

Case Study

Durethan® BKV 130 GIT for an office chair back rest



Figure 1 Back rest for the JET-N office chair

[Coko-Werk GmbH & Co. KG](http://www.coko-werk.com) is a system supplier of articles made of engineering plastics. The company offers development and design services, has an in-house mold building facility, and conducts plastics processing right through to the assembly stage.

A swivel chair with an innovative back rest was developed for office furniture manufacturers [König und Neurath AG](http://www.koenigundneurath.com). The special feature of this back rest is the frame that is covered with a mesh fabric. The frame has to be capable of withstanding considerable mechanical loads while being lightweight at the same time. And, since it is a visible element of detail, it must also offer an outstanding surface finish.

The search for an appropriate product rapidly led to Durethan® BKV 130, a material that has proven successful in office chairs for many years. Durethan® BKV 130 is a high-impact polyamide with glass fiber reinforcement. A variant of this product, Durethan® BKV 130 GIT, was selected for the new swivel chair.

Material: Durethan® BKV 130 GIT
Manufacturer: Coko-Werk GmbH & Co. KG
OEM: König und Neurath AG

This specialty, which was originally developed for gas-assisted injection molding (which is not used here), provides the excellent surface finish that is required.



Fig. 2 Simulation of the deformation under static loading



The back rest is required to pass a static test to ANSI/BIFMA X5.1. The engineering teams at the companies involved accordingly carried out calculations to establish the mechanical layout, and per-

formed the necessary optimizations. Practical tests have since shown that the back rests satisfy all the requirements.

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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.

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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:

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