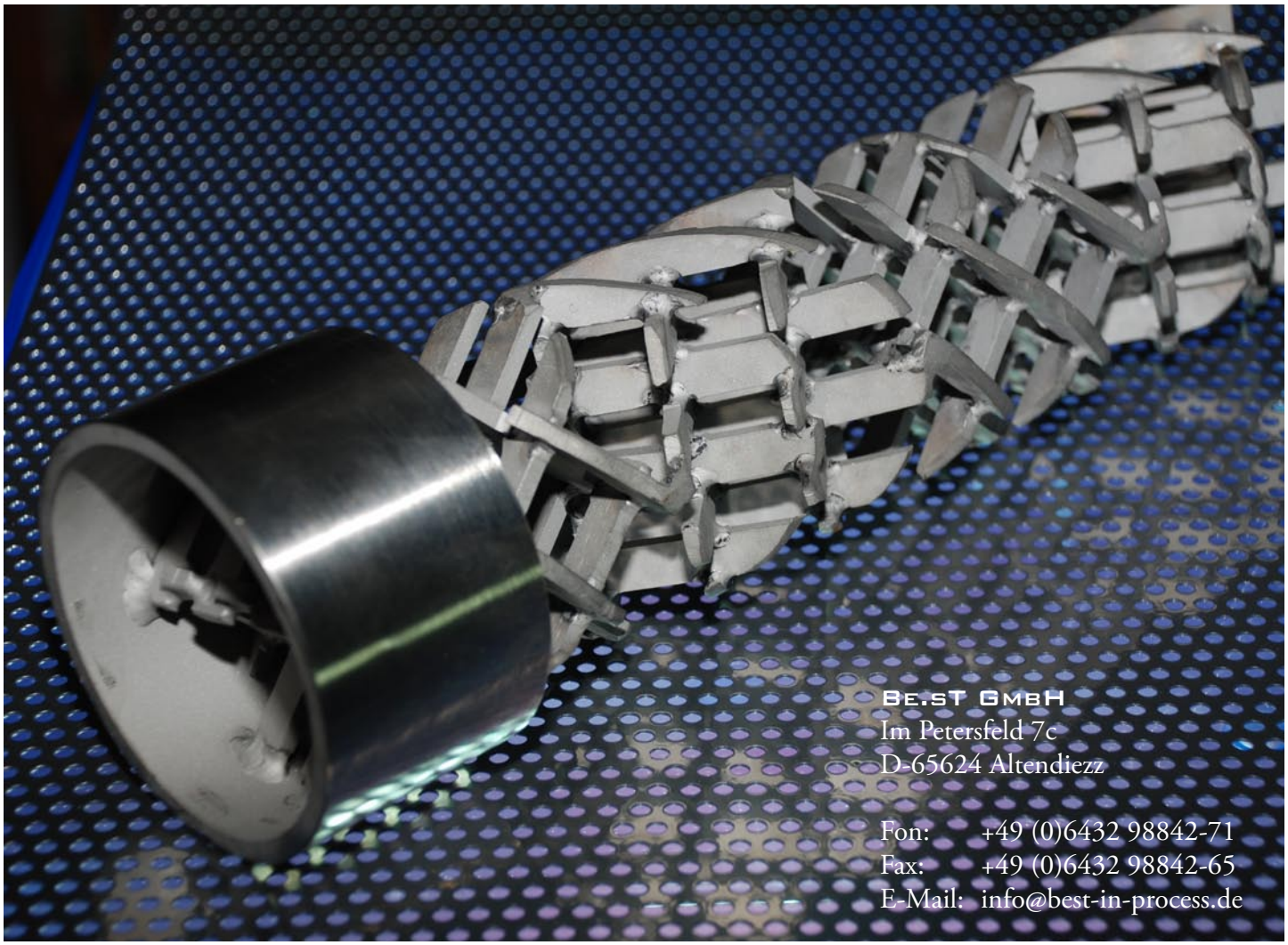
Melt Blender For Extrusion



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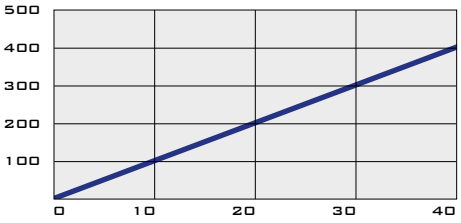
Problem of Extrusion & Laminar Flow Pattern

Based on high friction forces between the pipe inside surface and the first product layers the velocity tend to zero. In the middle of the pipe the velocity increase due an constant throughput capacity. For each mixing process this behaviour means problems with the exchange of the corresponding mixables components inside the pipe.

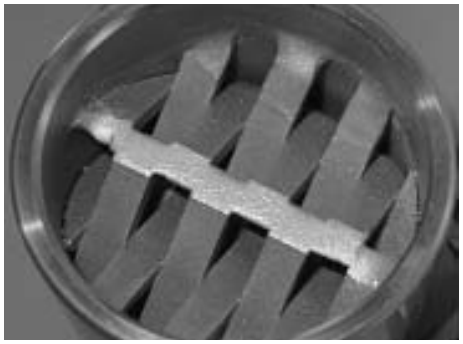


Horizontal: Delta in C°

vertically: Troughput in kg/h

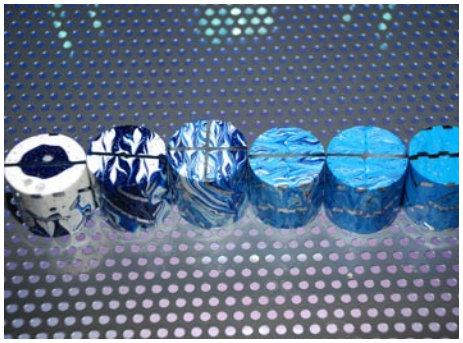
Consequences on the Polymer

The right table shows the temperature difference from an extrusion line with various throughput by using a standard LDPE over the pipe cross section. With these temperature differences and the corresponding difference in viscosity it is more or less impossible to realize products with exact measurement or to repeat the working results. Additionally more master batches as needed must be used to achieve a stable dye penetration of the extrusion products.



Technical solution

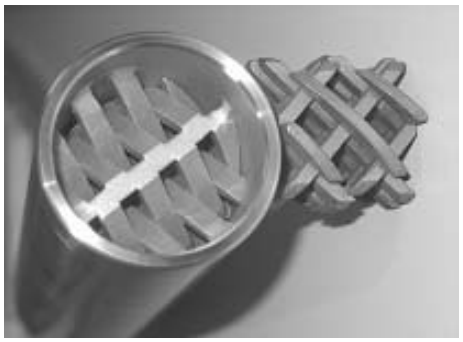
The MXB mixing elements consist of a structure of crossing inter-meshing bars which are installed into the flow channel and do mix the high viscous product: The flow is continuously split, stretched, recombined and conveyed, thus, according to a geometric principle, continuous mixing with ideal plug-flow behavior and minimum residence time are achieved.
Each MXB is rotated 90° from the adjacent element; inhomogeneity is resolved two-dimensionally in each subsequent element.



Benefits

The picture demonstrate the progressive increase of the degree of homogeneity along the mixer with laminar flow under using of MXB - elements. The advantages for the extrusion are:

- Thermal and composition gradients are virtuallly eleminated even processing high percentage of additives
- More narrow tolerances of the extrudates due to uniform flow of melt inside dies and/ or heads
- Uniform colour distribution (Reduction of master batch costs)
- Improvement of mechanical and surface quality of the final products



Applications

With the BE.ST Melt Blender nearby all thermoplastics, with the exception of PVC, can be processed without any problems for:

- Sheet, Foils and profile extrusion
- Pipe extrusion
- Foam extrusion
- Blown films
- Fiber and monofilament extrusion
- Compounding
- Coating

Our capability includes the delivery of the mixer inlet as good as the delivery of the complete mixer with housing and heat jacket.

Modell	Material dimensions and element type						
	Housing				Element		
	Material	Mixer Dia. (mm)	Out. Dia. (mm)	Length (mm)	Material	n°	Type
MXB-S 48	Aisi 304	40,6	48	192	Aisi 304/PH 17.4	4	MX
MXB-S 60	Aisi 304	51,8	60	240	Aisi 304/PH 17.4	4	MX
MXB-S 75	Aisi 304	66,5	75	300	Aisi 304/PH 17.4	4	MX
MXB-S 90	Aisi 304	80,2	90	360	Aisi 304/PH 17.4	4	MX
MXB-S 115	Aisi 304	101,5	115	460	Aisi 304/PH 17.4	4	MX
MXB-S 140	Aisi 304	126,2	140	560	Aisi 304/PH 17.4	4	MX
MXB-S 175	Aisi 304	153,5	175	700	Aisi 304/PH 17.4	4	MX

Modell	Material dimensions and element type						
	Ring				Element		
	Material	Mixer Dia. (mm)	Out. Dia. (mm)	Length Total (mm)	Material	n°	Type
MXB-R 48	Aisi 304	40,6	48	167	PH 17.4	4	MX
MXB-R 60	Aisi 304	51,8	60	210	PH 17.4	4	MX
MXB-R 75	Aisi 304	66,5	75	270	PH 17.4	4	MX
MXB-R 90	Aisi 304	80,2	90	328	PH 17.4	4	MX
MXB-R 115	Aisi 304	101,5	115	412	PH 17.4	4	MX
MXB-R 140	Aisi 304	126,2	140	512	PH 17.4	4	MX

Please, use our questionnaire for sizing your MXB melt blender. http://www.best-in-process.de/en/downloads