

Blown Film Troubleshooting Guide

Problem	Causes(s)	Possible Solution(s)	
Applesauce	Insufficient Mixing	Increase back pressure by increasing screen mesh	
	Extrusion temperature too high	Decrease die and adaptor temperatures	
	Extrusion temperature too low	Increase die and adaptor temperatures	
	Die gap too wide	Decrease die gap	
	Extrusion rate	Decrease output rate	
	Excessive regrind	Change the amount of regrind being added to virgin material	
Blocking	Excessive tension in the winder	Adjust winder tension	
	Low level of antiblock additive	Increase concentration of antiblock	
	Film collapsing too hot	Lower frost line height/Lower melt temperature/Reduce output	
	Insufficient cooling	Use chilled air/Raise nips/Reduce output	
	Excessive surface treatment	Reduce treatment level	
	Excessive nip roll pressures	Reduce pressure	
Bubble Instability	Inconsistent melt feed to die	Adjust temperature profile to provide for more uniform flow	
	Dirty die	Pull and clean the die examining for dirt, pelletized, or burnt matter Use purge material	
	Worn screw and/or barrel	Use humped profile settings to begin earlier melting	
		Check for the presence of pelletized material in last zones Replace screw and/or barrel	
	Air currents	Eliminate air drafts/Reduce air output	
	Misalignment	Align nip rolls to die	
Chatter	Excessive cooling air velocity at die	Adjust temperatures Raise the frost line	
	Non-uniform gap between Material and air ring cone	Check gap between top of die and bottom of ring Possible polymer buildup in gap	
Die Lines	Dirty die and/or die lips (foreign matter lodged inside the die)	Clean die and/or lips with copper pad or brass shim Increase adaptor and die temperatures and screen mesh to increase back pressure	
	Scratched die lips	Repair surface at a machine shop	
	Insufficient blending of molten polymer	Increase mixing in extruder by adjusting barrel and die temperatures/Increase back pressure	
	Inadequate purging	Increase purging time between resin changes	
Erratic Output (Surging)	Inconsistent melt feed to die	Check temperature settings and functional parts Examine screw for pelletized material in last zones Increase temperature settings across the barrel	
		Dirty die	Pull and clean the die
		Worn screw and/or barrel	Use humped profile settings to begin earlier melting
	Plugged screen pack	Replace screen pack	
	Bridging	Cool throat	
Gauge Variations	Erratic cooling	Check temperature settings	
	Inconsistent melt feed to the die	Check temperature settings Adjust temperature profile to provide for a consistent melt feed	
	Dirty die	Clean die and/or die lips with copper pad or brass shim	
	Improperly adjusted die	Follow procedures for adjusting die bolts	
	Misaligned die	Center and align die to nip	
	Misaligned air ring	Center air ring with die	
Dirty air ring	Examine for lodged polymer Change the air filter		

Problem	Causes(s)	Possible Solution(s)	
Gauge Variation (cont.)	Dirty Air Ring (Cont.)	Check the seal between the air ring and die Check hoses for kinks or bends restricting air flow	
		Surging of the extruder	Check drive speed of the extruder Check temperature controllers Examine feed section housing Check the regrind feed for force feeding the extruder
	Die heat variation		Check for burnt out heater bands/Check temperature controllers
	Nip rollers		Check that the nip roller drives are running smoothly and not surging
	Gels	Contamination	Clean silos and transfer systems periodically
Excessive regrind		Drop ratio of regrind material to virgin material	
Defective heaters		Check and recalibrate	
Dirty screw and/or barrel		Purge and clean system	
Poor resin quality		Check resin homogeneity and gel/speck level	
Poor mixing		Check screw design	
Inadequate Drawdown	Dirty screen pack	Change out screen pack	
	Improper melt temperature	Increase melt temperature	
	High frost line	Decrease frost line	
	Insufficient back pressure	Use smaller mesh screen pack	
	Extruder surging	Reduce surging using a barrier screw	
	Wrong resin	Check resin specifications/Use different resin	
Low Gloss/High Haze	Insufficient mixing	Use ascending heat profile	
	Poor quality resin/wrong resin	Check specifications of the resin	
	Improper melt temperature	Increase melt temperature gradually	
	Inadequate cooling of the film	Check or modify cooling system	
	Poor mixing in extruder/die	Increase mixing in the extruder	
Melt Fracture	Inadequate die gap	Increase die gap	
	Extrusion temperature	Increase melt temperature Reduce output	
	Excessive friction at die lips	Add processing aid to coat die lips and reduce COF Increase melt temperature	
Poor Clarity	Extrusion temperature too high or too low	Adjust extrusion temperatures	
	Low blow-up ratio	Increase blow-up-ratio (BUR)	
	Poor mixing	Increase mixing in extruder	
	Inadequate frost line height	Increase frost line height	
	Inadequate film cooling	Check the cooling system	
	Poor resin quality or wrong resin grade	Check resin specifications	
Poor Heat Seal	Overtreatment	Adjust to proper level of treatment	
	Resin oxidation	Reduce melt temperature	
	Gauge variations	Check die uniformity Check for bubble instability Check for air ring leaks Examine for defective heater bands Check for possible surging	
Sealing bar warped	Examine for distortion		
Poor Printability	Insufficient treatment	Increase treat energy	

Problem	Causes(s)	Possible Solution(s)	
Poor Printability (cont.)	Insufficient treatment (cont.)	Decrease gap between film and treatment system Use lower slip concentration	
Port Lines	Dirty die	Pull and clean the die examining for contaminates Examine die for burnt material Use purge material to clean the die	
		Clogged ports and/or spirals	Problem will usually resolve itself within an hour or less Adjust cooling system to cool bubble uniformly Make sure the cooling system is working properly Check the concentricity of the die gap Raise the bottom die zone in 10°F increments
			Jagged frost line
		Melt temperature too low	
	Die too cold or too hot in comparison to melt temperature	Adjust die temperature to narrow the difference in temperatures between the two Insulate the die body	
	Scratches	Damaged or scuffed rollers	Replace rollers
Rollers not turning		Check roll drag and bearings, roll speed, and/or roll balance	
Excessive nip tension		Adjust lower nip drive speed	
Splitty Film	Scratches from collapsing frame, nip, or idlers	Eliminate source of scratches	
	Low blow-up-ratio	Increase blow-up-ratio (BUR) Use smaller die or tougher resin	
		High blow-up-ratio	Decrease blow-up-ratio (BUR) Use larger die or tougher resin
	Die lines		Clean die lips
	High frost line	Lower the frost line	
	Contamination (degraded resin or dirt lodged under edge of die lips which makes film split at weld)	Clean die lips, then reduce melt temperature	
	Thin spots in film	Check for die concentricity	
	Extrusion temperature too high or too low	Gradually adjust melt temperature	
	Insufficient cooling (frost line too high)	Decrease melt temperature Increase bubble cooling rate/Reduce frost line	
		Poor resin choice	Check for resin suitability
Streaks	Dirty die pin	Clean pin/Add additive to die plate/Remove reclaim from die	
	Roller surfaces rough	Rework rollers to ensure smoothness	
	Bubble guides and collapsing frames are rough	Repair or replace to ensure smoothness	
Uneven Film Width	Improper treater bar clearance	Adjust	
		Air leakage from the bubble	Repair or replace the nip roller Check for leakage in the inflation system Check for control valve problems if using an internal bubble cooling (IBC) system
	Bubble pumping or breathing	Decrease the air velocity of the air ring Increase the opening of the collapsing frame	
	Tension varies or is too high	Reduce tension as roll size increases	