Case Study

Durethan® DP 1801/30 for massagers

Figure 1 Wellbox® Body Optimizer

Material: Chassis: Durethan® DP 1801/30

OEM: Guitay, France

Molder: Mecaplast, France

Industry: Electrical/Electronics

Guitay is a leading player in the field of tissue therapy and aims to provide access to the Louis-Paul Guitay method of tissue therapy to a wider public. Wellbox Tissular Therapy combines two new processes that have proven their worth throughout the world:

- The “Tissular Rolling”, with motorized rollers for in-depth tissue actions.
- The “Tissular Lifting”, with gentle pulsation for surface tissue.

This commitment led to development of the Wellbox, a special massager for tissue therapy. For the technical implementation of the Wellbox, the entire process chain (e.g. research, design, construction, manufacture) and the mechanical and electrical requirements of the materials used had to satisfy very strict standards. The hardware for the Wellbox was developed in close collaboration with Guitay, Mecaplast and LANXESS.

Durethan® DP 1801/30 was ideal for the Wellbox chassis. The key prerequisite for using this polyamide was the deployment of halogen-free fire retardants. Durethan® DP 1801/30 is a 30 % glass-fiber-reinforced PA 6 that contains a nitro-organic fire retardant and has gained an UL94V-2 classification in all typical wall thicknesses and colors. The GWFI (glow wire flammability index) is at the maximum value of 960 °C. The material’s outstanding electrical properties are particularly important when using Durethan® DP 1801/30 in E/E applications. The tracking resistance (CTI) is 550 V. The tracking rate (HVTR) has the highest possible PLC classification, 0, i.e. the tracking rate is between 0 and 10 mm/min. The same also applies to arc flammability (HAI), where the maximum classification is also achieved.

The mechanical properties of Durethan® DP 1801/30 are another beneficial feature. The material’s stiffness and toughness make it ideal for use as a chassis. In addition, the product exhibits high heat resistance.

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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.

Flammability
Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

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 October, 2008. Please contact LANXESS Corporation to determine if this publication has been revised.