

**March 2012**

## **Alufoil Trophy 2012: Putting the damper on auto heat shield protector**

A novel solution to reduce vibration on powertrain mounted heat shields used on a German luxury vehicle has earned Novelis Lüdenscheid, Packaging & Converting and its development partner Lydall Gerhardi an Alufoil Trophy 2012 for Technical Innovation.

“The judges liked the simple, but effective use of alufoil to solve both a hot spot and noise pollution problem. The designer had to ‘think outside the box’ to come up with a solution and used aluminium foil to great effect, showing a great technical understanding of the material and its capabilities,” commented Antoinette Devine head judge for this year’s Alufoil Trophy and global packaging consultant for SABMiller.



Aluminium has long been the material of choice for heat shields in automobiles due to its low radiation emissivity (<0.1) and high thermal conductivity (240 W/m K) which prevents hot spots. This allows sensitive components to be protected from heat generated by the exhaust system. Conventional blank aluminium heat shields can be ‘excited’ near or at their resonance frequency which can lead to highly amplified vibration resulting in parasitic noise and the risk of high cycle fatigue failure.

The new ‘sandwich’ foil material, an in-house development in conjunction with converter Lydall Automotive, comprises 0.2mm alufoil/0.08mm polymer/0.3mm aluminium strip effectively damps the vibration and reduces the risk of fatigue cracks. Noise emission is completely eliminated so the overall environment in the vehicle is greatly improved.

“Receiving this award is a great honour and a reward for the hard work from the Novelis Innovation Team and further demonstrates the potential applications for aluminium,” said Michael Knechtel, innovation manager of Novelis. “Aluminium itself is a fantastic material, but by converting it with other components you can create exceptional properties in the final product. The vibration damped heat shield completes the Novelis range of heat shield applications,” added Knechtel.

The Lydall team is equally proud of this success for the new product. “With the potential reduction of the material thickness for heat shields, which leads to weight reduction of vehicles, this development supports the sustainability trend of the automotive industry,” stated Thilo Kuhl, applications engineer at Lydall. Martin Klautke, senior vice president, global metals of Lydall added, “ After years of trials we are pleased to have found the right partner in Novelis to develop a material with such exceptional performance characteristics.”

**The Alufoil Trophy is organised by the European Aluminium Foil Association. There are five categories – Consumer Convenience, Marketing + Design, Product Preservation, Resource Efficiency and Technical Innovation. Judges also award Overall Excellence. For 2012 there were 13 winners from 52 entries.**

**High resolution pictures can be downloaded and all winning entries can be viewed at [www.alufoil.org](http://www.alufoil.org)**

### **Further information:**

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*The European Aluminium Foil Association is the international body representing companies engaged in the rolling and rewinding of alufoil and in the manufacture of alufoil containers and of all kind of flexible packaging. Its more than 100 members include companies in Western, Central and Eastern Europe.*