

First Proven Curtain Wall to Harness the Energy of the Sun



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Energy conservation. Environmental awareness. Economy. Aesthetics. Today's building owners, architects and occupants want it all. And 1600 PowerWall™ Curtain Wall System – the first integrated curtain wall system to produce electrical energy from the power of sunlight – provides the solution.

Growing concern for the world's dwindling natural resources and environmental pollution has stimulated the production of solar cells and panels for generating electricity. Initially a power source for satellites, the technology has now landed firmly at a more economical level and steered industry partnerships. Kawneer, in partnership with

a photovoltaic (PV) solar electric products and systems manufacturer, has developed the first solar electric – or PV – curtain wall. 1600 PowerWall™ Curtain Wall System provides a reliable energy source that is silent, pollution free, easily installed and easily maintained, and has no moving parts.

1600 PowerWall™ Curtain Wall System combines a choice of various Kawneer 1600 Wall Systems™ with polycrystalline or amorphous silicon PV cells – designed specifically for integrating with curtain wall products.

AESTHETICS

PV panels substitute directly for spandrel panels, glass or other materials in vertical curtain wall or slope glazing systems. They are fully compatible with various Kawneer 1600 Wall Systems™ and can be glazed either conventionally or in two-sided structural silicone glazing with standard glazing procedures and equipment. Inverters convert the energy generated by the PV modules into usable AC current. Modules are available in a range of sizes compatible with building requirements.



The polycrystalline PV panel consists of a piece of low-iron, tempered float glass. The solar cells are set between two layers of ethyl vinyl acetate (EVA) and laminated. The back of the ply or the interior side of the panel can be laminated with a protective layer of film. Overall panel thickness is 1/4".

Thin film technology creates solar cells by depositing semiconductor alloys in thin layers on glass. Thin film PV panels have an aesthetically pleasing surface and a more uniform appearance than most crystalline silicon PV panels and blend easily into almost any architectural design. Thin film PV panels complement standard building materials, and color matching can be provided for critical applications.

PERFORMANCE

During the past several years, the efficiency of PV panels has nearly doubled. 1600 PowerWall™ polycrystalline and thin film modules deliver at least 90% of rated minimum power for 20 years based on field experience. 1600 Wall Systems™ have demonstrated compliance with the following performance standards:

Air Infiltration	ASTM E283
Static Water Penetration	ASTM E331
Dynamic Water Penetration	AAMA 501.1
Structural Performance	ASTM E330
Seismic Performance	AAMA 501

ECONOMY

1600 PowerWall™ Curtain Wall System offers building owners and architects dual energy savings over conventional power generation by:

- Contributing solar-generated electricity, thus leading to reduced purchases from electric utility companies. In some cases, PV system production exceeds building requirements and the excess is fed into the utility grid for credit.
- Reducing peak demand, since the output of PV panels increases with stronger sunlight.

The output of 1600 PowerWall™ Curtain Wall System depends upon specific characteristics such as wall orientation, shading and climatic conditions. Polycrystalline PV panels generate electricity from light rather than heat and can generate up to 240 watts. They can be wired in series or parallel and integrated into the building's electrical service by way of a central inverter.

LEED® CREDITS

Leadership in Energy and Environmental Design (LEED®) credits may be obtained for Renewable Energy for providing on-site renewable energy sources that will reduce environmental impacts associated with fossil fuels. 1600 PowerShade™ can be used to help meet this objective. The PV cells convert light energy from the sun into electricity to be fed into the building's system. On-site renewable energy sources reduce external energy demands of the building, increasing cost payback.

FOR THE FINISHING TOUCH

Permadonic™ anodized finishes are available in Class I and Class II in seven different colors.

Painted finishes, including fluoropolymer, that meet or exceed AAMA 2605 are offered in many standard choices and an unlimited number of specially designed colors.

Solvent-free powder coatings add the "green" element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.