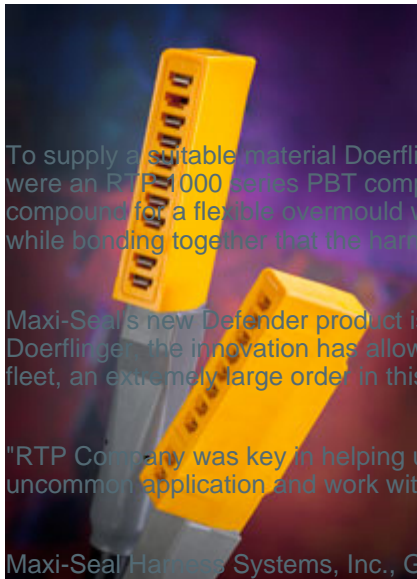


Warrantable seal for wiring harness

The undersides of long-haul semi-trailer trucks have to resist harsh conditions: the parts are exposed to grimy exhaust and road particulate combined with spraying water, caustic de-icing solutions, and other chemical agents. This can cause the failure of the wiring harnesses, the connection point for the cabling that delivers power from the truck cab back to the trailer.

Maxi-Seal Harness Systems, a supplier of custom engineered wiring harness systems has been approached by a customer to design a new modular wiring harness that could be disseminated fleet-wide.

"We wanted to create a new product that would enable us to offer an unprecedented warranty period against leakage and corrosion," explained Maxi-Seal's Manufacturing Engineer Eric Doerflinger. Doerflinger and his team designed a new wiring harness, but their first prototypes, using existing materials, were disappointing due to unacceptable moisture penetration.



According to Doerflinger, two materials at the heart of their device were the issue — at the connection point a rigid housing needed to bond with a flexible thermoplastic elastomer TPE overmould and create a watertight seal.

To supply a suitable material Doerflinger contacted RTP. The custom engineered materials the compounding specialist supplied, were an RTP 1000 Series PBT compound reinforced with glass fibre for the rigid housing, and an RTP 1500 series polyester TEEE compound for a flexible overmould which forms a watertight seal. Both compounds provided chemical and corrosion resistance while bonding together that the harness has successfully endured field tests on a fleet of 20 trucks driven 1.6 million miles.

Maxi-Seal's new Defender product is the result, a commercial wiring harness system offering a 10-year warranty. In fact, noted Doerflinger, the innovation has allowed Maxi-Seal to beat out competitors to win all the wire harness business for the national truck fleet, an extremely large order in this industry.

"RTP Company was key in helping us win this very important business," said Doerflinger. "Their willingness to look at this uncommon application and work with us to find a solution makes them a very valuable partner."

Maxi-Seal Harness Systems, Inc., Grandview, MO, USA, is a subsidiary of Peterson Manufacturing Company, a manufacturer of vehicle lighting products.

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