

Injection Molding Troubleshooting

Streaks

June 30, 2009



Streaks

- Moisture streaks/splay marks
- Burning streaks/silver streaks

Streaks

Moisture streaks/splay marks

Appearance

- Usually oblong, silvery surface
- streaks which are open in the shape of a U counter to the direction of flow.
- The material pumped out of the cylinder is foamed and shows blisters on the surface.

Cause

- Moisture content too high; water vapor is produced during melting and this results in the surface of the molding being torn open.

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Moisture streaks/splay marks



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Moisture streaks/splay marks

Solution:

1. Use material adequately predried to a residual moisture content of $< 0.1\%$.
2. Increase back pressure.3

Streaks

Burning streaks/silver streaks

Appearance

- Silvery or dark surface streaks
- In exceptional cases black discolorations.

Cause

1. Damage to the plastic melt due to excessively high temperatures or overlong residence times resulting from gaseous decomposition products.
2. High shear heating due to small gate cross sections or by sharp changes of direction in the mold.

Streaks

Burning streaks/silver streaks



Streaks

Burning streaks/silver streaks

Solution:

1. Reduction of the injection speed.
2. Avoidance of undersized gates and sharp changes in direction (shear intensive areas) in the mold.
3. Check the controller of the hot runner system and the barrel heater.
4. Reduction of melt temperature, screw speed (rpm), residence time (if necessary use a smaller plasticizing unit) and back pressure.