

Case Study

Durethan® DP BKV 30 XF for Vorwerk vacuum cleaner



Figure 1 Chassis made of DP BKV 30 XF 011197

The light-colored component illustrated is the chassis of the Kobold VK 135 vacuum cleaner by [Vorwerk & Co. KG](http://www.vorwerk.com), Germany.

For several years the part was manufactured from Durethan BKV 30 (PA 6 GF 30). Following optimization this has now been changed to the easier flowing Durethan DP BKV 30 XF (PA 6 GF 30 Extreme Flow).

This chassis combines the motor, vacuum bag cavity, and guide rod. Vorwerk set out detailed specifications for developing a specially adapted material with better flowability for this component, which is subject to high mechanical stresses.

As a result, Durethan DP BKV 30 XF was developed whose flowability is over 60 % greater than standard PA 6 GF 30. This material fulfills the specifications

Material: Durethan DP BKV 30 XF

Molder: Vorwerk & Co. KG, Germany

Industry: Appliance

without compromising the familiar high-quality properties of glass-fiber-reinforced polyamide.

The optimum performance of this innovative material is demonstrated by the specified mechanical properties, the filling behavior of the complex component, and the considerably lower stress on the mold.

The following material benefits were decisive in securing the switch to Durethan DP BKV 30 XF for this purpose:

- Considerable reduction of injection pressure
- Low distortion
- Reduced stress on the mold
- Reliable high-level mechanical properties
- Possible reduction in cycle time



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Where end-use requirements permit, regrind may be used with virgin material in quantities specified in individual product information bulletins, provided that the material is kept free of contamination and is properly dried (see maximum permissible quantities and drying conditions in product information bulletins). Any regrind used must be generated from properly molded/extruded parts, sprues, runners, trimmings and/or film. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Materials of this type should be discarded. Improperly mixed and/or dried regrind may diminish the desired properties of a particular LANXESS product. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history or offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties. The use of regrind material should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.

Color and visual effects

Type and quantity of pigments or additives used to obtain certain colors and special visual effects can affect mechanical properties.

Note:

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