Case study

Durethan® DP 2802/30 for washing machines

PA 66, injection molding grade, 30 % glass fibers, halogen-free, GWIT 775 °C

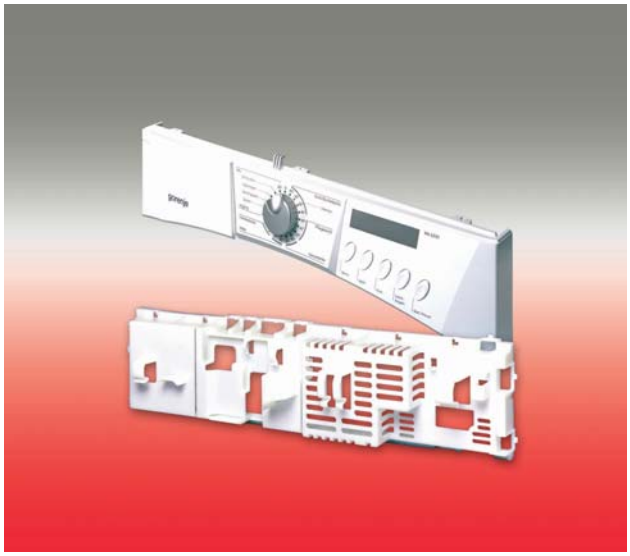

Figure 1 Electronic housings for washing machine front panels made from Durethan DP 2802/30

Plastics used for live components in domestic appliances that are left unattended, such as refrigerators, washing machines and dishwashers, must satisfy the IEC 60335-1 standard for domestic appliances, which has recently been made more stringent. As soon as the current exceeds 0.2 amps, the glow wire test requirements specify a GWFI (glow wire flammability index) value of 850 °C and a GWIT (glow wire ignition temperature) value of 775 °C for all insulating materials. This is a huge obstacle for most polyamide grades. LANXESS has now developed a range of Durethan grades that meet the domestic appliance standard. Durethan DP 2802/30 and Durethan DP 2801 have been used to develop two PA 66 grades that not only meet the standard but are also halogen-free in line with the present trend for using halogen-free plastics in electrical and electronic equipment.

The two materials are already used in various electronic housings for washing machine panels produced by Gorenje d.d., a leading European manufacturer of domestic appliances headquartered in Velenje, Slovenia. These applications meet the aforementioned IEC 60335-1 standard for domestic appliances.

Durethan DP 2802/30 contains 30 % glass fibers, while Durethan DP 2801 is not reinforced. Both materials reach a GWIT of 775 °C for a specimen thickness of just 0.75 millimeters. The glow wire test to ascertain the GWFI (glow wire flammability index) is passed at the maximum temperature of 960 °C. The flame-retardant package of both materials is halogen- and phosphorus-free. Both materials have an excellent tracking resistance of 600 Volts (CTI A). The risk of equipment faults and short-circuiting caused by leakage currents is consequently extremely small.

LANXESS also supplies corresponding PA 6 grades. DP 1852/30 contains 30 % glass fibers and has achieved V-0 classification. The GWIT value of 775 °C is reached at 0.75 millimeters, and a GWIT value of 800 °C is attained with thicker walls. The flame retardant package of DP 1852/30 contains halogen. Durethan DP 1803/10 is a halogen-free V-2 grade with a mineral-based flame retardant which achieves a GWIT of 775 °C in all typical wall thicknesses. This product also has a tracking resistance of 600 Volts, an HWI of 2 and an HAI of 0. Durethan DP 1803/10 can therefore be used in insulating materials in accordance with the UL 508.

Durethan® is a registered trade name of Lanxess Deutschland GmbH

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Unless specified to the contrary, the values given have been established on standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mould/die, the processing conditions and the coloring.

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