



Lumeta takes aim at the residential market with an innovative peel-and-stick solar system

Power, clarity and DuPont reputation behind choice of Tefzel™ ethylene tetrafluoroethylene (ETFE) frontsheet material for lightweight, semi-rigid solar panels



Tefzel™ ETFE-based frontsheets, available from DuPont, provide a lightweight, flexible alternative to glass



Clarity of Tefzel™ ETFE-based frontsheets delivers 3% more power than closest competitor



Roof beneath panels remains 5 - 8°F cooler than ambient temperatures



Reduces labor time and cost

SUMMARY

Many homeowners would like to take advantage of solar power, but installing a rooftop system can be daunting. Concerns about damaging roofs by drilling in racking and mounting systems, and the possibility of voiding warranties on shingles can be barriers. Making residential solar systems accessible and easy is the goal for Lumeta, a Sunnyvale, CA-based solar company. Using Tefzel™ ETFE film, available from DuPont, Lumeta has developed a lightweight, flexible peel-and-stick solar panel that makes putting a solar power system on a roof almost as easy as plugging in a lamp.

“These clear thermoplastics offer an alternative to glass, and are lightweight, flexible, unbreakable and extremely durable.”

Challenge

The challenge was to build a high-performing plug-and-play solar energy system for residential rooftops that was attractive, easy to install, and would not damage shingles or the roof structure. The solar panels had to be lightweight, flexible and durable, deliver a maximum of power and be comprised of materials that would inspire confidence in distributors and residential customers.

Solution

The peel-and-stick solar panels developed by Lumeta feature Tefzel™ ETFE film, available from DuPont. These clear thermoplastics offer an alternative to glass, and are lightweight, flexible, unbreakable and extremely durable.

In addition to significantly reducing panel weight, the Tefzel™ film also transmits light more effectively than glass, thanks to their lower refractive indices, which helps produce more power. Using a powerful adhesive, the panels are affixed directly onto the rooftop (shingle, concrete or metal), so no racking system is needed and no roof penetration is required.

The panels also feature DuPont™ Tedlar® polyvinyl fluoride film-based backsheets, the only backsheet material field-proven to protect solar panels for 25 years or longer, in all types of weather conditions.

Results

Lumeta’s new residential system is basically a smaller version of its original commercial solar panel, which it has sold around the globe since 2009. “DuPont was instrumental in the development of our original commercial module, helping us to do testing at the DuPont Research & Development Center in Shanghai, China,” said Brian Flaherty, Chief Operating Officer, Lumeta.

Phoenix Tag, a leading professional roofing company and solar installer based in Denmark, completed an 89,300 kilowatt solar installation in 2012 at Aarhus Academy in Denmark’s second largest city using Lumeta panels.

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The system’s performance has exceeded expectations, delivering 10% more power output than anticipated within its first three years of service.

“Phoenix Tag and Aarhus Academy have been delighted with the performance of the panels, and we’re confident about their durability,” said Kim Slavensky, director, Phoenix Tag. “The panels could be affixed without penetrating the roof, and they have strong resistance to wind and snow loads which is critical here in Denmark.”

Now that Lumeta is moving into a new market, with a new product, its alignment with DuPont is just as important. “Often, there’s a prejudice against a new product that people say can’t possibly work. So in our residential panel we’ve used DuPont products that are very well known, and that gives us added credibility,” says Flaherty. Lumeta’s residential system recently launched in the North American market.

PROJECT LOCATION

Aarhus, Denmark



PROJECT DETAILS

Project	Lumeta plug-and-play solar panels installed by Phoenix Tag
Milestone reached	Innovative peel-and-stick solar panels that put solar within reach of the average consumer
Benefits	Lightweight, powerful and durable rooftop solar panels
Material specified	Tefzel™ ETFE film and DuPont™ Tedlar® film-based backsheets