Troubleshooting for injection molding requires a systematic approach with proper observation and documentation. Best practices include:

- Define the problem
- Developing a method to isolate the problem
- Testing one item at a time to verify results.
- Monitoring the final solution to verify the problem has been solved.
- Documenting the solution - this can ease similar problems in the future.

While each molded part is unique and there is no universal remedy for all molding defects, there are common quality-related issues which can be resolved with simple adjustments to either the machine conditions or the mold design.

The reverse side of this page shows 5 common injection molding defects and their probable causes. This resource can assist you in determining and correcting the issue to ensure a quality molded part.

While this guide can be helpful once a defect has occurred, many common molding issues can be avoided by a proper setup procedure including reviewing historical information and verifying all job settings in advance.

If you have specific questions about processing your molded part, contact John Schlitzer at 800.462.4781 ext. 104 or john.schlitzer@sylvin.com.

About Sylvin:

*Sylvin Technologies is a leading manufacturer of vinyl compounds available in a broad spectrum of colors and material enhancements for various markets and applications. The on-site technical service and development chemists are ready to develop new compounds customized to meet your specific needs. With 36 years of experience, compliance with regulatory requirements and superior customer service, Sylvin is committed to quality in the development and manufacture of your product. For more information, visit www.sylvin.com.*
<table>
<thead>
<tr>
<th>Defect</th>
<th>Image</th>
<th>Caused by Mold</th>
<th>Caused by Machine</th>
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</thead>
</table>
| **1. Sink Marks** | ![Sink Marks](image1.png) | • Inadequate cooling time  
• Mold temperature too high  
• Gates or runners too small | • Mold temperature too high  
• Gates or runners too small  
• Improper gate location |
| **2. Flow Lines** | ![Flow Lines](image2.png) | • Inadequate injection pressure  
• Inadequate residence time  
• Barrel temperature too low | • Mold temperature too low  
• Gates or runners too small  
• Inadequate venting |
| **3. Splay**      | ![Splay](image3.png) | • Barrel temperature too high  
• Excessive screw speed  
• Nozzle too small, too hot or obstructed | • Obstruction in the gate or runner  
• Gate too small  
• Cracks in mold |
| **4. Burn Marks** | ![Burn Marks](image4.png) | • Injection speed or pressure too high  
• Barrel temperature too high  
• Screw speed too fast | • Gates too small  
• Inadequate venting  
• Clamping force too high |
| **5. Flash**      | ![Flash](image5.png) | • Clamping force too low  
• Injection pressure too high  
• Injection speed too high | • Clamping force too low  
• Damaged mold  
• Inadequate mold supports |

**1. Sink Marks**
Small depressions in the material resembling dimples.

**2. Flow Lines**
Discolored lines or patterns on the finished product.

**3. Splay**
Also called “silver streaks.” A splash-like appearance or spray pattern on the surface of the molded part.

**4. Burn Marks**
Small dark brown or black discolorations on surface of molded part.

**5. Flash**
The thin layer of plastic that flows outside of the cavity where the two halves of the injection mold meet.