

Splash, Tear Drops, Mica Surface, Splay & Silver Streaks:

This type of defect can show itself on a moulding in a number of ways. These include the most common surface splash marks, mica surfaces, splay marks, silver streaks, flow lines and small internal bubbles caused by trapped volatiles or moisture.

Solutions to this problem can be numerous and related to the basic guidelines of maintaining sufficient pressure to prevent escape of volatiles or moisture in the moulded part or to drive off the volatiles before the material has reached a fully molten stage in the barrel.

The features that should be considered during the tool design stage are the incorporation of adequate venting in the mould, this will ensure that excessive temperatures and pressures will not be required to fill the mould, lower temperatures will reduce likelihood of splash occurring and use of gates and runners of adequate size that will prevent early freezing, and therefore allow sufficient pressures to be transmitted.

Having ensured that the material is dried in accordance with the manufacturers guidelines suggested remedies in order of speed that adjustments can be made and probability the remedy will be effective are as follows: -

1. Increase injection pressure.
2. Increase back-pressure - this compacts the melt and tends to drive volatiles back through the feed zone and out through the hopper.
3. Reduce screw speed - reduces frictional heat and is less likely to trap air in the melt.
4. Lower nozzle and metering zone temperatures - only if temperature is fairly high for particular flow grade - is tool vented?
5. Increase feed zone temperatures - has the effect of pre-drying or flashing off the volatiles. Material will begin to melt further back in barrel, but will have sufficient gaps to allow volatiles to escape via hopper.
6. Increase mould temperatures - assists in maintaining melt temperatures and transmission of pressure.
7. Pre-dry moulding powders - indicates moisture pick up after bag was opened, poor storage conditions or excessive time in storage.
8. Enlarge gates and / or runner system - indicates that these are not large enough to maintain pressure during early stages of moulding cycle.