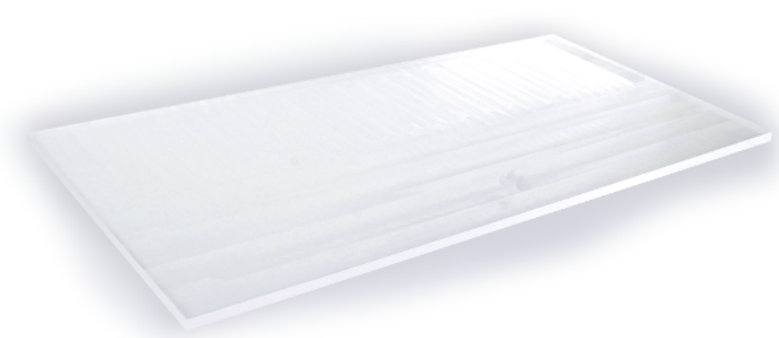


Thickness sensing of plastic sheets and films by Hammer-IMS's Marveloc 602

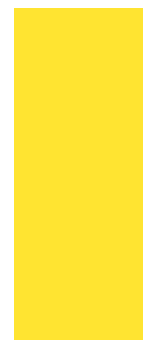
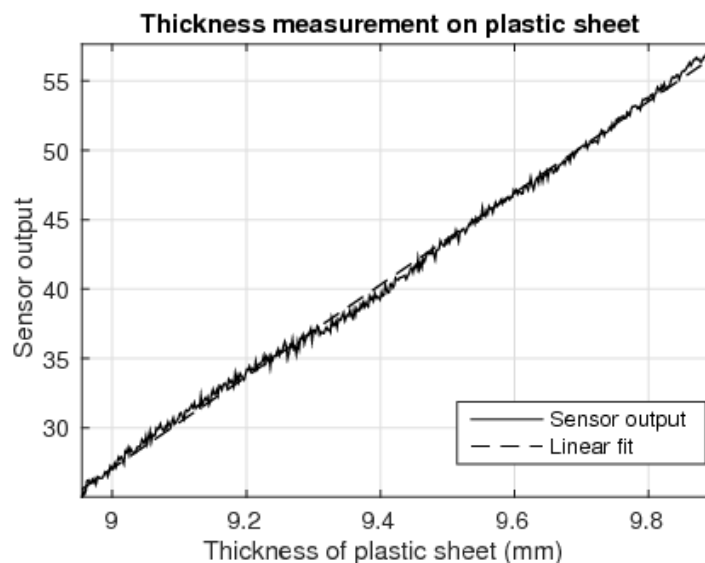
1 Plastic sheet

Technologies based on the emission and detection of nuclear or radioactive power often perform weak for thick (or heavy) materials, since the emitted power levels should be low enough not to cause hazards to human beings standing nearby the production equipment. Moreover, nuclear sources are optimized for a certain thickness range, since nuclear power drops down significantly when the material's thickness (or weight) increases.

Millimeter-wave power is not significantly reduced by above-centimeter-range thick structure. Therefore, sensors using these waves can sense thick sheets as well. Hammer-IMS's products of the Marveloc 602's product family are perfectly suited to measure thicknesses of thick (centimeter range) extruded or cast plastic sheets. These kind of sheets typically come with different levels of coloring additives. This implies that optical systems are not useful for sensing this material's thickness. The picture below shows an extruded transparent plastic sheet having a thickness gradient applied to it (by milling). Note that the sheet is translucent.



If the sensor scans over the sheet, the applied thickness gradient is sensed by the Marveloc 602-sensor. The picture below clearly shows the measurement's precision.



2 Transparent plastic film

An interesting field-of-application lies in tracking the profile of an extruded film. The animated figure below shows results of an inline measurement case for which a plastic film's (EVA film) thickness profile has been tracked. The sensor perfectly visualizes the profile as a function of time. Note that the reduction of the thickness by the end of the measurement period is caused by a shutdown of the extrusion line. If the sensor scans over the sheet, the applied thickness gradient is sensed by the Marveloc 602-sensor. The picture below clearly shows the measurement's precision.

