WARP portable used by Westfälischen Kunststofftechnik (WKT)

Stefan Depmer, Head of Technologies and Operations with the company WKT still remembers former days when reliable and efficient wall thickness measurement was carried out by ultrasonic devices but only at the end of the pipe production process due to different temperature gradients in the pipe wall. A check at such a late stage and the late intervention into the process resulted into a high scrap rate. WARP portable – the iNOEX handheld system based on Terahertz technology offers high-precision wall thickness measurement – the perfect solution for WKT.

More than 8 years ago, iNOEX recognized the advantages of this key technology Terahertz at a very early stage and developed it to the now trendsetting measuring technique which is suitable for industrial surroundings. WARP portable is proven evidence of the comprehensive know-how iNOEX possesses in this field, the company is regarded as the inventor of mobile Terahertz.

WARP portable – Terahertz-based handheld system

WARP portable, which has been developed on the basis of a sophisticated chip-based radar technology is designed for the mobile and precise wall thickness measurement of extruded mono layer pipes, large-sized sockets and plastic sheets. Inline and offline random measurement checks can be carried out within seconds and very reliably with this mobile handheld system. „This innovation has found our approval very quickly", commended Depmer this device. „The battery-powered handheld system with a running time of approx. 8 hours meets exactly our needs in the pipe extrusion process. We are able to gain reliable measuring results directly at the end of the vacuum tank. This early measurement and thus the option to intervene at a very early stage have lead to enormous savings, up to approx. 40 m in the extrusion line, explains Stefan Depmer.

Terahertz measurement is hardly dependent on temperatures, this makes extensive and repeated calibration processes unnecessary. Measuring is based on non-ionizing electromagnetic radiation of very low power which is non-hazardous for humans. No coupling medium is required. WARP portable offers non-destructive and contact-free measurement of wall thicknesses between 5 to 110 mm, with an accuracy of <50 µm.

For Türkayan Güneyik, Operations Manager PE with WKT, the simple and uncomplicated handling are the key benefits. Two positioning aids for different pipe diameters which are included in the delivery make it very easy to position the device correctly on the measuring object. The measurement is triggered at the push of a button. Within seconds the wall thickness and timestamp are available on the display. An internal acceleration sensor provides additional information on the measuring angle of the device towards the pipe. Measuring data and measuring positions provide valuable information for the line operator. Based on this data he is able to carry out a fast manual centering of the extrusion die.

The measuring data logger memorizes up to 100 measurements including timestamp and measuring positions around the pipe circumference. Data can be exported via USB stick or optionally downloaded by WIFI on a local computer. WKT uses this data for measuring data protocols in their data base.

The simple and intuitive operation is carried out via touch display made of smartphone glass. This robust scratch-proof and crack-resistant glass display plus the low weight, the very good light transmission and the sensitivity to touch offer the highest user comfort. The robust splash-proof design of the housing (IP54) offers good protection against water and dust in industrial surroundings.

WARP portable in field use with WKT. Stefan Depmer, Head of Technology and Operations, and Türkayan Güneyik, Operations Manager PE, check the pipe wall thickness during the ongoing production process.

The Operation Manager of WKT also emphasizes the mobile usability, not only along the ongoing production process and for the different extrusion lines (PE, PVC), but also for final inspection tests or random checks of ready pipes in the warehouse.

WARP portable is also used for monitoring suppliers. All common types of plastic such as PE, HDPE, PP, PA, PVC, are measurable.

This innovative system for simple measurements within seconds has a globally proven track record of successful use with more than 100 systems sold to the market, Westfälische Kunststofftechnik is only one of the players among many satisfied customers.