

# Melt blockage due to false start up will cause dramatic rate drop

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While starting the extruder, sometimes a startup is delayed by various reasons. As a consequence, the screw can get hotter than the desired temperature if the extruder barrel is left hot too long. As the plastic resin pellets, or powders, are fed slowly at startup speed (normally lower than the final operating speed), they can melt, stick, and freeze on the screw surface as the screw temperature cools down quickly by heat conduction to the feed. The frozen polymer will reduce the solid conveying capacity, thus resulting in the substantial rate drop. If you don't get the desired extruder rate, the melt freeze on the screw is the first suspect.

Usual solution is to extrude high viscosity, high melt point polymer to dislodge the melt blockage. In the worst case, one may have to pull the screw and clean it to eliminate the blockage.

- K. S. Hyun

See also:

- Gear reducer
- Melt blockage problems - styrene extruders running at high output rates
- Melt block problems
- Rapid extrusion line start up
- Screw and barrel wear

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