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CONTACT
Christine Maxam
Global Marketing Administrator
Converting Systems
315-593-0359

Davis-Standard, LLC Patents Micro Layer Combining Adapter

(Fulton, N.J.)--A newly patented combining adapter from Davis-Standard, LLC simplifies infield interchangeability of polymer flow paths from multiple extruders for improved layer uniformity, accuracy, control and quick change when processing multilayer extrusion coatings and films. The patent on the "Micro Layer Combining Adapter" (US 7,296,992 B2) was issued in November to Davis-Standard engineers Frederick Suppon and John Montalbano.

The adapter, also referred to as a flow velocity profiler (FVP), features a cartridge assembly body or cassette comprised of individual cavities with precision layer inserts and divider walls to create passageways. The layering inserts form flow channels that can be individually selected or changed to accommodate polymer feed path flows. Each insert can also divide one polymer inlet feed into two channels and accurately meter flows to a common region. For example, a cartridge designed with nine inserts can create or define 18 individual flow channels. The design allows interchangeability of entire cassettes or inserts within a cassette.

This unique design offers processors several advantages over a conventional apparatus. It includes a capability to process a larger number of layers within a smaller package using interchangeable layering plates or inserts which can be customized based on polymer rheology. The design also allows the use of custom inserts to form definitive and positioned lanes in the final extrudate from the die. The FPV also provides a significant improvement in layer uniformity as a result of internal flow path streamlining, a shorter distance traveled by the combined polymers, matched velocities and shear rates at the combining region, and elimination of diverging flow areas in the flow path.

Applications where this new technology would be beneficial include extrusion coating and laminating as well as flat cast film, cast embossed film.

For more information about the Micro Layer Combining Adapter, contact Chris Maxam at maxamc@bc-egan.com.

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