Vi-Chem® CORPORATION

EXTRUSION

TROUBLE SHOOTING GUIDE - PART TWO

Problem *Surface Imperfections*	Probable Cause	Solution
Orange Peel	Die too hot	Reduce die temperatures
	Barrel temperature too high	Reduce barrel temperatures
	Volatile entrapment	Dry material
	Vent plugged	Clean vent and filters
	Melt fracture of extrudate	Increase die land length Decrease adapter entrance angle
	Die too cold	Increase die temperature
Poor Surface on Small Profiles	Extruder too big for profile	Use smaller extruder
	Linear velocity too high for die land	Melt should reside in land area .5 seconds minimum
	Die temperature too low for linear velocity	Raise die temperatures
	Too much back pressure	Decrease adapter length, increase opening
Lumpy Surface	Melt too cold	Increase screw speed Raise or lower screw temperature Raise zone temperatures
	Temperature difference between melt and die too great	Set die 5 to 10°F above melt temperature
	Non-uniform melt	Increase inventory of melt behind die land
	Screw compression ratio too low	Change screws, try mixing pins, devices
	Die compression ratio too low	Increase die land Reduce adapter entry, increase length Increase screen pack density

CONTINUED

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Problem	Probable Cause	Solution
Gloss Too High	Melt temperature too high	Run reverse profile, decreasing zone temperatures from 1 to 5 Reduce screw temperature
	Die temperature too high	Check thermocouple connections
Gloss Too Low	Melt temperature too low	Increase screw speed Increase screw temperature
	Die temperature too low	Raise die temperature
Pits	Under fused / worked	Preheat feedstock Reverse barrel temperature profile Increase screen pack density
	Fusion takes place too far back on the screw	Reduce temperature in zone 1
	Screw worn	Replace screw
	Screw compression ratio too low	Change screw
Pin Blisters	Melt temperature too high	Reduce screw speed Reduce barrel temperatures
	Die temperature too high	Reduce die temperatures
Irregular Finish	Cold air draft on die	Remove draft or shield die
	Burned out heater band	Replace heater band
	Material sticking in die	Clean die, rechrome
	Improperly mated die components	Avoid hang-ups and dead spots
	Heater band malfunction Controller, thermocouple malfunction	Check for even heat distribution Test controller for accuracy, check thermocouple
Edge Tearing Volatiles	Velocity at edge lower than center	Balance die
	Die temperature too low	Raise die temperature
	Melt temperature too low	Increase screw speed Increase rear zone temperatures
	Moisture in pellets	Is vent working properly? Dry pellets Raise zones 1 and 2 (on 5 zone barrel) Raise zones 2 and 3 (on 6 zone Barrel)
	Air	Make sure vent is working properly Raise zones 1 and 2

If normal corrective action doesn't alleviate the problem, just call Vi-Chem Corporation's technical service toll free line at 800-477-8501. V