Technology FAQs

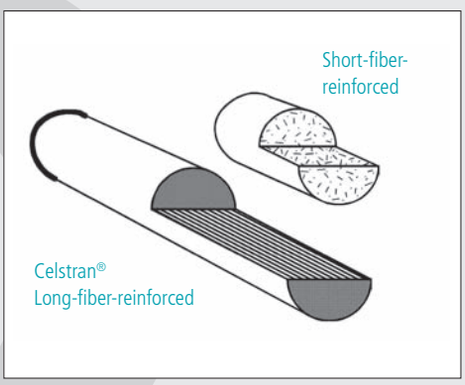
Interest frequently focuses on long-fiber-reinforced thermoplastics. "inform" asked Ticona's Technology and Service Department which questions are posed most often.

What is the minimum required length of the fibers in the finished part?

In order to ensure superior properties versus short fiber products, the mean fiber length in the component must exceed a critical length. With Celstran® LFRT PP, for example, the mean fiber length in the component after the injection molding process must be at least two millimeters. At the same time, full impregnation of the long fibers (pultrusion process) during Celstran® LFRT production ensures optimal fiber/matrix bonding.

How can the customer determine the fiber length in the component?

There are several possibilities. With Celstran® LFRT PA and PP, the easiest method by far is to analyze the fiber structure after ashing the component. In this case we recommend the following temperatures: heating for one hour at 400 °C and then one more hour at 600 °C.



Is mold wear generally higher with LFRT?

Mold wear is lower with long-fiber-reinforced products than with comparable short-fiber-reinforced grades. At equal filling ratios, long-fiber-reinforcement leaves fewer free fiber ends, thereby reducing the abrasive effect.

Don't long fibers cause higher warpage and greater shrinkage than short fiber products?

Long fibers tend to align themselves less in the direction of flow than comparable short fiber products. So proper processing techniques form a fiber structure without a prevalent fiber orientation. This results in a reduced tendency to warp. The fiber structure also impedes shrinkage at the same time, so shrinkage behavior is also better than that of short-fiber-reinforced thermoplastics.

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