

POLIGROUP Bulgaria: 100% high-quality recycling film

Poligroup Ltd. of Bulgaria has been producing film of a high quality and in part with thicknesses around 30 µm from a mixture of wastes since September 2013. The system used by Poligroup consists of a washing plant from Herbold Meckesheim GmbH and a TVEplus[®] system from EREMA.



The film mix processed by Poligroup comprises three components: the basis is made up of LDPE waste agricultural film which, after the removal of contaminants, is a largely monofraction material with consistent MFI. Secondly there is LLDPE film waste which likewise comes from the agricultural sector and improves physical properties. And thirdly, films from household waste which accumulate in automatic sorting stations and are a particularly inexpensive material in the marketplace. These different materials, however, also mean various, in part very challenging, requirements in processing. Due to what is in some cases up to 50% contamination of the agricultural films (e.g. through sand and pebbles) and the household films being composed of a wide variety of plastics, Poligroup demanded enormous flexibility and high energy efficiency in their choice of the overall plant concept.

High-quality recycled pellets

Following the optimum preparation of the input material in the HERBOLD washing plant the washed, monofraction film flakes are processed on an EREMA 1514 TVEplus[®] system (throughput 1,100 to 1,200 kg/h) with LF2/350 Laserfilter (filtration fineness 110 µm) and HG 244 hot die face pelletising system to make high-quality recycled pellets – which are then in turn reused up to 100% in the production of bin bags, protective covers and construction films. In the cutter/compactor with patented Air Flush Module the washed household film waste material with a high level of residual moisture of 8-12% and a high degree of contamination is cut, mixed, homogenised, heated, degassed, densified, buffered and dosed – all in a single pass. The proven basic principle of the TVEplus[®] system is the configuration of the melt filtration upstream of extruder degassing, with the significant benefit that the minimal shearing influence in the melting process prevents any further size reduction of the contaminants prior to filtration and thus increases filtration efficiency. Furthermore, thanks to their early removal from the recycling system, the contaminants cannot outgas prematurely, thus additionally minimizing any odour formation in the recycled pellets produced. The optimised triple degassing of the TVEplus[®] system also ensures highly effective degassing of the filtered melt. Nikolay Tomov, Production Manager at Poligroup, explains as follows: "The system also stands out through its easy handling and long service life of the wear parts such as filter screen and pelletiser knives. It has been customised exactly to meet our concrete application requirements and this means the highest level of efficiency for us."