



FLEXIBLE PIPE INSPECTION WITH TERAHERTZ TECHNOLOGY

1 *Pipe inspection system for testing wall thickness during production*

2 *The pipe being inspected for wall thickness at four selectable positions*

Improved quality and efficiency: An inline control check of pipe-wall thickness during extrusion enables the optimization of the production process. Early in 2018, we supplied a newly developed pipe control system to a global market leader, marking a milestone in the history of coating thickness measurement.

In addition to non-contact coating-thickness measurement of multi-layer paint coatings, recent developments in wall-thickness measurement during the pipe extrusion process have proven to be a promising application for terahertz technology. Our inline measuring system enables the customer to test the pipe-wall thickness directly after the extrusion of the plastic and to readjust the settings so as to optimize the production quality and efficiency.

Simultaneous measurement on four channels

The project launched with ambitious requirements for the early phase. The previous system, designed for a single sensor, had to be expanded for the simultaneous measurement of four channels allowing for four positions around the pipe to be checked at the same time. This requirement posed challenges for the integrated fiber optics as well as the collection and evaluation of measurement data.

The mechanical design had to feature the required flexibility to freely select these four positions and handle numerous different pipe diameters. The symmetrical arrangement of the system and the integrated monitor arm allow it to be installed and operated from either side of the production line.

Expansion to other market segments

The intuitive user interface – designed according to customer requirements – allows for convenient operation via a touch screen. A customer-specific interface to the manufacturer's plant control system guarantees optimal integration of the measuring system.

We provide our system with application-specific adjustment capability; we offer our system not only to pipe manufacturing companies, but also to hose producers. Because these two markets are so diverse, we see good opportunities ahead for additional customer-specific implementations.