

## Neopolen® P: EPP foam for heating technology

### Case Study

#### Designer outfit for thermal protection

BASF now offers a new and patented version of the foam Neopolen® P (EPP: expanded polypropylene) for devices used in heating, ventilation and sanitary systems. The metallic-gray Neopolen® P 9335 mg is noted for its thermal insulation which is 10 percent better than standard EPP. Thanks to the versatile properties of the new product, foamed Neopolen® P molded parts are able to perform several functions at the same time: The foam serves as efficient shock-absorbing packaging for transportation, supports the device as constructive carrier and replaces the metal housing because it can be processed into thermally insulating housings with an aesthetic surface. Neopolen® P 9335 mg thus helps to meet the energy standards of low-energy houses and for the renovation of older buildings.

#### Several functions in one

This presents new design options for devices such as heat exchangers and solar storing units. Neopolen® P 9335 mg can be used to foam highly resilient, elastic molded parts which replace conventional metal or injection-molded housings. Without any elaborate mold design, undercuts can be produced in the foam component easily and cost-effectively. This provides new options for integrating additional functions into the housing such as airflow channels or assembly fixings. As a result, the required number of components can be reduced to a minimum. The thermal and electronic units are fastened directly into the viscoplastic Neopolen® P housing. Thus, they cannot be damaged during transportation.

When in use, the device is also thermally insulated in an efficient way. The polymer matrix of Neopolen® P 9335 mg contains infrared absorbers which reflect thermal radiation like a mirror and thus considerably reduce the heat transfer compared to conventional EPP. Neopolen® P is temperature-resistant from -40°C to +100°C.



#### Designed surfaces

Thanks to new tooling technologies, the foam can be processed in such a way that high-quality surfaces are produced without the typical particle foam look and without nozzle imprints. The foam beads which expand uniformly adapt to the modified mold surface and as a result generate a homogeneous, aesthetic designed surface, for example with a leather look.

#### Neopolen® P – versatile and environmentally friendly

Neopolen® P 9335 mg is a specialty foam from the tried-and-tested Neopolen® P product range. The expanded polypropylene (EPP) is noted for its very good shock absorption characteristics, low weight and high temperature resistance. The particle foam combines high energy absorption – even after several impacts – with excellent resilience and isotropic deformation performance. This interesting combination of properties, which also includes low water absorption and good resistance to chemicals, opens up a broad range of applications: from vehicle construction, packaging and transport containers to sports and leisure applications. Neopolen® P is 100 percent recyclable. It is manufactured and processed without any CFCs (chlorofluorocarbons).