

Case Study

Durethan® DP BKV 60 H2.0 EF for gearbox housing



Figure 1 Gearbox housing for a Vorwerk electric brush

The [Vorwerk Elektrowerke GmbH & Co. KG](http://www.vorwerk.com) company is proud of its reputation for quality and innovation. This certainly applies to the EB 360 electric brush, a powerful accessory to the company's range of vacuum cleaners. At a speed of up to 6200 rev/min, the rotating brushes remove dirt from both carpets and hard floors.

The motor is connected to the brush shaft via a toothed belt drive which is enclosed by the gearbox housing shown in Figure 1. This housing not only protects the toothed belt, but also serves to maintain the belt's tension and provides a bearing seat for the shaft.

The two-part gearbox housing is made from Durethan® DP BKV 60 H2.0 EF – a highly reinforced, easy-flow PA 6 grade with 60 % glass fiber.

Material: Durethan® DP BKV 60 H2.0 EF

Manufacturer: Vorwerk Elektrowerke GmbH & Co. KG

Durethan® DP BKV 60 H2.0 EF has a number of advantages over 30 % glass fiber reinforced general-purpose grades:

- accurate fit thanks to low shrinkage and a minimal tendency to warp
- high dimensional stability due to reduced moisture absorption
- little tendency to creep
- high mechanical load-bearing capacity
- high heat resistance
- fast cycles
- easy processing thanks to good flowability
- good surface quality



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Typical Properties

Property data is provided as general information only. Property values are approximate and are not part of the product specifications.

Health and Safety

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling LANXESS products mentioned in this publication. Before working with these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets (MSDS) and product labels. Consult your LANXESS Corporation representative or contact the Product Safety and Regulatory Affairs Department at LANXESS. For materials that are not LANXESS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturer(s) must be followed.

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Some of the end uses of the products described in this brochure must comply with applicable regulations, such as the FDA, NSF, USDA and CPSC. If you have any questions on the regulatory status of any LANXESS engineering thermoplastic, consult your LANXESS Corporation representative or contact the LANXESS Regulatory Affairs Manager.

Regrind

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.

Note:

The information contained in this publication is current as of August, 2009. Please contact LANXESS Corporation to determine if this publication has been revised.

