

Trouble Shooting Guide for Injection Molding TempRite® CPVC Compounds

Defect: Short Shots

Possible Causes:

1. Insufficient material
2. Injection pressure too low
3. Injection speed too slow
4. Cylinder temperatures too low
5. Mold temperatures too low
6. Insufficient venting
7. Sprues, runners or gates too small
8. Improper gate location
9. Melt temperature too low
10. Insufficient back pressure

Defect: Sink Marks or Excessive Shrinkage

Possible Causes:

1. Insufficient material
2. Injection pressure too low
3. Hold time too short
4. Cooling time too short
5. Melt temperature too high
6. Mold temperature too high
7. Sprues, runners or gates too small (improper mold design)
8. Injection hold pressure too low

Defect: Weak Welds

Possible Causes:

1. Mold temperature too low
2. Injection speed too slow
3. Melt temperature too low
4. Injection pressure too low
5. Insufficient mold venting
6. Improper gate locations and/or size
7. Cylinder temperatures too low
8. Screw back pressure too low
9. Nozzle diameter too small

Defect: Part Sticking in Cavity

Possible Causes:

1. Injection pressure too high
2. Hold pressure too high
3. Hold time too long
4. Core side of mold too hot
5. Rough surface on sprue bushing
6. Rough surface on cavity side of mold
7. Fill rate too fast
8. Shot size too large

Defect: Blush Marks Around Gates

Possible Causes:

1. Mold temperature too cold
2. Injection fill speed too fast
3. Melt temperature too high or too low
4. Improper gate location
5. Sprue and nozzle diameter too small
6. Nozzle temperature too low
7. Insufficient cold slug well
8. Imperfections in gate openings
9. Moisture in the compound

Defect: Dullness on Molding Surface

Possible Causes:

1. Cylinder temperatures too low (increase in small increments)
2. Screw back pressure too low
3. Injection fill speed too slow
4. Mold temperature too cold
5. Melt temperature too low
6. Moisture in the compound

Defect: Silver Streaks on Part Surface

Possible Causes:

1. Melt temperature too high
2. Nozzle temperature too high
3. Injection speed too fast
4. Excessive moisture on material

Defect: Flashing

Possible Causes:

1. Injection pressure too high
2. Insufficient clamping pressure
3. Injection speed too fast
4. Melt temperature too high
5. Mold faces not plane and parallel
6. Improper venting (one cavity venting while another fails to fill)
7. Improper mold design

Defect: Dull Streaks, Flow Lines

Possible Causes:

1. Melt temperature too low
2. Runners too small
3. Improper gate size and/or location
4. Mold temperature too low
5. Inadequate cold slug wells

Defect: Warpage

Possible Causes:

1. Mold temperature too high (for thick wall sections)
2. Melt temperature too high
3. Insufficient hold time
4. Injection and holding pressure too high or too low
5. Injection speed too fast
6. Cycle time too short

Defect: Lamination

Possible Causes:

1. Purging compound left in cylinder
2. Mold temperature too low
3. Melt temperature too low
4. Injection speed too fast
5. Gate size too small
6. Injection pressure too high

Defect: Temperatures Over-Riding on Front Zones

Possible Causes:

1. Compression ratio of screw too high
2. Excessive back pressure
3. Insufficient air circulation on over-riding zones
4. Screw RPM too high

Defect: Burn Streaks in Center of Sprue

Possible Causes:

1. Front zone temperature too high
2. Screw speed too high
3. Excessive back pressure
4. Compression ratio of screw too high
5. Melt temperature too high

Defect: Burn Streaks at Gate

Possible Causes:

1. Injection speed too fast
2. Injection pressure too high
3. Gates or nozzle diameter too small (improper design)
4. Shear burning due to cold material

Defect: Discoloration or Burned Areas in Part

Possible Causes:

1. Screw speed too fast
2. Back pressure too high
3. Cylinder temperatures too high
4. Faulty temperature controllers
5. Gates too small
6. Dead material hung up on screw or nozzle
7. Insufficient mold venting
8. Melt temperature too high
9. Moisture in compound

Defect: Weld Burning

Possible Causes:

1. Injection speed too fast
2. Melt temperature too high or too low
3. Screw RPM too high
4. Back pressure too high
5. Nozzle diameter too small
6. Sprue, runner or gates too small
7. Injection pressure too high
8. Insufficient mold venting
9. Excessive moisture on the material