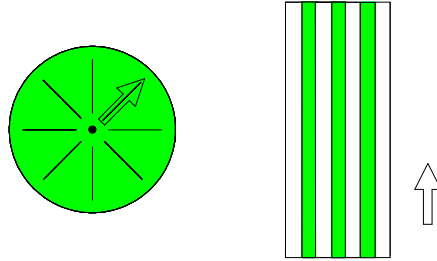
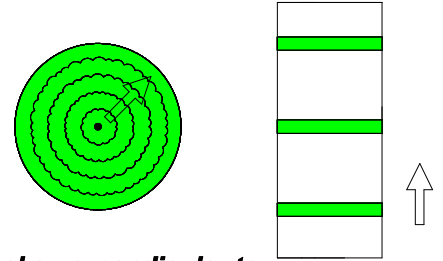


Effect of Static Mixers SMN and SMB on Injection Molding and Extrusion Processes

Type of flow pattern



Streaks in direction of flow



Streaks perpendicular to direction of flow

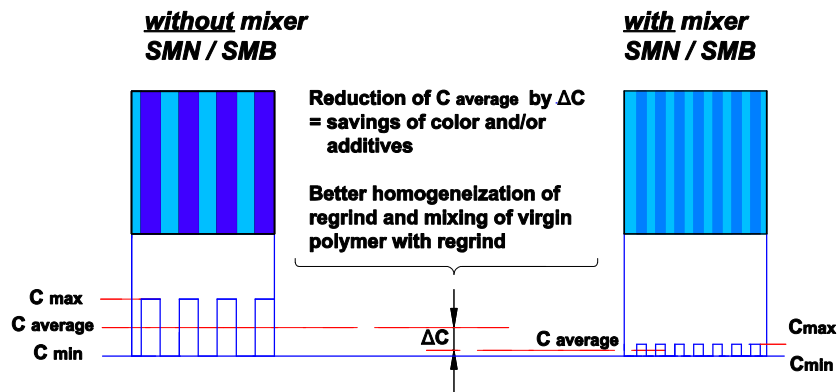
Characteristics

Corrective actions

Installation of SMN Mixing Nozzle
Installation of SMB Melt Blender
→ Mixing in radial direction, perpendicular to flow direction

Corrective actions assisting mixing in axial flow direction, e.g.:
→ Changing dosing ratio of colorant
→ Increasing back pressure

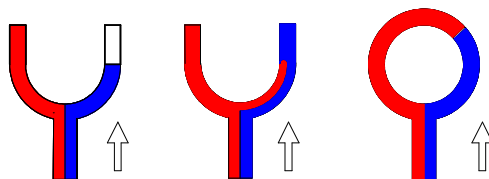
Pattern of concentration distribution



Injection Molding

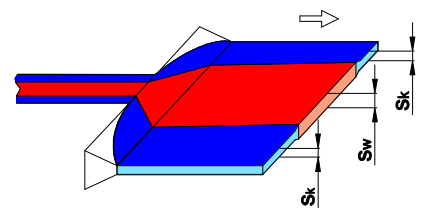
Extrusion

Polymer melt with large ΔT (without mixer SMN/SMB)



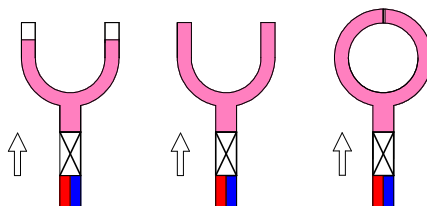
Result

Asymmetrical filling, uneven cooling
→ parts with distortion and weight differences, high reject rate



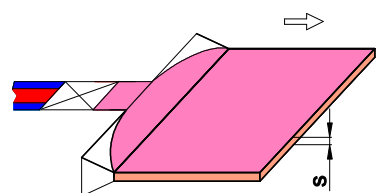
Uneven plate thickness
→ time consuming adjustment
→ high reject rate during start-up

Polymer melt with narrow ΔT (with mixer SMN/SMB)



Result

Symmetrical filling and even cooling
→ parts without distortion and of constant weight, small reject rate



Uniform plate thickness
→ adjustment in short time
→ small reject rate during start-up

Legend:



polymer melt of high temperature



polymer melt of low temperature



polymer melt of uniform temperature



SMN Mixing Nozzle
SMB Melt Blender



flow direction