

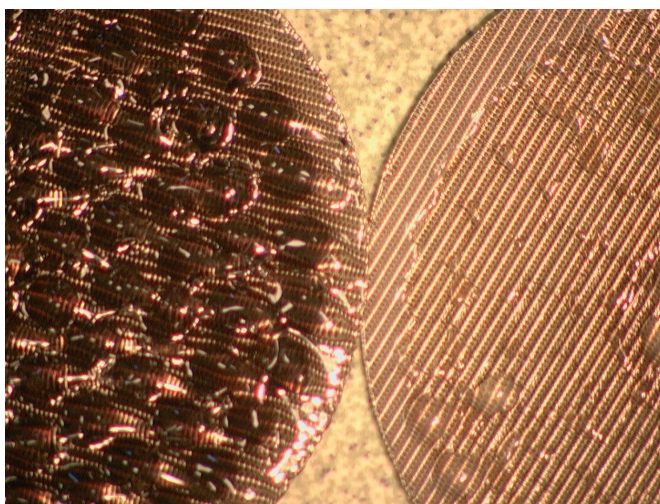
DR-Pack filters out residue problems

Faced with ongoing problems of organic residue build up on its melt filter screens, Hungarian blown film producer DR-Pack has identified vacuum conveying as a key contributor to the problem and developed a new closed alternative that eliminates the problem and improves loading performance.

The changes have paid off, with DR-Pack reporting reduced frequency of melt filter changes. But it says it has also been able to convey 20-25% more granulate in the same time frame.

Melt filtration packs are essential in achieving good homogenisation of the melt but the high temperatures and pressures at the screen surface mean organic residues can react and carbonise on the screen, reducing efficiency and increasing cleaning requirements.

DR-Pack says the problem is minimal with the pressurised air systems used to convey prepared granulate, which it



DR-Pack screen filters after 24 hours operation - traditional conveying technology shown on the left and the new technology on the right

attributes to the fact that all air entering the silo has been filtered. But with vacuum conveying and mixing, the granulate is sucked up along with a large volume of unfiltered air from the surroundings. Only the air going into the pump is filtered.

Complete filtering of the air and removal of humidity are

not economically viable. So DR-Pack has converted its granulate conveying to a closed system, reintroducing clean filtered air from the pressure side of the vacuum pump to the extraction pipe in the granulate container. The company says this means the conveying air remains permanently clean.

In the new system, the open end of the extraction pipe is located at the base of the granulate container so the material lying above it seals it from the air in the surroundings. This minimises losses in the conveying air and reduces contamination access from outside.

With traditional conveying systems, the static charges generated on the granules by friction can attract large amounts of contaminants such as dust, soot particles, heating combustion products, and pollen. Once in the system these contaminants accelerate screenpack deterioration.

Humidity from ambient air is also conveyed on the granulate into the extruder in conventional vacuum conveying systems. The high pressure prevents vaporisation in the extruder but it can contribute to bubbles or defects in the final film, according to DR-Pack.

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