

Troubleshooting Guide for Cast Film and Sheet Extrusion

Problem	Possible Causes	Possible Solutions
1. Applesauce, gels, poor clarity	Melt temperature too high, or excessive residence time	<ul style="list-style-type: none"> • Reduce melt temperature • Correct malfunctioning thermocouple and controllers • Install a lower shear screw • Reduce head pressure by using a less restrictive breaker plate and screen pack • Eliminate melt hang-up • Change screw or temperature profile if material hangs in vent • Correct fit of transition sections so no ledges exist
2. Black specks	Foreign material, or degraded polymer	<ul style="list-style-type: none"> • Eliminate source of contamination • Keep paper bag fibers out of resin • Disassemble and clean extruder barrel, screw and die to remove deposits
3. Sharkskin or orange peel	The high viscosity melt leaves the die above a critical shear stress, predominantly encountered with LLDPE	<ul style="list-style-type: none"> • Lower the melt viscosity by using higher processing temperature • Decrease output • Use processing aids (e.g. fluoropolymers) • Increase die gap
4. Non-uniform optical properties	Temperature gradient across chill roll	<ul style="list-style-type: none"> • Check chill roll temperature and adjust if necessary
5. Milky areas of poor clarity	Contamination by incompatible polymer	<ul style="list-style-type: none"> • Prevent contamination • Clean loader, hopper and dryer • Purge extruder • Disassemble and clean barrel, screw and die if needed
6. Silvery streaks	Moisture on resin	<ul style="list-style-type: none"> • Prevent or remove moisture • Melt resin more efficiently per recommendations
7. Discoloration	Too high extrusion temperature	<ul style="list-style-type: none"> • Lower extruder temperature
8. Poor pigment dispersion	Poor mixing, or uneven melting	<ul style="list-style-type: none"> • Increase back pressure • Lower temperatures • Add static mixer • Change or modify screw • Better match of polymer and masterbatch MFR/polymer
9. Gauge bands	Dirty die lips, die adjustment, or flapping melt	<ul style="list-style-type: none"> • Clean lips • Reset die bolts • Reset air knife/vacuum box/edge pinning

10. Lensing or fish eye	Excessive amount of moisture in raw materials	<ul style="list-style-type: none"> • Dry raw materials
11. Dull surface over entire film or sheet	Poor polishing due to insufficient contact with chill rolls	<ul style="list-style-type: none"> • Fill both nips to ensure contact
12. Bubbles in sheet	Air entrapment	<ul style="list-style-type: none"> • Improve melting and mixing function of extruder • Increase head pressure • Set inverse temperature profile on extruder • Use a higher compression screw
13. Edge curl or poor flatness	Polish roll temperatures not balanced, or uneven heat transfer	<ul style="list-style-type: none"> • Correct with roll temperature • Maintain temperature variation across polish roll surface less than 3 °C • Increase sheet tension to improve contact with polish rolls
14. Deposit on chill roll (plate-out)	Poor chill roll contact, air trapped between the chill roll and the film	<ul style="list-style-type: none"> • Use the lay on roll to remove air cushion between the film and chill roll • Check pinning
15. Film or sheet blocking	Too hard winding, treatment level too high	<ul style="list-style-type: none"> • Reduce winding tension • Increase chill roll temperature to increase haze • Add antiblock • Reduce treatment power • Remove air under film at dielectric roll
16. Draw resonance	Drawdown ratio or drawdown distance too large	<ul style="list-style-type: none"> • Decrease die opening • Decrease line speed • Increase melt temperature • Reduce draw distance