Problem	Possible Causes	Possible Solutions
Rough extrudate surface	Melt or Die temperature is too low	1. Increase extruder temperature profile. 2. Increase die temperature. 3. Check heater/thermocouple functioning
	Melting is not homogeneous/complete	1. Increase melt shear (Use screw with higher compression ratio or screw with mixing zone.) 2. Use a more restrictive screen pack
	Moisture	1. Pre-dry material properly
	Die is not Streamlined	1. Check die alignment
	Excessive drawdown ratio	1. Modify die design or drawing speed to reduce drawdown
	Poor die design	1. Reduce land length. 2. Reduce shear in die and taper entrance. 3. Reduce die length. 4. Used polished die 5. Check wear on the die
	Improper screw design	1. Use thermoplastic screws with longer L/D ratio and higher compression ratio
Logitudinal dimension variations	Surging	1. Reduce throughput. 2. Use screw with longer feed or metering section. 3. Use more restrictive/tighter screen pack to increase back pressure. 4. Check wear on screw/barrel. 5. Check die and melt temperature. 6. Use shorter land die

	Uneven Take-off speed	1. Check take off device.
Porosity and internal voids	Moisture content too high	1. Dry pellets in dehumidifying dryer for specified time at specified temperature; check for possible condensation water in hopper throat
	Melt temperature too high/uneven cooling	1. Reduce barrel temperature set points 2. Adjust quenching conditions (air gap, water temperature)
	Too much screw shear	1. Change screw to one with lower shear (deeper metering channel or lower compression ratio)
	Air in screw feed	1. Reduce screw speed, reduce barrel temperature in screw feed zone, increase feed throat cooling.
Black specks / Undispersed particles	Contamination	1. Purge with low-MFI PP or HDPE. 2. Check the compatibility of the color concentrate. 3. Check for dirt and foreign particles
Odor or yellowing	Melt too hot/Degradation	1. Reduce barrel temperature. 2. Reduce die temperature. 3. Check heater/thermocouple functioning 4. Reduce shear (reduce screw speed, use less restrictive/coarser screen pack to reduce back pressure) 5. Use screw with lower compression ratio. 6. Streamline melt flow
Edge tearing along the profile	Die temperatures is too low	1. Increase die temperature 2. Check for malfunctioning heater band or thermocouple
	Melt viscosity is too high	