High friction testing and innovations in solar

Tire Conversion Technologies (TCT) has been advancing rapidly in the global solar industry with its innovative rubber-recycled products. With high friction testing results on the horizon and a new partnership with Walmart focused on achieving the company's Eco Label, PES caught up with Jillian Laurenzo Ketcham, Director of US Sales, to discuss these developments.

PES: Perhaps a good place to start today Jillian would be to ask about your recent partnership with Walmart. How did this come about, and what unique opportunities does it present for TCT?

Jillian Laurenzo Ketcham: Yes, Tire Conversion has been speaking to parts of the Walmart team responsible for sourcing product development and sustainability, in their automotive division for over three years. Like most high profile companies in the retail sector, there is a growing push from Walmart to offer more US-made, sustainable products, and our three launch products, which include a range of jack pads and wheel chocks, all replace virgin synthetic rubber or plastic alternatives.

PES: The Walmart Eco Label using RCS is a significant next step for TCT. What is the process and criteria for obtaining this label, and what steps are you taking to ensure compliance and maximize the benefits of this recognition?

JLK: The Recycled Claim Standard, RCS, is a Global Recycled Standard that sets out the criteria for third party certification of recycled materials and chain of custody. TCT only makes products from recycled rubber and our products are 93 to 95% recycled tire crumb. This helps simplify our certification, as we don't need to track and separate recycled from non recycled materials in our delivery, manufacturing, or distribution processes. We are halfway through, and once complete, we will be able to use the Eco Label on our Walmart products and the RCS Logo more generally in the branding and packaging for all of the products we make in our US facility.

PES: Do you think the partnership enhances your ability to serve a global customer base, especially those in the solar industry? Presumably, you are having to make logistical and operational changes to support this expanded service capability.

JLK: Definitely, TCT already has several global solar customers in the inverter and mounting system markets, both in the US and Europe, but the Walmart win has expanded our production capability in the US, and as

mentioned above, focused our ability to audit and track the recycled tire rubber material we use for all our products.

PES: Looking more specifically at solar, we see you have been conducting tests with a new US solar mounting system provider. What specific performance metrics and criteria are you focusing on during these tests?

JLK: Our Head of US OEM Sales, Joe Amirault, has been working with a new US mounting system company to jointly test the friction coefficient of our rubber products, on different commercial/residential roof surfaces including TPO, PVC and bitumen. The final test results will not be released until later this year. What I can say is that the friction results are better than we expected so our products are more stable in roof-mounted configurations and require less ballast and fastening.

PES: During your testing, what have you discovered about the high friction properties of your rubber material? How do these properties compare to existing materials used in solar mounting systems, and what potential advantages do they offer?

JLK: Generally, rubber has higher friction than plastics. TCT has experimented with different crumb sizes, binder mixes and densities to change the friction of our mats and products more generally. The testing showed that this research was correct. With regards to higher friction specifically, using our mats or rubber mounting feet under the solar framework, means the system requires less ballast and therefore saves cost, so good news.

PES: Based on your findings, how do you anticipate the high friction characteristics of your rubber material influencing the development of new products such as mats?

JLK: TPO is a particular issue for the solar industry, as it is widely used on commercial roofs in the US and is very smooth. High friction mats, pre cut to the specific sizes required by the mounting system providers, is an exciting new area of development for TCT.

PES: What other new applications or markets do you foresee for your rubber?

JLK: Parallel innovations being looked at by TCT include replacing injection molded end caps on rails found on both roof and ground-mounted solar systems, with recycled tire rubber alternatives. Tire rubber is more resistant to UV so products made with this last longer outside than most injection molded plastics. Rubber is also a more flexible, temperature resistant material and therefore expands and contracts with the rails so it doesn't crack.

PES: As you integrate these new products into your existing lineup, what steps are you taking to ensure they meet industry standards and customer expectations?

JLK: TCT CAD engineers have a deep knowledge of the properties of recycled rubber and work closely with all our customers to better understand their requirements and match this to the material. As we are doing with the friction tests, TCT supports a lot of customer testing that is always linked to industry standards.

For example, one of our customers has required our products to be UL listed to their requirements and we have successfully maintained them as UL for several years. How do you plan to market and distribute these new products to maximize their impact?

Jillian Laurenzo Ketcham

PES: TCT currently sells both directly and through a network of distributors but is increasingly looking at working with partners to co-develop and co-market products. You have been conducting military customer work too. Tell us about this and how it's progressing.

JLK: Yes, we have approached this sector with partners, who have a footprint in both the US and the UK/Europe and deep knowledge of how to operate in this sector. Once again, we have worked with these partners to conduct testing, in this case by adding materials to our rubber that increase elasticity and density, so our products can be used in temporary structures and urban training facilities.

PES: In what ways can the technologies and innovations developed through your work with military customers benefit your clients in the solar industry?

JLK: One key area of overlap is our work with different densities of products for the military. We are currently using this in a rubber roof tile insert, used under solar roof hooks for installations on pitched roofs.

PES: Finally, can you update us on your current capabilities to service US and European customers? What improvements or expansions are you undertaking to better meet the needs of these markets?

JLK: As far as I know there are very few recycled rubber products companies that manufacture in both the US and Europe so that already puts us at a strong advantage in terms of servicing global customers.

The second is that we have a single development and prototyping team that shares innovations and ideas developed in both markets. We are looking to expand the teams and partnerships in both areas and, as mentioned earlier, are working towards achieving global standards for sustainability in RCS and repeatability in ISO9001.

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