

PlasTicker-News, 2004-07-12

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DR-PAck: A new generation of plastic film production



For the first time the Hungarian DR-PAck Kft (www.drpack.hu) commenced the manufacturing of polyethylene (LLDPE) cling and catering films in 1991. The products are made of high quality raw materials, manufactured with a continuously developed technology of more than one decade and are exported to several European countries. The films are tested and inspected by accredited institutes on a periodical basis.

Besides the manufacturing of plastic films the company deals with complex machinery development on a high level. The company's engineers in their research and development activities have focused on reducing the deficiencies and defects of the extensively used conventional blown-type film production. Two inventions have been completed recently: the die with a rotating core and the intensive air cooling system. Both novelties are utilized in a production line that is suitable for the production of a new generation of plastic films.

In this kind of die the relative displacement of the delimiting surfaces of the standing house and the rotating core causes the kneading of the material on a spiral lane. In consequence of the continuous kneading and shearing, the material is heated. The heat is generated inside the material, therefore the hottest component of the system is the melt itself. Owing to this fact, the probability of the material's adhesion to the inner wall of the nozzle is reduced. The big-viscosity melt, the standing house and the rotating core form a sliding bearing which, owing to the rotation, self-adjustably assures the concentricity of the surfaces that determine the discharge area.

The intensive air cooling system serves the improving of the effectiveness of the cooling and heating processes. It can be applied advantageously in course of the heat transfer of the agents having a relatively big speed difference. Its operation is based on the speed dependence of the value of the heat transfer factor. With this cooling system the rate and evenness of the heat transfer is considerably increased. In consequence of the above, with this even and intensive cooling system the homogenous melt leaving the die with the rotating core can be solidified after an orientation in a short time.

The utilization of the novelties provides an opportunity to manufacture plastic film having significantly better quality with more favourable cost factors. The better quality in this case means even film thickness and better physical parameters. In numbers, the thickness tolerance of 15-20% of the traditional method can be reduced to 1-5%. In the end, the weight of film for a certain packaging application reduces, so does the quantity of the waste to be stored at refuse grounds that causes less environmental strain.

K'2004, Düsseldorf, 20.-27.10.2004, in Pavillon 17/ C78

DR-PAck Kft., Budaörs/Hungary