Multilayered structure of PE-based polymer film composites

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Keywords: Blow molding, injection molding, multilayer film, polymer processing,

Polymer processing of films becomes widely developed recent years and evolved in different directions to obtain more complex structures including mono- and multilayer films and films filled with different fillers like micro- and nano-sized particles. Achievements in polymer chemistry and polymer processing through more advanced technologies equipped with precise sensors and computer controlled brings possibility to obtain more advanced structures of polymer composites. Multilayered films are used recently for many applications like packaging, materials with special barrier properties or with resistance for specific liquids or radiation, e.g. UV. The investigation aims to obtain the composite in form of 3-layer polymer film (fig. 1). Structure of the composite contains polymer based layers. To obtain the film was used blow molding technology on 20 meter high machine with advanced, rotating basket, gravimetric dosing and precise sensors. Tensile strength of 3-layer layer films can be even doubled comparing to single layer film. Additionally material composition and arrangement can brings additional improvement of properties.

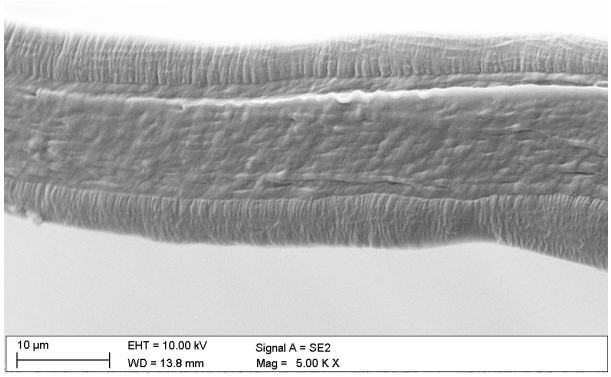

Figure 1. Cross section of 3-layer polymer film.