

Case study

Sports bow made from stress-resistant Pocan® T 7331



Figure 1 “Black Initech” sports bow

- Material:** Pocan® T 7331 (Center section)
- Molder:** Ere Plastique, France
- OEM:** GEOLOGIC – Decathlon, France
- Industry:** Sports/Leisure

The sports equipment company **Decathlon®** was founded in 1976 with the aim of making outdoor sports more enjoyable for everyday people. One of the brands that Decathlon® markets is GEOLOGIC, which comprises products for anglers, hunters and

serious archers. For the past 10 years 60 enthusiasts from these disciplines have been striving to ensure that GEOLOGIC’s products meet the demands of their users – under all possible conditions.



One such product is the “Black Initech” sports bow shown in figure 1.

The center section of this bow, in particular the handle, must not distort under changes of load as this will result in the arrow not traveling straight. Previously Decathlon had made use of glass fiber reinforced polyamide 66 for this component, however in order to further improve the shooting accuracy of their bows, they searched for a material that displayed even higher stiffness and load-bearing capacity under all possible climatic conditions.

Pocan[®] T 7331 proved to be such a material. At 10,500 MPa, the modulus of elasticity – a measure of stiffness – of this high-tech plastic is around 75 % higher than that of a comparable PA 66. The material has good dynamic properties and a low tendency to warp. An additional benefit of Pocan[®] T 7331 is its good surface quality, which enhances not only the functionality of the ergonomically designed center section of the bow, but also makes it attractive to look at.

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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.

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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