Increased Coverage Through Microcellular Foamed Fibres

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Abstract

Cutting costs and reducing the CO2 footprint at the same time are two key drivers for applying foam extrusion in various industries. Microcellular foams play an increasingly important role in polymer extrusion enabling material savings while maintaining the same product properties.
Achieving the highest foam quality requires precise process control, which can be based entirely or partially on recycled materials. Extruded foam products require maximum homogenization of the melt, stable temperature conditions in the process, and above all, at the die outlet.

The presentation introduces the unique foaming technology developed by Promix Solutions in Winterthur, Switzerland. It features innovative components such as a precise gas dosing station combined with a cooling mixer, enabling superior foam quality. In addition, inline viscosity measurement helps evaluate process, raw material, and product quality, thus preventing unnecessary scrap. Changes in process conditions are immediately indicated, for example by monitoring moisture content, temperature changes, filler dosing and the efficiency of reactive compounding. The solution allows evaluation of all melt-based materials and ensures seamless monitoring and control of the extruded product.
Along with the foaming technology itself, examples of foamed products will be presented, highlighting its application in fiber production and the benefits of foaming in terms of product properties and manufacturing costs.

Keywords: Foaming, Fibers, Extrusion, Process Control

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