

MARKET for composite solutions VISION

APPLIANCES

Performax[®] glass fiber puts new spin on washing machine tub design

Amidst several material solutions alternatives, a leading white goods OEMs enhanced the functionality and value of its new washing machine tub for Russian domestic appliances market.

To remain competitive, the OEM sought to design a washing machine tub that delivered greater capacity, faster spin speeds and improved durability. But the materials used for this component were typically polypropylene (PP) homopolymers filled either with 40 percent calcium carbonate/talcum, or 30 percent glass fiber. All materials, however, posed design limitations that required the manufacturer to seek an innovative new composite material to achieve its goals.

Improved performance thanks to a new grade of reinforced PP material

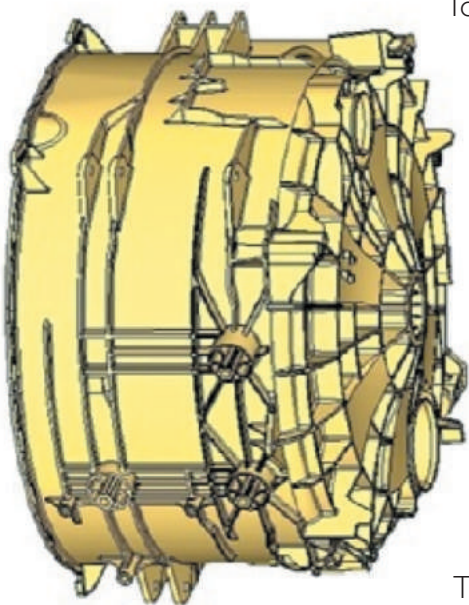
The OEM turned to Polyplastic Group, Russia's leading developer and producer of thermoplastic composites, who together with Owens Corning developed a new PP composite reinforced with 30 percent loading of Performax[®] 249 chopped glass strands. Compatible with conventional compounding and injection molding processes, the new composite material delivers excellent flowability

and polymer-glass-fiber adhesion, which translates into improved stiffness and strength of up to 15 percent. The new material from Polyplastic also delivers superior hydrolysis resistance to detergents in aqueous solutions up to 95°C which helps extend tub life, and it is recyclable.

Conventional composites, at best, enabled washing machines to achieve spin cycles slightly higher than 1,000 RPM. Mikhail Katsevman, Director of Product and Market Development, Polyplastic Group said: "The advanced thermoplastic composite we developed enabled the design of a new washing machine tub with thinner walls while maintaining essential mechanical properties."

“ This in turn allowed 30 percent more capacity from a comparable tub size and supported substantially faster spin cycles of up to 1,500 RPM ” Katsevman added.

The advanced innovative thermoplastic PP composite material will serve new tub designs for washing machines in Russia where demand for higher value white goods is rapidly growing. However, the material also provides huge potential not only in Russia but in Europe with volume growth around 15% per year.



Polyplastic Group, Russia

www.polyplastic.ru Contact: LFTP@owenscorning.com



OWENS CORNING COMPOSITE MATERIALS, LLC
ONE OWENS CORNING PARKWAY
TOLEDO, OHIO, USA 43659

1-800-GET-PINK™
w.owenscorning.com/composites

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