NewsFlash

Celanese
The chemistry inside innovation™

Celstran® LFT structural components

Technological leap in Celstran® LFT and MuCell® technology

Celstran® LFT in the MuCell® process:

- Weight reduction
- Lower warpage, even of large structural components
- Material saving

Now new:

Further warpage optimization coupled with higher impact strength through

- New screw design and
- Optimized process parameters

The very good material properties of Celstran® LFT can now be exploited even more successfully in components produced by the MuCell® process. This is ensured through a new screw design developed in partnership with Trexel, Inc. and processing parameters specially optimized to the MuCell® process.

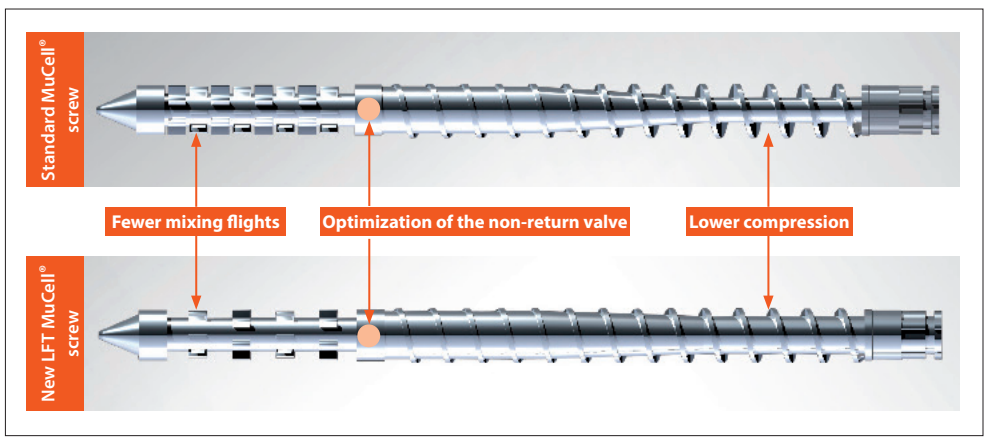
Large lightweight moldings and structural profiles can now be produced from Celstran® LFT with virtually no warpage.

Celanese
The chemistry inside innovation™

MuCell® technology with Celstran® LFT

Microcellular foam plastics can be produced by mechanical or chemical dispersion of a gas, normally carbon dioxide or nitrogen, in the polymer melt. Nucleation and expansion of the gas bubbles as the mold cavity is filled create a closed-cell microfoam, so enabling lightweight components.
Unlike with conventional short-fiber-reinforced materials, in Celstran® LFT, the long fibers mechanically interact with each other in the molded component. They form a glass fiber framework that restricts anisotropic shrinkage and significantly reduces warpage. This property profile makes Celstran® ideally suitable for use in structural components with high mechanical property requirements.
As a result of the newly developed screw design and optimized processing parameters, the long fibers in Celstran® LFT can now be processed much more gently in the MuCell® process. The result is a significant improvement in component properties and new opportunities for designers and injection molders to create large structural components virtually warpage-free, while saving weight at the same time.

Comparison between the standard and new screw



Comparison of properties obtained in the MuCell® process with conventional and optimized parameters

		MuCell® traditional parameters		MuCell® optimized parameters		improvement	
	unit	standard screw		LGF screw			
		Celstran® PP GF40 - 04	Celstran® PP GF50 - 04	Celstran® PP GF40 - 04	Celstran® PP GF50 - 04	Celstran® PP GF40 - 04	Celstran® PP GF50 - 04
Drop impact ASTM 3763	[J]	8.91	9.69	11.02	13.86	24%	43%
Notched impact ASTM D256	[J/m]	125	3.52	136	3.97	9%	13%
Tensile strength ASTM D638	[MPa]	79.5	179.6	87.4	195.4	10%	9%

Celanese and MuCell® technology:

As a Trexel licensee, Celanese has been investing considerable effort in the physical microfoam injection molding process (MuCell®) for some years now and was one of the first polymer producers to do so. Now, Celanese operates its own MuCell® plant in its Plastics Technical Center and has acquired a wealth of experience in this technology.

Suitable Celanese plastics for the MuCell® process:

- Celanex® PBT
- Hostaform® POM
- Fortron® PPS
- Celstran® LFT

www.celanese.com · info-engineeredmaterials-eu@celanese.com · Phone +(00)-800-86427-531 · Phone +49-(0)-69-45009-1011

TI-NF1049E06.2008