that accelerates the adoption of sustainable, energy- generating, human-made structures.

Our Background

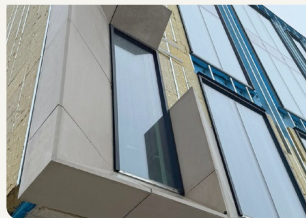
- 25+ years in cladding construction
- Manufacturing in Canada with 25,000 square feet daily output
- In-house team of skilled architects, designers, engineers, sales consultants, and project managers
- Fully code-compliant, fire-rated, and installation-ready architectural facade material



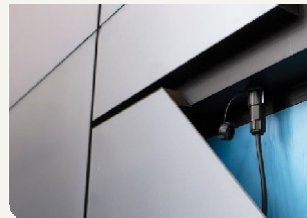
Stone Cladding



Lightweight Cladding



Multi-Facing & High-Performance Cladding



⚡ Solar Facade

Major Milestones

+25 Million SQFT
Installed

+700 Projects
Installed

+1.6 Million SQFT
In The Pipeline



GCAT Group
Founded

2003

2014

Cladify
Founded



Mitrex
Founded

2019

2024

MithraGPT (AI)
Launching

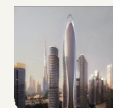
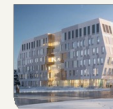


Guinness World Record -
Largest BIPV Solar Mural
The SunRise Building

2025

2026 - Q1

North America's Largest
BIPV Building
University Of Toronto



The World's Largest BIPV
Building
Binghatti Mercedes Benz Residences

2026 - Q2

Discover Energy-Generating Products

Mitrex

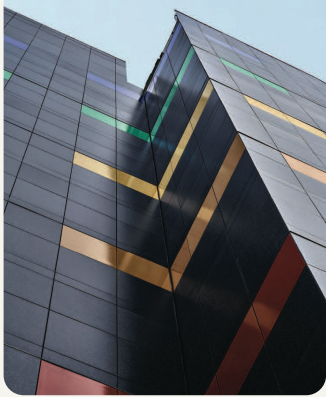
eFacade LITE Cladding

BIPV in 5 colors and 2 sizes



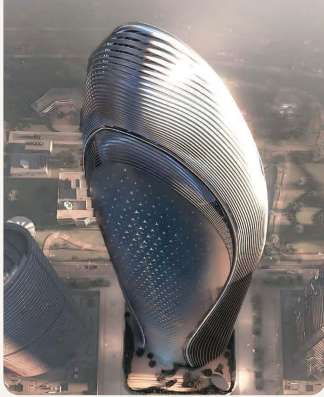
eFacade PRO Cladding

BIPV in 48 colors with rainscreen installation



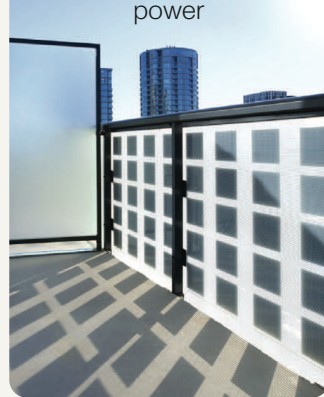
eFacade PRO+ Cladding

Custom BIPV in any color, size & system



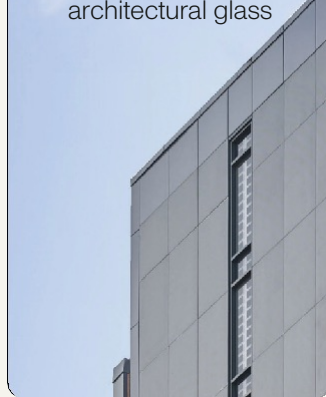
Solar Railing

Balcony railing systems with integrated solar power



Solar Glass

High-performance, energy-generating architectural glass



Discover Sustainable Products

Cladify

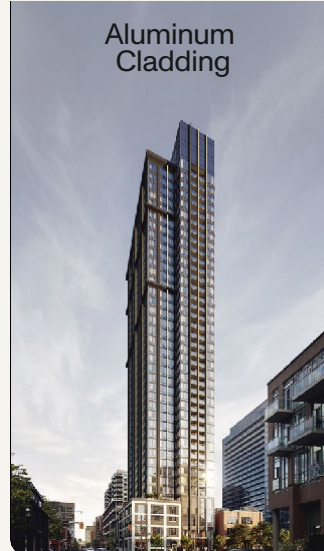
Stone
Cladding



Porcelain
Cladding



Aluminum
Cladding



Prefab
Cladding



Manufacturing & Company Video



Our Approach

We have a holistic approach to ensure architectural and sustainability needs are met and challenges on site are addressed.

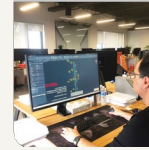
Our team provide guidance every step of the way from BIPV feasibility, optimization strategies, energy analyses, installation methods, and more.



Project
Initiation



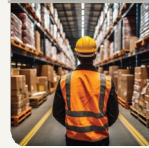
Design
Assist



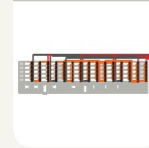
Project Proposal
& Modeling



Manufacturing



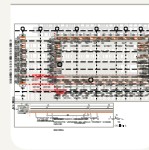
Procurement
& Scheduling



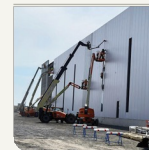
Project
Design



Project
Management



Installation
Manual



Installation

Why Mitrex?

High-Rise Residential



• The SunRise, AB, Canada

Educational Buildings



• University of Toronto, ON, Canada

Healthcare Facilities



• Chinook Hospital, AB, Canada

Large Scale Infrastructure



• Boston Intl. Airport, MA, USA

Ideal for New & Retrofit Projects

• Architects

- Available in thousands of colors and textures.
- LEED and net-zero certifications.
- Retrofit projects with sustainability needs and façade upgrades.
- Building code compliant.
- Fire tested (NFPA 285, S134, EN 13501).

• General Contractors & Builders

- Fast, simple installation.
- Traditional installation systems & electrical work (No tower crane required).
- Low scrap volume on site.
- Single trade onsite / very little storage space.
- Fire tested (NFPA 285, S134, EN 13501).

• Building Owners

- Accessing green financing and funding opportunities.
- ESG or carbon neutrality goals.
- Green building or renewable energy mandates.
- Low maintenance and a lifetime warranty.
- Sustainability targets while generating a ROI.

Solar Energy Generation

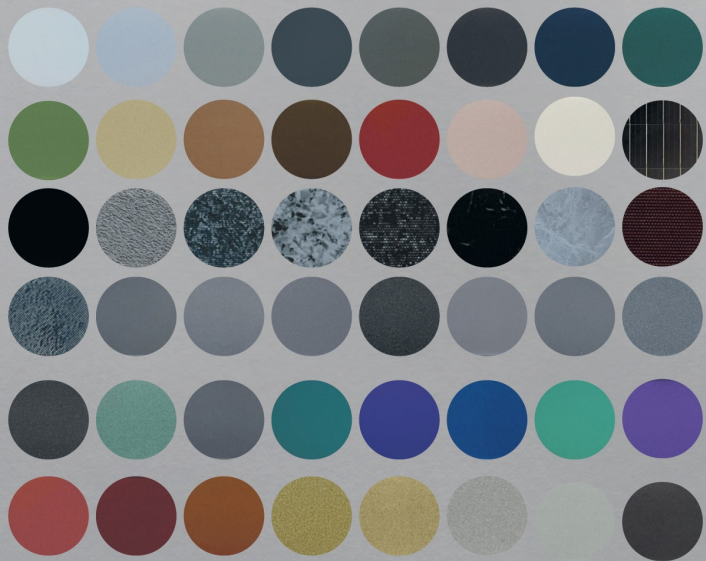


Does BIPV Work?

1. What does BIPV look like?
2. Isn't solar ugly?

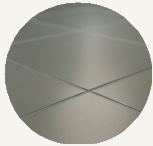


Facing Color Options



Facing Finishes

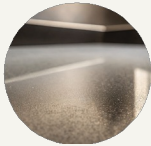
Mitrex's diverse range of textured solar facades offer BIPV with a smooth, high-gloss finish to a rustic, earthy feel of stone-like textures, to enhance building envelopes.



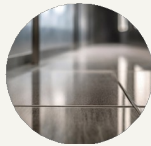
Super Satin
Glass



Satin
Glass



Matte-Matte
Glass



Glossy
Glass



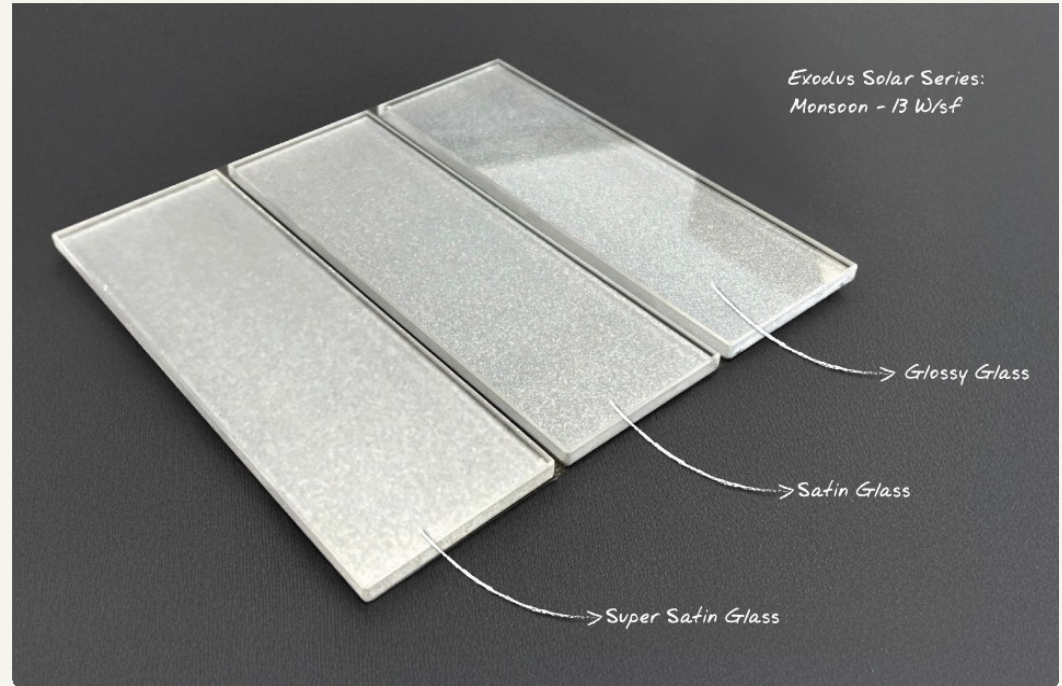
Wood Texture
Glass



Small Wood
Texture Glass



Granite
Glass



*Exodus Solar Series:
Monsoon - 13 W/sf*

Glossy Glass

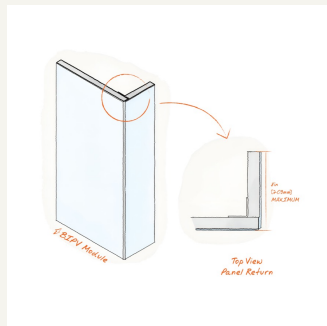
Satin Glass

Super Satin Glass

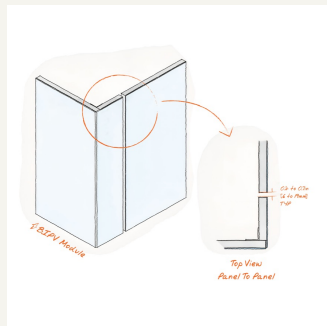
Designing With Sustainable Materials

Mitrex products allow for complete freedom in dimensions, shapes, and finishes, and can support unique project requirements, whether you're building with complex geometries or need systems for one-of-a-kind projects.

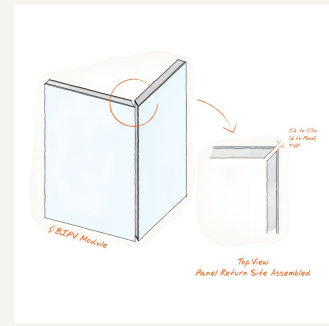
Details & Returns



Extruded Aluminum Profile Panel Return

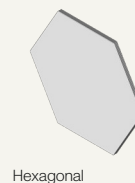
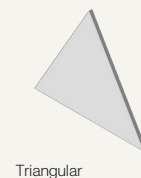


Extruded Aluminum Profile Panel to Panel

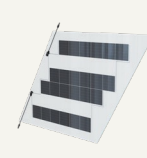
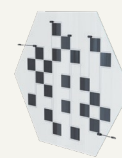
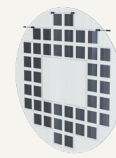
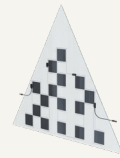


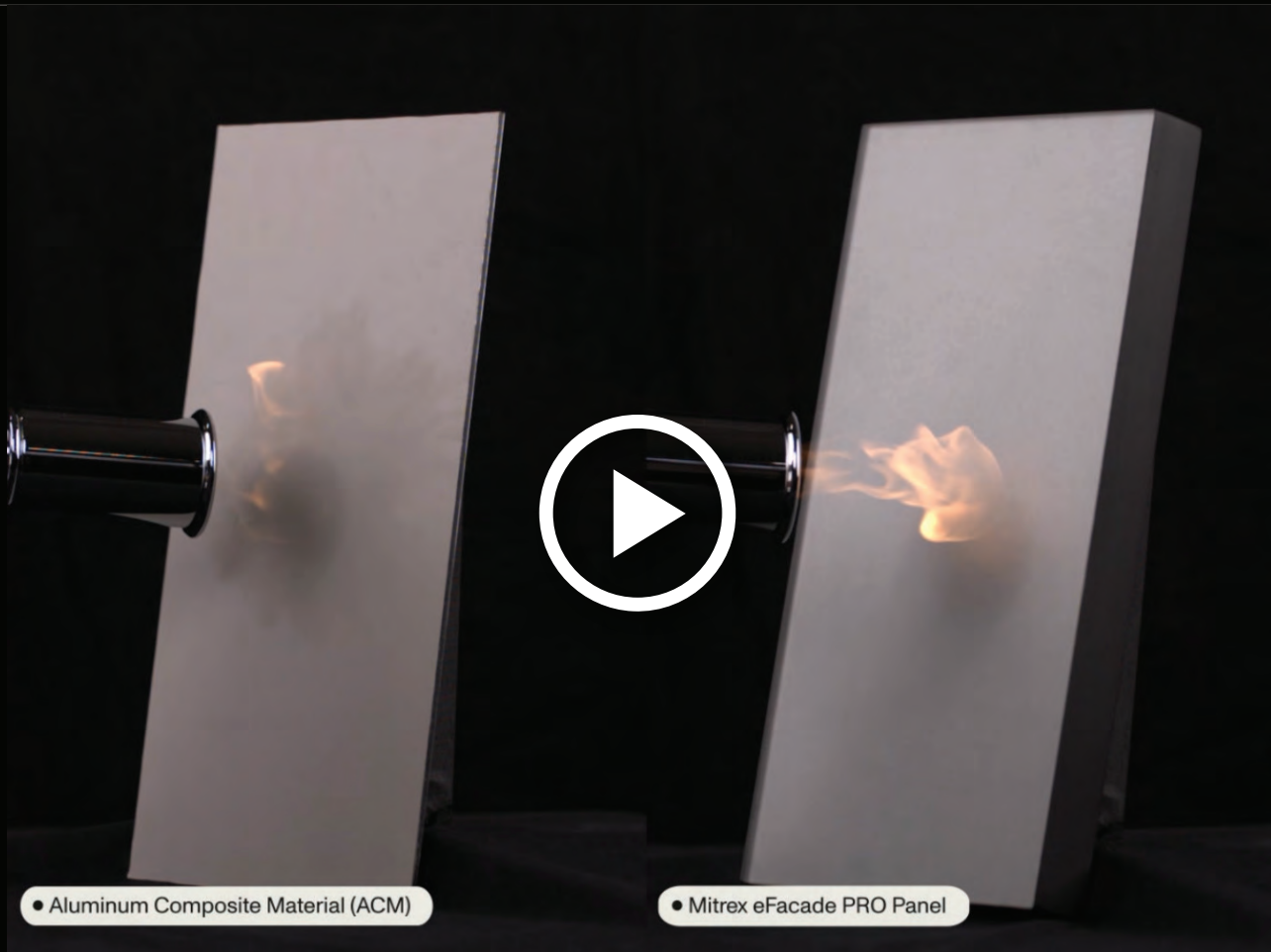
Aluminum Honeycomb Panel Return

Module Shapes



Cell Layout



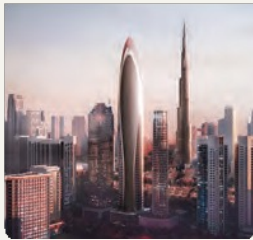


• Aluminum Composite Material (ACM)

• Mitrex eFacade PRO Panel

Solar Facade Product Options

Mitrex



	• eFacade LITE	• eFacade PRO	• eFacade PRO+
Colors & Patterns	5 color options	48 color options	Unlimited customizable colors & patterns
Sizes	2 size options	Custom sizes up to 80 x 39 in (2034 x 994mm).	Customizable single piece sizes up to 125 x 80 in (3175 x 2032mm). Preassembled pieces up to 420 inches (10.7) long.
Systems	Ventilated rainscreen system, eFacade LITE system	Ventilated rainscreen system (interlocking channel or anchor plate)	Customizable rainscreen, unitized or prefabricated system options
Material Cost	\$	\$\$	\$\$\$
Electrical Cost	\$	\$\$	\$\$\$
Project Fits	Retrofit or large-scale budget sensitive projects	High-rise residential, educational buildings, healthcare facilities, and large-scale infrastructures	Unique projects, mega projects, and design assist

Pricing varies depending on project complexity. Contact us for regional pricing.

Sustainable Product Options

Cladify

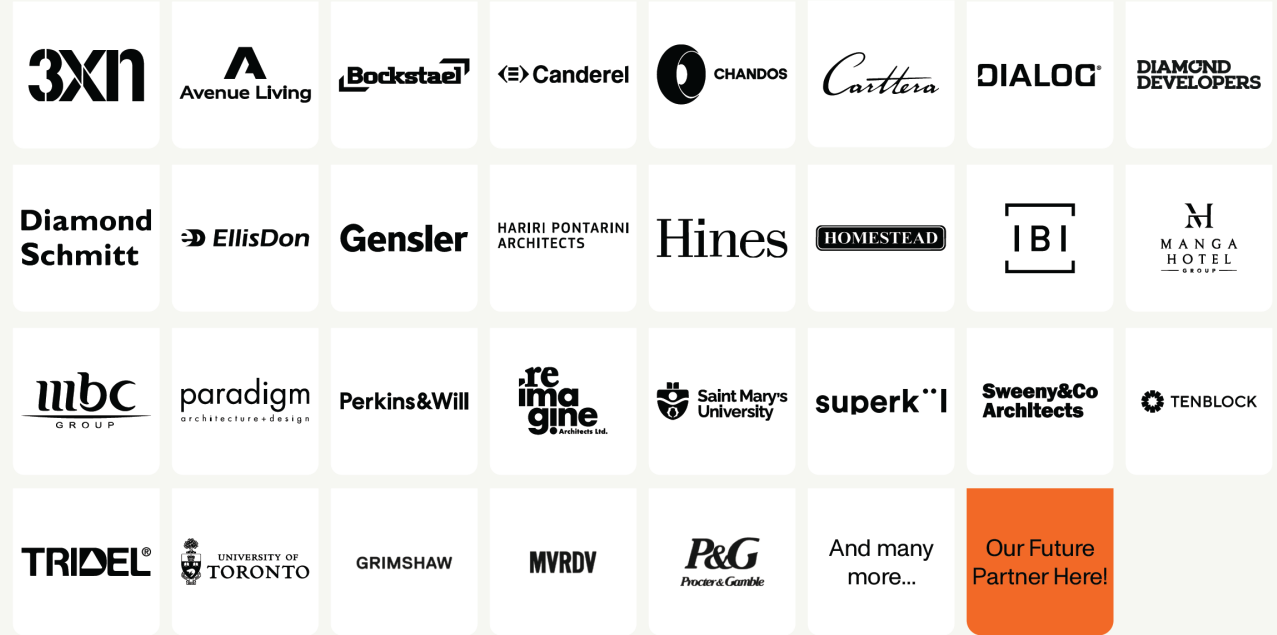
	• Cladify LITE	• Cladify PRO	• Cladify PRO+
Materials	5 stone options 5 porcelain options	20 stone options 20 porcelain options	Stone, porcelain or metal panel options
	Facing Finish: Polished and Honed	Facing Finish: Polished and Honed	Facing Finish: Polished, Brushed, Honed, Grooved
Sizes	2 size options: 73 x 36 in (1854 x 922 mm) 73 x 18 in (1854 x 456 mm)	Custom sizes up to 80 x 39 in (2034 x 994mm).	Customizable sizes up to: Stone: 120 x 60 in (3048 x 1524 mm) Porcelain: 120 x 60 in (3048 x 1524 mm) Metal: 300 x 96 in (7620 x 2438 mm)
	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm)	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm)	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm). Aluminum honeycomb with 1 or 2 in (25 or 50mm) thickness excluding facing.
Systems	Ventilated rainscreen system	Ventilated rainscreen system	Customizable rainscreen, unitized or prefabricated system options
Testing	3rd party tested, Code-compliant & safety tested, Fire tested	3rd party tested, Code-compliant & safety tested, Fire tested	3rd party tested, Code-compliant & safety tested, Fire tested



Does BIPV Work?

1. Who has implemented BIPV before?
2. What projects are suitable for BIPV?

Our Global Industry Partners



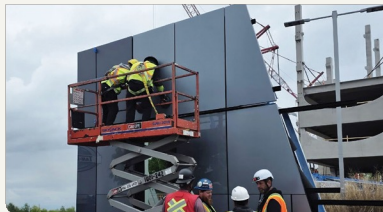
University of Toronto, Myron & Berna Garron Health Sciences Complex

Mitrex

The University of Toronto Scarborough selected Mitrex to meet its ambitious goal of generating at least 20% of building energy from renewables, integrating a 632 kW BIPV system into the façade to replace conventional cladding.

Mitrex's design-assist process enabled architectural freedom through multi-colored panels while ensuring energy performance and cost-effectiveness.

PRODUCT USED:
eFacade PRO+



ARCHITECT:
**Diamond Schmitt Architects/
MVRDV**
DEVELOPER:
University of Toronto
BUILDING TYPE:
University, Medical
PROJECT SIZE:
63,000 SQFT
SYSTEM SIZE:
632kW
ANNUAL POWER OUTCOME:
420,000kWh
COMPLETION DATE:
2026

ROI:
Immediate



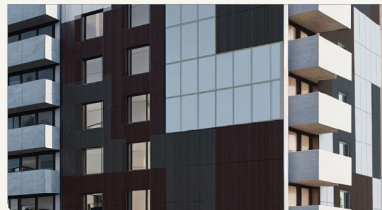
Victoria Park Community Homes

Mitrex

The Victoria Park Community Homes retrofit in Hamilton, Ontario, demonstrates how solar technology can be an ideal solution for retrofits.

Spanning 11,000 square feet, designed by Invizij Architects and developed by Victoria Park Community Homes, the building now generates 110kW of clean electricity.

PRODUCT USED:
eFacade LITE



ARCHITECT:
Invizij Architects
OWNER/DEVELOPER:
Victoria Park Community Homes
BUILDING TYPE:
Residential, Retrofit
PROJECT SIZE:
11,000 SQFT
SYSTEM SIZE:
110kW
ANNUAL POWER OUTCOME:
71,000kWh
COMPLETION DATE:
2026

ROI:
Immediate



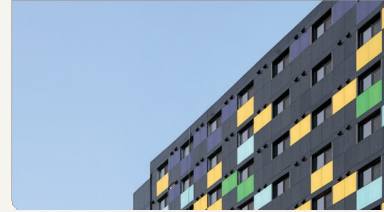
The Sunrise Retrofit

Mitrex

Avenue Living chose Mitrex's BIPV façade to exceed a 50% carbon emissions reduction target required for retrofit financing, replacing traditional fiber cement siding with a 267 kW solar cladding system.

The design also incorporated a culturally significant mural, creating the world's largest BIPV art installation while delivering long-term energy savings and ROI in under five years.

PRODUCT USED:
eFacade PRO and PRO+



ARCHITECT:
MBC Group
OWNER/DEVELOPER:
Avenue Living/Logyx Solutions
BUILDING TYPE:
Residential Retrofit
PROJECT SIZE:
30,534 SQFT
SYSTEM SIZE:
267kW
ANNUAL POWER OUTCOME:
180,000kWh
COMPLETION DATE:
2025

ROI:
4 Years



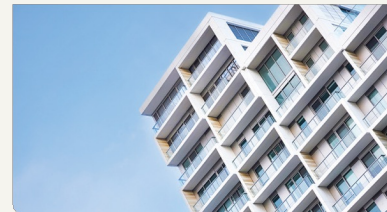
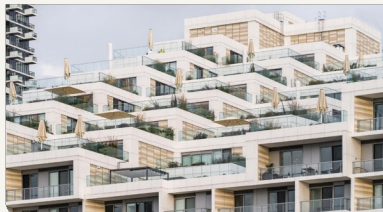
Aquabella

Cladify

Tridel and Hines collaborated with Cladify (a Mitrex company) during schematic design to replace over 8,500 individual porcelain slats with 944 pre-assembled panels.

This shift streamlined installation, reduced costs by \$4–5 million and met architectural demands for non-reflective textures to minimize lake glare.

PRODUCT USED:
Cladify PRO+



ARCHITECT:
3XN, Kirkor Architects and
Planners
DEVELOPER:
Tridel, Hines
BUILDING TYPE:
Residential / Retail Building
PROJECT SIZE:
160,000 SQFT
COMPLETION DATE:
2022



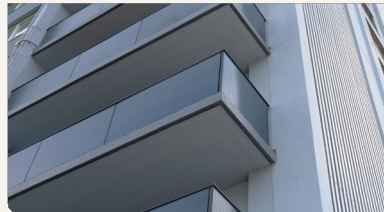
1154 Wilson Ave. Balcony Retrofit

Mitrex

Ten Block adopted Mitrex SolaRail™ balcony panels to replace aging infrastructure and generate on-site energy, achieving a 142 kW system that powers the equivalent of 16 residential units.

The system offered a strong ROI, minimal tenant disruption, and a modernized aesthetic that aligned with sustainability goals.

PRODUCT USED:
SolaRail®



DEVELOPER:
Tenblock Development
OWNER:
DIS Wilson
BUILDING TYPE:
Residential Building
PROJECT SIZE:
4,000 LFT
SYSTEM SIZE:
162 kW
ANNUAL POWER OUTCOME:
89,300kWh
COMPLETION DATE:
2024

ROI:
Immediate



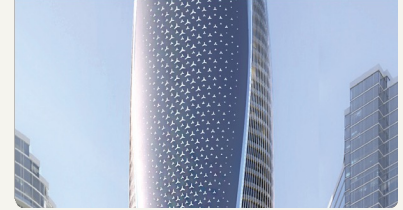
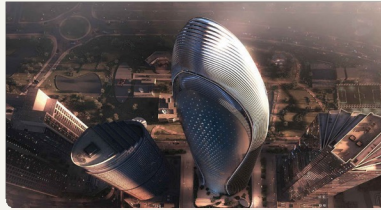
Binghatti Mercedes-Benz Residences

Mitrex

Binghatti Developers selected Mitrex to design a custom BIPV façade that integrates Mercedes-Benz branding with LED-lit solar panels, achieving both fire-rated compliance and visual impact.

Mitrex provided full design support, testing, and engineering to deliver a seamless blend of performance and luxury identity.

PRODUCT USED:
eFacade PRO+



ARCHITECT:
Silverstone
OWNER/DEVELOPER:
**Binghatti Developers,
Mercedes-Benz**
BUILDING TYPE:
High-End Residential
PROJECT SIZE:
80,450 sqft
SYSTEM SIZE:
619kW
ANNUAL POWER OUTCOME:
597MWh
COMPLETION DATE:
2026



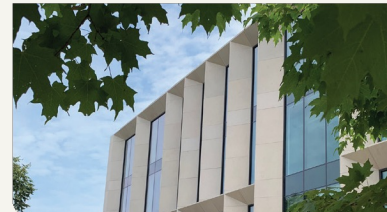
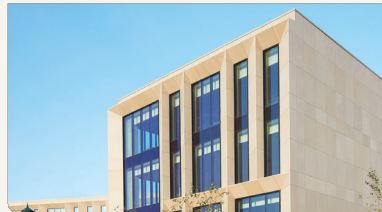
Western University Entrepreneurship & Innovation Centre

Cladify

Western University partnered with Cladify to replace heavy stone cladding with lightweight, pre-assembled panels to reduce structural load, improve thermal performance, and meet energy efficiency goals.

The system enabled rapid installation, eliminated complex framing, and saved \$3–4 million in wall assembly costs.

PRODUCT USED:
Cladify PRO+



ARCHITECT:
Perkins & Will
DEVELOPER:
Hayman Construction
BUILDING TYPE:
Educational Building
PROJECT SIZE:
44,000 SQFT
COMPLETION DATE:
2024



Installation Systems

We understand that your vision is unique; our solutions match it.

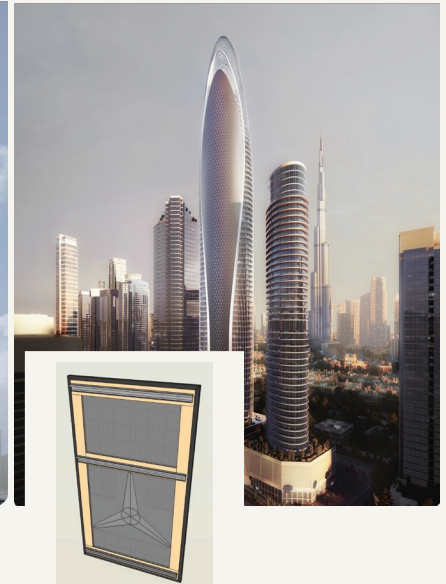
From rainscreen to unitized wall systems, our versatile systems can accommodate any project with any facing material.



Cladishield System
Rainscreen



Cladifab System
Prefab Wall



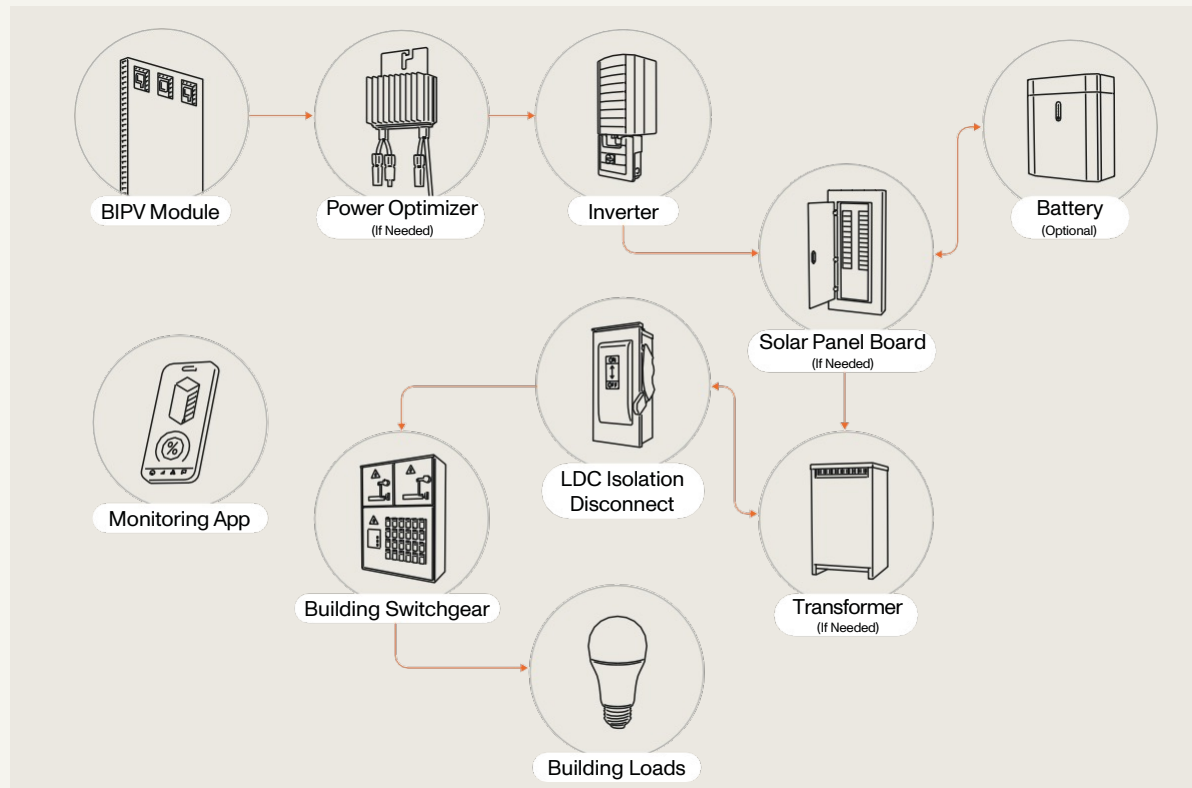
Customizable Integrations

Complete BIPV System

Our BIPV systems harness the essence of traditional solar arrays, but with a vertical twist.

Panels are linked into strings through pigtail connections, converting solar energy from DC to AC through efficient inverters.

For larger projects, string inverters manage the energy flow, while micro-inverters are perfect for smaller setups.



Electrical Installation

- Engineered and installed like typical solar system.
- Does not require specialty equipment.
- Monitoring software for tracking and performance management.

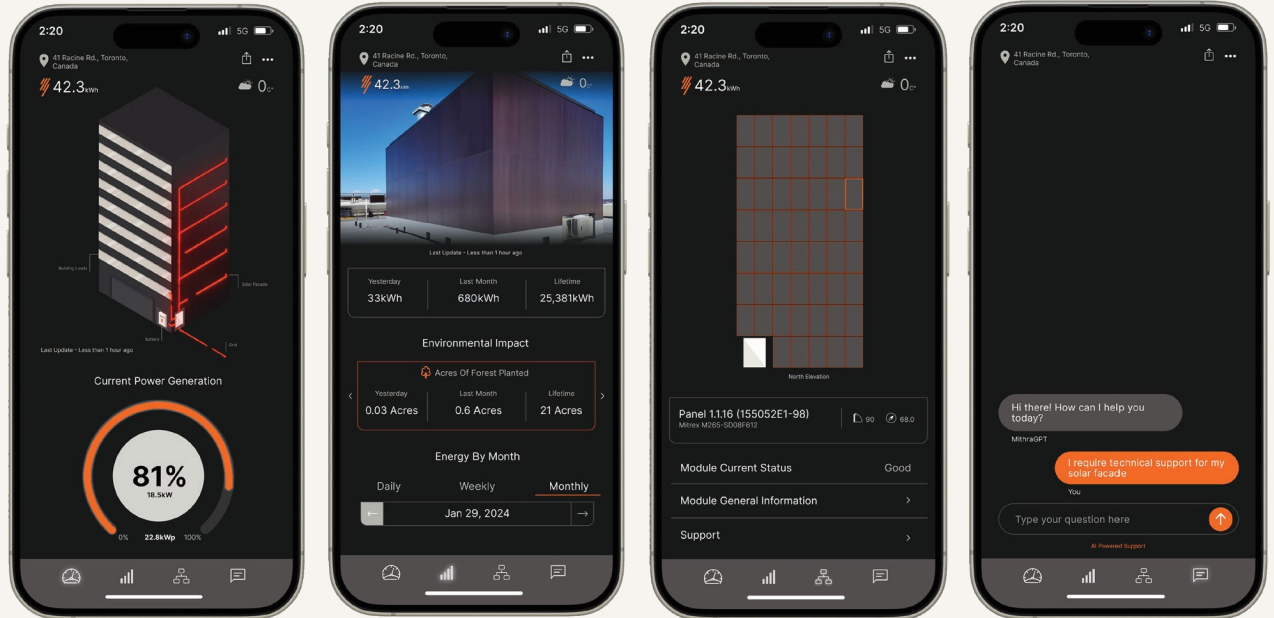


DESIGN SERVICE:
Electrical Design Support



Monitoring System

The Mitrex Monitoring systems pairs with your energy-generating solar facade to give you real-time monitoring, and energy insights.



Design Assist Services

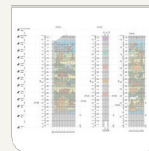
Through our Design Assist process, we provide system modeling, engineering validation, energy simulations, and prefabrication strategies—streamlining construction and reducing life cycle costs.

Our BIPV and prefabricated façade solutions ensure code compliance, sustainability, and design integrity.



Initial Consultation

TECHNICAL DELIVERABLES:
Site analysis summary, design brief



Solution Exploration

TECHNICAL DELIVERABLES:
System recommendation matrix, solar energy potential analysis



Collaborative Design Development

TECHNICAL DELIVERABLES:
CAD/Revit details, connection drawings, integrated facade layouts



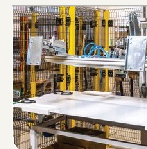
Engineering & Energy Analysis

TECHNICAL DELIVERABLES:
Structural calculations, energy modeling reports, code compliance checklists



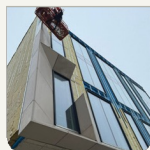
Prototyping & Testing

TECHNICAL DELIVERABLES:
Performance test reports, QA reviews



Prefabrication & Logistics Planning

TECHNICAL DELIVERABLES:
Factory QC documentation, logistics plan, panel maps

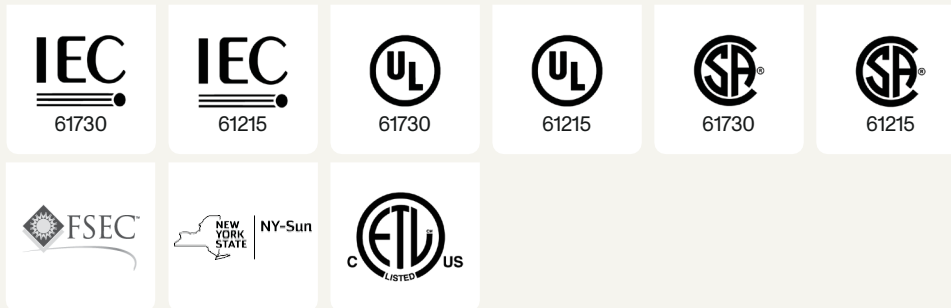


Implementation Support

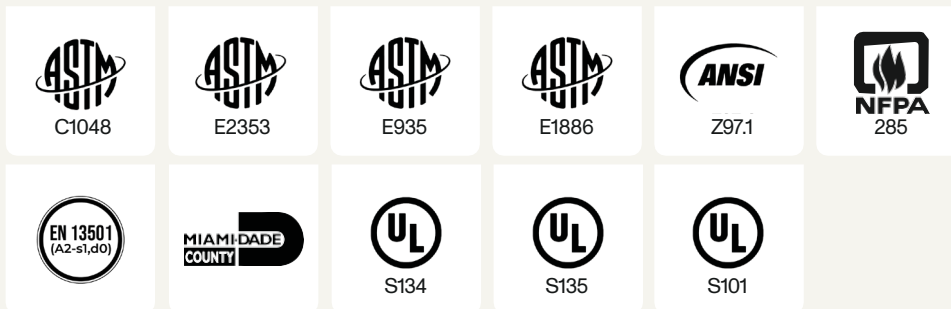
TECHNICAL DELIVERABLES:
Site installation guide, QA checklist, commissioning certificate

Testing and Certifications

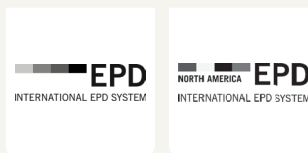
PV Testing



Building Material Testing



Environmental Product Declaration

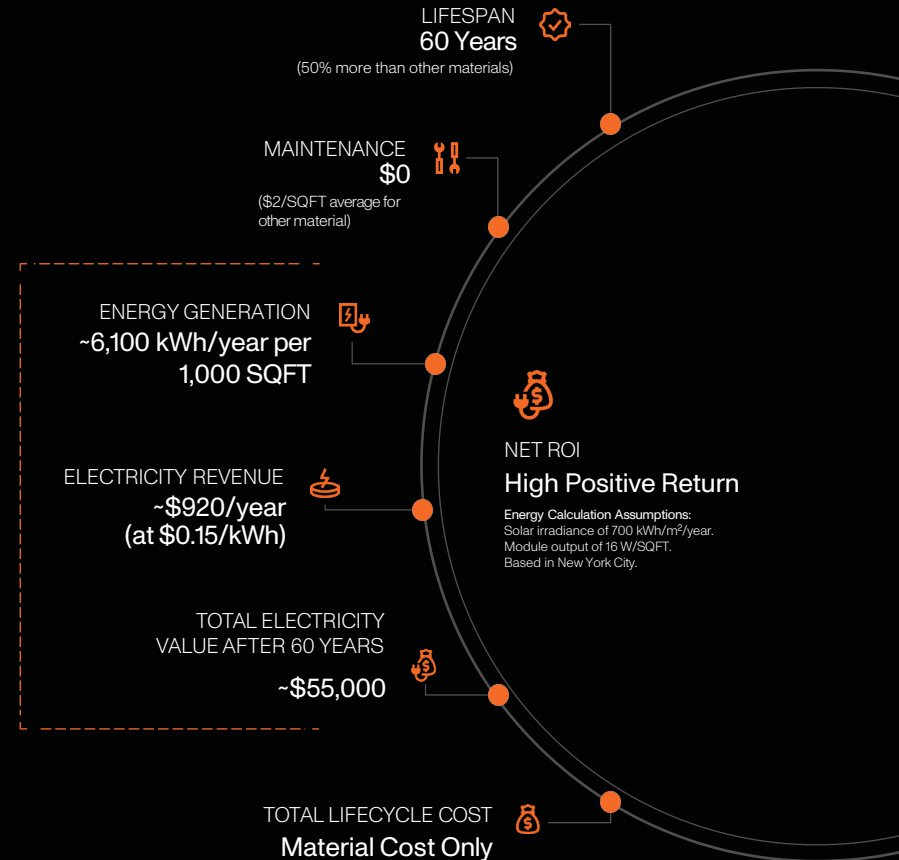


Mitrex BIPV Aluminum Honeycomb: 40.79 kg CO₂e/m²
 Mitrex BIPV Extruded Aluminum Profile: 30.08 kg CO₂e/m²
 Cladify Porcelain: 25.70 kg CO₂e/m²
 Cladify Stone: 30.58 kg CO₂e/m²
 Cladify Metal Panel: 21.65 kg CO₂e/m²

ROI & Payback Benefits

Mitrex turns your façade into a long-term asset, one that not only enhances your building but actively pays you back through clean, on-site energy production.

- The Mitrex facade pays for itself immediately or up to year 5 through electricity revenue from clean energy generation.
- Conventional material such as ACM or GFRC continue to cost you in maintenance, cleaning and replacement (typically after 30 years).
- Mitrex facade is maintenance free and has a lifespan of 60 years.



Thank You!

Let's work together to shape our cities into models of sustainability and resilience. The journey towards a greener and brighter future begins with each one of us taking proactive steps to embrace innovative solutions like BIPV and drive sustainable development. Together, we can make a difference.

Mitrex and Cladify Projects



<https://youtu.be/9uFctxQaCo>



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Testing Summary

● Category	● Test Name	● Test Specification	● Result
Acoustic	Sound Transmission Loss	ASTM E90	Sound Transmission Rating: CladShield Rainscreen: 34; Claditized Unitized: 35; CladFab Prefab: 55
	Salt Spray Resistance	ASTM B117-16	No deleterious effects.
Environmental	Laboratory Aging of Sandwich Construction	ASTM C481-99 (Reapproved 2016)	ASTM C273; C297; C364; C393 tests were reconducted after aging: the variation was +1.36 %, -5.90%; +2.55%; -7.95%. Note: Positive variation indicates no decrease in strength after aging.
	Resistance to Rapid Freezing and Thawing	ASTM C666/C666M-15	No visible change to panel
	Air Leakage Resistance	ASTM E283-04 (2012)	$Q_{inf} = 0.031 \text{ cfm/ft}^2$ or 0.155 L/s-m^2 at 300 Pa; $Q_{exf} = 0.024 \text{ cfm/ft}^2$ or 0.122 L/s-m^2 at 300 Pa
	Fluorescent UV Exposure	ASTM G154 -16	No visible change
	Water Penetration Resistance	ASTM E331	No water infiltration at 15 psf or 720 Pa
	Fire Endurance Test	ASTM E119 / CAN/ULC S101	Passed
Fire Safety	Exterior Wall Assembly Fire Test	CAN/ULC S134	Passed
	Fire Classification	EN13501	Rating: A2-s1,d0
	Tunnel Test	ASTM E84	FSI = 10; SDI = 200; Class A
	Non-Combustibility (ASTM E136)	ASTM E136	Passed
	Multi-Story Fire Test	NFPA 285	Passed
	Surface Burning Characteristics	CAN/ULC S102	FSR = 0; Class A
	Non-Combustibility (CAN/ULC S114)	CAN/ULC S114	Passed
	Combustibility Parameters (Cone Calorimeter)	CAN/ULC S135	Passed NBCC 2015 requirements
Impact / Safety	Large Missile Impact Test	ASTM E1996 / TAS 201	Passed
	Cyclic Pressure Loading	ASTM E1886 / TAS 203	Passed. Over 3,500 positive and negative pressure cycles were applied at $\pm 2880 \text{ Pa}$ (60 psf), equivalent wind load of 165 mph.

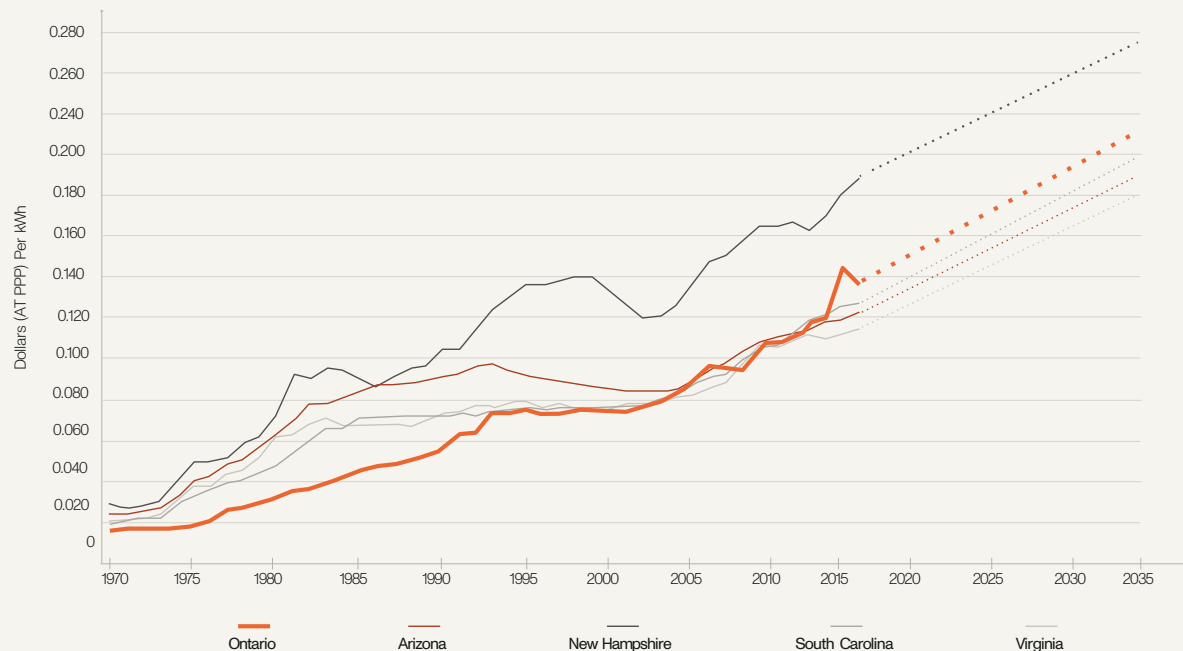
Testing Summary

● Category	● Test Name	● Test Specification	● Result
Mechanical	Shear Strength and Shear Modulus	ASTM C273/C273M-18	Ultimate core shear strength = 1.01 MPa (147 psi); Core shear modulus = 10.9 MPa (1583 psi)
	Shear Strength by Beam Flexure	ASTM C393/C393M-16	Max core shear strength = 0.94 MPa (137 psi); Facing bending stress = 8.14 MPa (1180 psi)
	Flexure Creep Evaluation	ASTM C480/C480M-16	Net creep (in/day) facing - 0.029
	Density of Sandwich Core	ASTM C271/C271M-16	327 kg/m ³ (20.42 lbm/ft ³)
	Flatwise Tensile Bond Strength	ASTM C297/C297M-16	1.52 MPa (220 psi)
	Edgewise Compressive Strength	ASTM C364/C364M-16	37.85 MPa (5490 psi)
	Flatwise Compressive Strength	ASTM C365	1.92 MPa (278 psi)
	Flexural Strength	ASTM C880/C880M-15	22.83 MPa (3311.21 psi); No failure
	Tensile Properties of Adhesive Bond	ASTM C897-08 (2016)	Adhesive bond did not fail
Structural	Damage Resistance	ASTM D7766/D7766M-16	No panel deformation
	Structural Performance	ASTM E330	+/- 80 psf or +/- 3840 Pa; no failure
Thermal	Thermal Resistance	ASTM 1363-11	0.20 m ² ·°C/W (1.12 hr·ft ² ·°F/BTU)
	Linear Thermal Expansion	ISO 10545-8	11.28 × 10 ⁻⁶ /°C
PV Quality	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval	IEC/UL 61215	Passed
PV Safety	Standard for Photovoltaic (PV) Module Safety	IEC/UL 61730	Passed

Electricity Cost Over The Years

On average electricity rates per kWh increase 1.4% - 1.7% per year in North America and almost doubles per decade.

Statistics Canada: Electric Power Statistics, Volume 2 (1970-1996); Electric Power Generation, Transmission and Distributions (1997-2004); Annual Electricity Supply and Disposition Survey (2005-2015). Energy Information Administration: State Energy Data System (SEDS).



Electric Utility Revenue per kWh for Residential Customers for Ontario and Selected States