



Winner and finalists of the category Interior

40th Automotive Innovation Awards

An overview of all winners and finalists has been published in polymotive 11+12/2010. More details relating to winners and finalists of other categories can be found in previous or in subsequent issues of polymotive.

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Interior trim with 3-D appearance

- OEM: Ford Motor Co.
- Vehicle/year: Ford Explorer SUV/2011
- System supplier: Johnson Controls Inc.
- Material supplier/processor: Dow Automotive/Johnson Controls Inc.
- Resin: Magnum MT3325 ABS
- Tooling supplier: ToolPlas Systems Inc.



Interior trim with 3-D appearance

A decorative option and an industry first allowed a technical pattern to be injection moulded into an interior trim component, preventing distortion in the pattern in deep-draw areas via graining of the substrate rather than incorporating patterned paint film. This provides greater decorative flexibility for the substrate to be moulded-in-colour, painted, or filmed – all from the same tool. This led to a 10-20% variable cost savings due to use of non-patterned films, and 100% avoidance of multiple substrate tools for different decorative finishes, allowing easy and cost-effective model differentiation.

Self-reinforced airbag-door system

- OEM: PSA Citroën
- Vehicle/year: Citroën C5 Sedan/2007
- System supplier: Visteon Corp.
- Material supplier/processor: LyondellBassell & Propex Fabrics/Visteon Corp.
- Resin: PP/PP
- Tooling supplier: N/A

This is the auto industry's first airbag door system that integrates an all-PP construction (PP-fibre-reinforced PP). As such, it is fully recyclable and does not require typical post-mould scoring/weakening of the door flap. The injection-moulded door system is a light, less-expensive system solution, since additional components and post-mould operations (to enable the door flap to open/hinge) are eliminated. Multi-zone temperature control of the mould was required, as was use of a vacuum-holding system for the fabric insert.



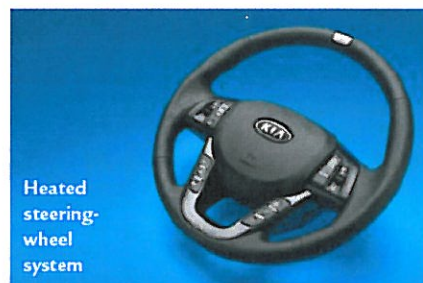
Self-reinforced airbag-door system (photos: SPE)

The programme also required development of a specialised fibre-reinforced material to facilitate overmoulding and subsequent adhesion. The resulting system reduced weight 30% and 300% versus competitive systems and saved approximately US\$ 5/part versus welded systems. Additional indirect savings of approximately 5% were also accrued, and production scrap is 100% recyclable.

Heated steering-wheel system

- OEM: Hyundai-Kia Motor Co.
- Vehicle/year: Kia Optima Sedan/2010
- System supplier: LG Hausys
- Material supplier/processor: LG Hausys
- Resin: PU RNF9008 polyurethane
- Tooling supplier: LG Hausys

This heated steering-wheel system makes use of reaction-injection moulded PU and a unique sprayed-on, silver-impregnated coating-based heating element, which was developed especially for this application. Heating is achieved by the silver-based speciality coating rather than traditionally wrapped/sewn-in heating wire. Not only does the new system reduce weight by 50% (100g) and reduce tooling and assembly steps, but



Heated steering-wheel system

it also leads to a 5% direct cost savings. In addition, it reduces risks of fire (since the unit operates below 80°C), produces more soothing, deep-penetrating far-infrared heat, and also provides antibacterial properties.