

## Case Study

### Air intake manifold made from Durethan® BKV 30 HTS



Figure 1 Air intake manifold

Durethan® BKV 30 HTS from LANXESS is a highly stabilized resin for use in components subjected to high temperatures, such as the air intake manifold from [Poschmann Union](#) shown in Fig. 1.

A characteristic of this resin is its increased resistance to thermal oxidation, which reduces the formation of microcracks on the surface. It also has long-term resistance to aggressive gases and media such as fuels, lubricants and combustion products.

The impact-resistant, **High-Temperature-Stabilized** (HTS) polyamide also exhibits very good mechanical properties even when used at constant service temperatures of 150 °C (with peaks up to 190 °C) and subjected to fluctuating compressive stresses.

**Material:** Durethan® BKV 30 HTS

**Molder:** Poschmann Union, Germany

**Industry:** Automotive

The air intake manifold shown here has a bursting pressure resistance of over 6 bar. It is produced by assembly injection molding. This is an injection molding process in which the individual components are positively and inseparably interlocked with the basic resin.

Durethan® BKV 30 HTS boasts not only exceptional resistance to heat and chemicals, but also an excellent surface quality. Thanks to the good coatability of this material, individual components in the engine compartment can be made to stand out.



---

Durethan® and Pocan® are registered trademarks of LANXESS Deutschland GmbH

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee, and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

#### 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.

#### Regulatory Compliance

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.

#### 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:

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

© = LANXESS Corporation 2009 | Pittsburgh, PA 15275 | SCP Business Unit | all rights reserved

<http://us.durethan.com>

Page 2 of 2 - this document contains important information and must be read in its entirety | Edition 05.06.2009 | CS TI 2009-002 US

