Extrusion Process Troubleshooting

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Today, everyone wants quick fixes and short-term solutions to problems. Whenever possible, it is more important to take the time to understand all phases of the process for better productivity and to have a baseline for comparison when troubleshooting. Troubleshooting is at the opposite end of the spectrum and is where the ability to make "quick fixes" is appropriate extremely important. Downtime can easily cost $10,000/day. Successful troubleshooting means rapidly solving problems, thus, getting the line up and producing saleable product, as quickly as possible.

This the first in a series of articles to be published relating to the techniques of troubleshooting to be applied to extrusion line downtime. Following is a list of the key requirements of successful troubleshooting:

1. A good troubleshooter must be patient, persistent and a logical, step-by-step, thinker.
2. Question everybody, but don’t accept everything you hear. Form your own opinions by gathering facts.
3. Clearly define the problem, in detail, as much as possible. The problem is the poor end result, not the cause. Don’t prejudge the cause!
4. Consider the whole process, not just the extruder. For example, a thermoforming process may have surging (varying) part thickness, which may be caused by the sheet caster, not the extruder. Don’t jump to conclusions.
5. Develop and understand baseline information. Record as much data and pictures as possible (beyond standard data sheets) when the line is running well. Document and understand baseline information, before a process upset.
6. Have a wide variety of high-quality troubleshooting tools available.
7. Only change one variable at a time, and note the changes. Resist the pressure from others to change more than one variable, or not to wait long enough to see the true effect.
8. Document successful results.

- Russ Gould RG Associates

See also:

- Problems plus creative input equals opportunities
- Troubleshooting polymer processing operations

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