



Steel and solar power: a match made in green heaven

The solar energy sector has already provided significant demand for steel products, but ThyssenKrupp Steel Europe and US-based Konarka Technologies are working to take the relationship between solar power and steel one step further. Instead of merely providing the structure for solar panels, the two companies are developing steel roof and façade elements with integrated organic photovoltaics—in other words, steel with solar cells built right in.

The new product will be based on PowerPlastic, a solar module from Konarka Technologies made from photo-reactive polymer that can be dissolved and applied to various substrates. Steel is a viable base for the solution, as well as glass, films and textiles. But considering steel's already-prevalent use in construction, the combination of PowerPlastic and steel is a no-brainer, especially considering that the construction elements with organic photovoltaic cells are available in various colors and sizes, and additionally, the product is 100 percent recyclable. And as mentioned, the product can be used on building façades, not just roofs, allowing for greater flexibility in solar energy planning.

So steel coating plants in the US should take note—there might be good reason to invest in expanding facilities soon.

Inflatable steel furniture: Interior design of the future?

Fabricators are always looking for new ways to manufacture products with steel, and a two-man team from Poland and Switzerland has invented quite a unique

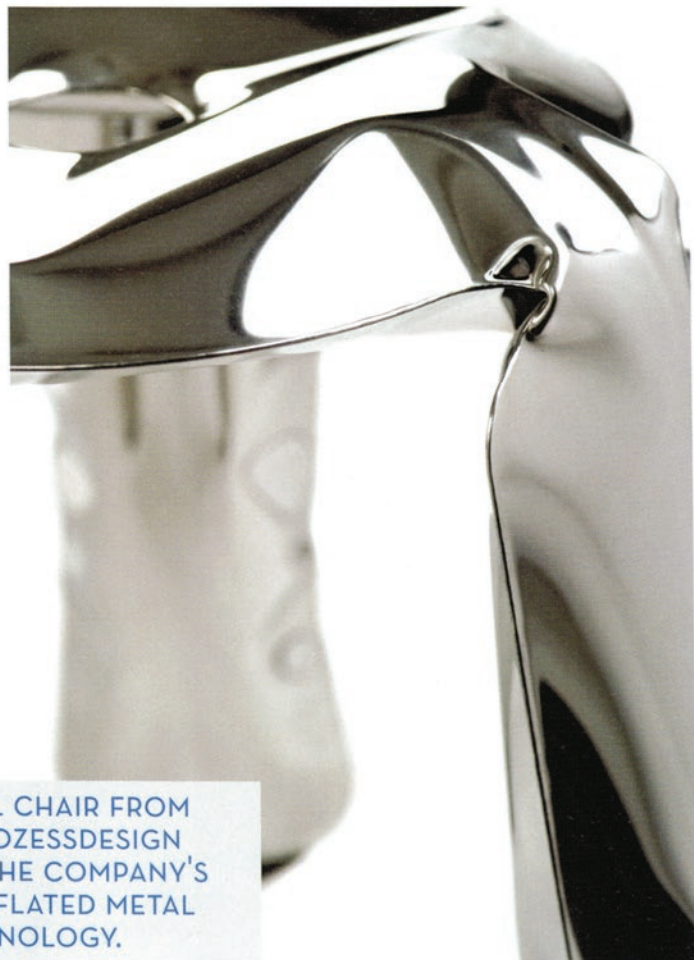
new system for making steel products that are cheaper, lighter, but no less sturdy than traditionally fabricated steel. The trick is to fill the steel with air.

Oskar Zieta and Phillipp Dohmen are self-proclaimed pioneers in the field of “Free Inner Pressure Deformation,” an engineering technique that pumps air between two sheets of steel in order to make furniture, ladders, stools and more. Eventually, the team foresees the technique being expanded into the manufacture of wind turbines and highway guard rails.

The precise process involves cutting thin steel sheets with a laser, welding them together robotically, and then inflating the space between. While high-pressure air compressors are typically used to inflate the sheets, in the future it might not be out of the question for home-use inflators, such as bicycle pumps, to do the job. This would enable the products to be

used in mass-consumer applications, in which flat parcels containing the pre-formed furniture could be easily shipped and stored in retail locations, to be inflated by the end consumer.

Until then, the team's company, Zieta Prozessdesign, sells already-inflated furniture, ranging in price from US\$275-\$415. And while the chairs and stools might look unconventional (not unlike inflated mylar balloons), they could very well be representative of the interior design of the future.



THIS STEEL CHAIR FROM ZIETA PROZESSDESIGN FEATURES THE COMPANY'S UNIQUE INFLATED METAL TECHNOLOGY.