

SIKORA EXTRA

Your magazine for Hose, Tube, & Pipe |
Sheet & Board



20 years Hose & Tube

04

X-RAY 6000 PRO C-PIPE^{AI} – measuring
corrugated pipes

07



Dear readers,

Following our 50th company anniversary last year, we are celebrating another anniversary this year. We have been active in the tube, pipe and hose market for 20 years now, supporting you with high-quality measuring and control technologies for quality control in your production. In an interview, our employee Peter Hügen, who accompanied the market launch, looks back on the beginnings and development of our line of business.

20 years on the market is no reason to rest on our laurels. We have recently launched 3 new measuring systems. In this issue, you will gain an insight into the features that characterize our new LASER PRO measuring heads and how the LM SMART length mea-

Dr. Christian Frank
CEO SIKORA AG

asuring system makes an impact. We can now also reliably measure corrugated pipes thanks to our newly developed AI-based approach.

And there is also something new to report on the service side: We have a new portfolio and can now offer fixed price repairs for many measuring systems. This saves you time and money. More about this in this issue.

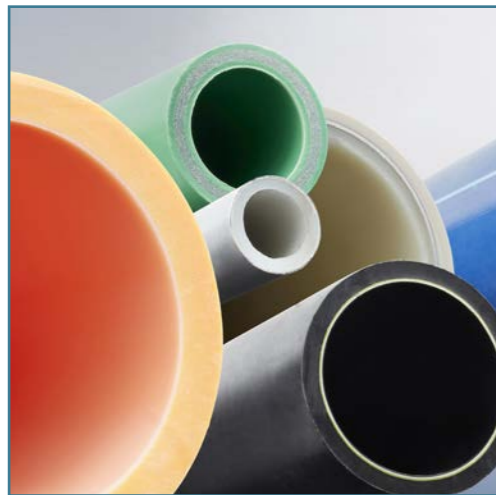
We hope you enjoy reading it!

Yours sincerely,

Holger Lieder
Executive Board SIKORA AG



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20 YEARS HOSE & TUBE

Interview with Peter Hügen – Looking back at SIKORA's beginnings, milestones and successes in the hose, pipe and tube market



Back in 2004, Peter Hügen became part of the SIKORA sales team. Around the same time, SIKORA received the first inquiry from a hose manufacturer regarding the possible quality assurance of its products with SIKORA technologies. It quickly became clear that this market needed its own parameters, and therefore, expert advice. Peter Hügen became our first hose and tube consultant and remembers the last 20 years, the milestones in quality assurance and the successes.

You were the first SIKORA employee to specialize in consulting for tube and hose manufacturers. What was the biggest challenge at the beginning of this 20-year journey?
 In 2004, we were already a well-known name in the wire and cable market. In the hose, pipe and tube market, however, we first had to prove ourselves and make a name for ourselves. Fortunately, our devices and technologies were way ahead of the competition in some respects. By using our X-ray technology in the X-RAY 2000 (the predecessor of today's X-RAY 6000 series), we were even able to measure rubber hoses – a feature that is not possible with other common technologies, such as ultrasound.

The requirements for quality assurance technologies for tube, pipe and hose production differ significantly from those of the wire and cable industry. How can SIKORA nevertheless serve both markets?

We have an excellent research and development team that has always been able to respond to new requirements on short notice. Our approach has always been to work in close partnership with our customers and to listen to the market so that we know what is actually in demand and needed. This combination of extensive market knowledge and flexible development results in individual solutions for our customers. This means that every customer gets exactly what their production line needs.

In the last 20 years, SIKORA has introduced many new devices and technologies. What have been your personal highlights?

My personal favorite is and remains the X-RAY 6000, which is the device that started it all and supports most production lines. Whether single-layer or multi-layer products, plastic or rubber, outer diameter or concentricity – all of these can be measured and controlled with the X-RAY 6000. With the introduction of the CENTERWAVE 6000, which is based on millimeter wave technology, we were then able to offer manufacturers of large pipes a suitable solution.

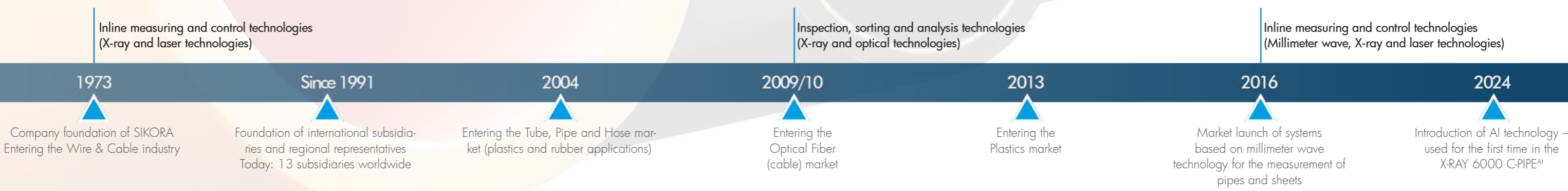
And what were the biggest successes of the SIKORA devices on the hose and tube market for you?

Entering the market and gaining customer acceptance was certainly the greatest success. At the beginning, we mainly focused on producers of rubber hoses for the automotive industry. The expansion of our technologies and thus the entry into the plastic tube sector is the second major milestone for me. Only SIKORA was able to offer 3-layer measurement and that was something the market had been waiting for. In 2016, we were also able to offer solutions for the quality control of large tubes and sheets – even with multiple layers. We have just celebrated the next innovation with the launch of the X-RAY 6000 C-PIPE^{AI}. The device works with artificial intelligence and is able to precisely measure corrugated pipes.

20 years is a long time. How do you still manage to inspire the market and SIKORA's customers?

Our customers' trust in our technologies is what motivates me the most. We are a well-known player in the market and can offer customers all over the world suitable solutions. I am proud that SIKORA is one of the pioneers of the market and that our technologies are still far ahead of many others today. I also have many highly qualified colleagues around the world who do their best every day to provide our customers with more sustainability, quality and cost efficiency. Today, 20 sales colleagues work worldwide at our headquarters in Bremen and in our 13 subsidiaries in the hose and tube sector. So much technical expertise is impressive and makes it clear that SIKORA devices are now an important component in the production of tubes, pipes hoses and sheets.

Mr. Hügen, thank you very much for the interview!



"MONITORING THE MANUFACTURING PROCESS HELPS US TO SIGNIFICANTLY REDUCE SCRAP"

Uponor relies on inline millimeter wave technology from SIKORA for the measurement of plastic pipes

Uponor Corporation was founded in 1918 and is nowadays based in Helsinki, Finland; since November 2023, the company has been part of Georg Fischer AG. Uponor offers its customers sustainable building and infrastructure solutions within its three business segments: Building Solutions – Europe, Building Solutions – North America and Uponor Infra. Today, Uponor employs more than 4,000 professionals in 26 countries in Europe, North America, and Southeast Asia. At the production site Vaasa, Uponor Infra Oy uses SIKORA's CENTERWAVE 6000 to continuously monitor the quality of its plastic pipes during extrusion.

A continuous monitoring during manufacturing is not only requested by Uponor's customers, but also necessary to receive the best product quality and to optimize production processes. Therefore, Uponor Infra Oy uses the CENTERWAVE 6000/1200 for measuring its drinking water pipes, pipes for wastewater applications, radiant heating and cooling systems, jacketing pipes and industry pipes. The measuring system, based on

millimeter waves, is suitable for pipes from 450 to 1,200 mm (17.7 to 48") diameter. "When we were looking for a suitable measuring device for our extrusion line, we compared different systems on the market," says Anders Beijar, Production Manager at Uponor Infra Oy. "At different production sites, we tested both a system with fixed sensors and the CENTERWAVE, which has a rotating sensor instead. The fixed sensors did not cover the whole pipe, whereas we were able to measure the complete circumference of the pipe with the CENTERWAVE – gapless! This measuring principle convinced us at once," explains Beijar.

Installed early in the process, the CENTERWAVE 6000 measures the wall thickness and pipe diameter directly after the first vacuum tank. This lays the foundation for material savings. "The start-up of CENTERWAVE 6000 is easy, you just switch it on and it starts working fast and reliably. You do not waste any time for presetting etc. The immediate monitoring of the manufacturing process helps us to significantly reduce scrap," says Beijar. In times of increasing raw material prices and material shortage, material savings are essential for Uponor Infra Oy. "Scrap can be used for producing pipes again; however, if you produce a pipe overweight, it is delivered to the customer and cannot be used again. You simply do not get it back. Our pipes weigh from 50 to 350 kilos per meter and raw material is expensive. Thanks to the CENTERWAVE 6000, we can produce closer to the tolerances in a sustainable way by manufacturing economically and saving scarce resources at the same time."

The investment in the CENTERWAVE quickly paid off for Uponor Infra Oy. "We had a special project where the CENTERWAVE was running about a year. Here, we saw a lot of savings so that our investment paid off within just a few months," resumes Beijar. Uponor is also satisfied with the service provided by SIKORA. "The communication with the SIKORA Service during installation and support afterwards was good. We are very pleased with SIKORA's quick and reliable ongoing support," states Beijar.



PIONEERING MEASUREMENT OF CORRUGATED PIPES

Discover the new X-RAY 6000 PRO C-PIPE^{AI}

Challenges in measuring corrugated pipes

There are two crucial phases during the production of corrugated pipes. In the beginning of manufacturing, it must be ensured that the different layers of the pipes are concentric. This evaluation can take several minutes, even hours, where only scrap is produced. After the start-up phase, the products must be evaluated in order to comply with predefined specifications at a certain line speed.

The solution

In order to minimize the duration in which start-up scrap is produced, the manufacturers' goal is to implement a permanent wall thickness and eccentricity measurement as early as possible in the extrusion process and to use these measuring values to control the process and enable a fast centering. Due to its hill-valley outer pipe contour, the measurement of corrugated pipes is quite challenging.

The X-RAY 6000 PRO C-PIPE^{AI}

By combining a newly developed software based on AI with an X-ray based system, SIKORA has developed a reliable solution for measuring the transitions of layers: the X-RAY 6000 PRO C-PIPE^{AI}. As a result, a precise evaluation of the X-ray data of corrugated pipes is now possible. This continuous quality control permits a reliable process control during manufacturing.



The benefits of the X-RAY 6000 PRO C-PIPE^{AI}

- Possibility to measure the outer pipe contour of corrugated pipes
- Early wall thickness and eccentricity measurement for a quick centering and reduction of start-up scrap
- Reliable measuring of the transition of layers for a precise evaluation of measuring data
- One-button operation: no material parameters required
- Clear visualization of product parameters and data logging on HDD and network
- Extensive data storage options
- Interfaces: OPC UA, Fieldbus, Ethernet

Anders Beijar, Production Manager at Uponor Infra Oy, with the CENTERWAVE 6000 from SIKORA.



LM SMART – RETHINKING LENGTH MEASUREMENT

Exceptionally accurate and non-contact length measurement – durable and reliable

The LM SMART stands for smart length measurement, and it expands SIKORA's product range with an innovative length measuring device. The system measures lengths without contact and with extraordinary accuracy of 0.05 %. Compared to conventional contact-based solutions, there is no slippage or wear. Once the device has been configured, no further calibration is required. The LM SMART measures accurately and reliably over time.

Benefit from the exact length
Length measuring devices are used to ensure that the required length of the tube, pipe, hose and sheet is accurate. Short or excess length leads to yield losses. If the production length is reduced by just 0.1 %, the LM SMART length measuring device pays for itself in just a few months.



Function: So simple and so smart

The LM SMART is based on the market-proven laser doppler measuring method and therefore functions largely independent of the color, surface quality and diameter of the product. Two laser beams are used to direct light onto the passing product surface. The beams overlap and create a stripe pattern on the object, from which the speed and thus the product length traveled over time is precisely determined.

Your personal benefit

The LM SMART offers precise length measurement and ensures that the required product length is maintained. Thanks to its very compact design, this device can be easily integrated into existing lines. No slippage, no

maintenance and only a single calibration. This impressive system ensures smooth, continuous measurement independent of the material, which allows for use on many different products. The long service life also ensures maximum availability of the LM SMART.

TYPICAL FEATURES OF THE LM SMART

- Laser protection class 3B (laser class 1 optional)
- Comfort stand (optional) for easy set-up and adjustment
- ECOCONTROL display unit (optional) provides a clear display of the produced length and line speed – also for existing ECOCONTROL devices
- Direction recognition via system signal



LASER PRO – NEW STANDARDS IN DIAMETER MEASUREMENT

Three innovative models with 5 extended benefits for product diameters from 0.1 to 51 mm (.0039 to 2.0079")

Accurate and repeatable measured values

The diffraction analysis in combination with pulse-controlled laser diodes results in an impressive 500,000 measuring points per second per measuring axis in the entire measuring field. This results in 5,000 accurately measured values per second per measuring axis. This ensures that the values supplied are both accurate and repeatable.

Precise measured values despite vibrations

Thanks to the extremely short exposure time of less than 1/1,000,000 seconds, the individual precisely measured values per second per axis are captured with maximum image sharpness. This ensures absolute measuring accuracy, even at high line speeds with product vibrations. Each individually measured value achieves an extraordinarily high single value accuracy.

Robust technology and high availability

The non-contact measuring technology of the LASER PRO works entirely without moving parts and is therefore maintenance and wear-free. A single calibration before delivery is sufficient to guarantee precision for the lifetime of the device. The availability of the laser measuring heads is 99.8 %.

FFT analysis for detecting irregularities during extrusion

The LASER PRO offers the option of FFT analysis to detect periodically recurring variations in hose, tube and pipe parameters. These are important tools for producing high-quality hoses, tubes and pipes and detecting irregularities during extrusion.

Slim design with swivel concept

The measuring heads of the LASER PRO family provide the ultimate functionality with their compact and slim design. The optical components are located in protected areas. The diffraction analysis detects unavoidable, gradually occurring contamination in real time and reports it. All models are designed to be open at the bottom so that neither water nor dirt can fall into the measuring head. The swiveling measuring head concept allows the device to be swiveled out of the working area if required.



Good to know

Diffraction-based method

A high-resolution fan-shaped laser beam is aimed directly at a CCD line. The monochromatic light casts a shadow image on the line. Fluctuations in intensity appear at the transitions from dark to light. These are used to calculate the tangents of the left and right geometric shadow boundaries. Together with the tangents of the measuring plane offset by 90 degrees, this results in four tangents that touch the material to be measured. The diameter and ovality are thus determined with an accuracy in the sub-micrometer range. The diffraction-based method works with an extremely short exposure time and achieves very high single value accuracies.



The measured values of the LASER PRO are displayed on the ECOCONTROL. Trend data, statistical functions and FFT analyses can also be called up clearly. The SET POINT control module can be used to control the diameter to the target or minimum value.

SIKORA FIXED PRICE REPAIR – HOW TO SAVE TIME AND MONEY

Expansion of the service portfolio: Fixed price repair offers are now also available for many devices

SIKORA measuring and control systems are characterized by their long service life. To ensure that your device still works as reliably as when it was commissioned, our SIKORA Service has increased its options for device maintenance. From now on, fixed price repair offers are available for several devices.

What that means for you

Even the most reliable systems will be repaired at some point to ensure precise and lasting measurement. It is important that it is quickly operational again. With our SIKORA fixed price repairs, you receive the quote immediately following your inquiry – without any additional wait time. Further costs, for example, a second cost estimate or subsequent costs for the repair, are eliminated with this service offer. In addition, the turnaround time for your equipment is considerably reduced. We guarantee your production will run smoothly again quickly.

What this means for you:

- Planning reliability
- Shortened lead time
- Cost efficiency
- Cost transparency



Which product groups are eligible for these service packages?

SIKORA fixed price repair is available for selected products of the following device series:

- **LASER Series:** LASER 2010 XY/T, LASER 2025 XY/T, LASER 2030 XY, LASER 2050 XY, LASER 2100 XY, LASER 2200 XY, LASER 6020 XY, LASER 6040 XY
- **LUMP Series:** LUMP 2010 XY/T, LUMP 2025 XY, LUMP 2035 T
- **SPARK Series:** SPARK 2030 UL, SPARK 6030 HF

Make your device fit for the future!

Have your SIKORA device checked and contact us today at [+49 421 48900 50](tel:+494214890050) or at www.sikora.net/en/fixed-price-repair, to request your fixed price rate quote. For further questions, please contact our SIKORA Service.

RAFFLE

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Wordgrid

Find these 6 hidden words in the letter grid:

- WORLDPREMIERE
- CENTERWAVE
- FIXED PRICE REPAIR
- DIAMETER
- QUALITY CONTROL
- LENGTH MEASUREMENT

Send us a photo/screenshot of your solution by July 31, 2024, to: extra@sikora.net

You can win one of 3 Blink Video Doorbells (black).



Image similar

Your contact details will not be passed on to third parties. Every entry will be entered into the prize draw. Unfortunately, SIKORA employees and their relatives may not take part. Each person can only enter once. We will evaluate the first e-mail, all subsequent e-mails will be considered invalid. Legal recourse is excluded.

GOOD LUCK!

NEXT EVENTS



• InterPlas | Jun 19-22, 2024 | Bangkok, Thailand



• Plastics Extrusion World Expo | Sep 11-12, 2024 | Brüssel, Belgium

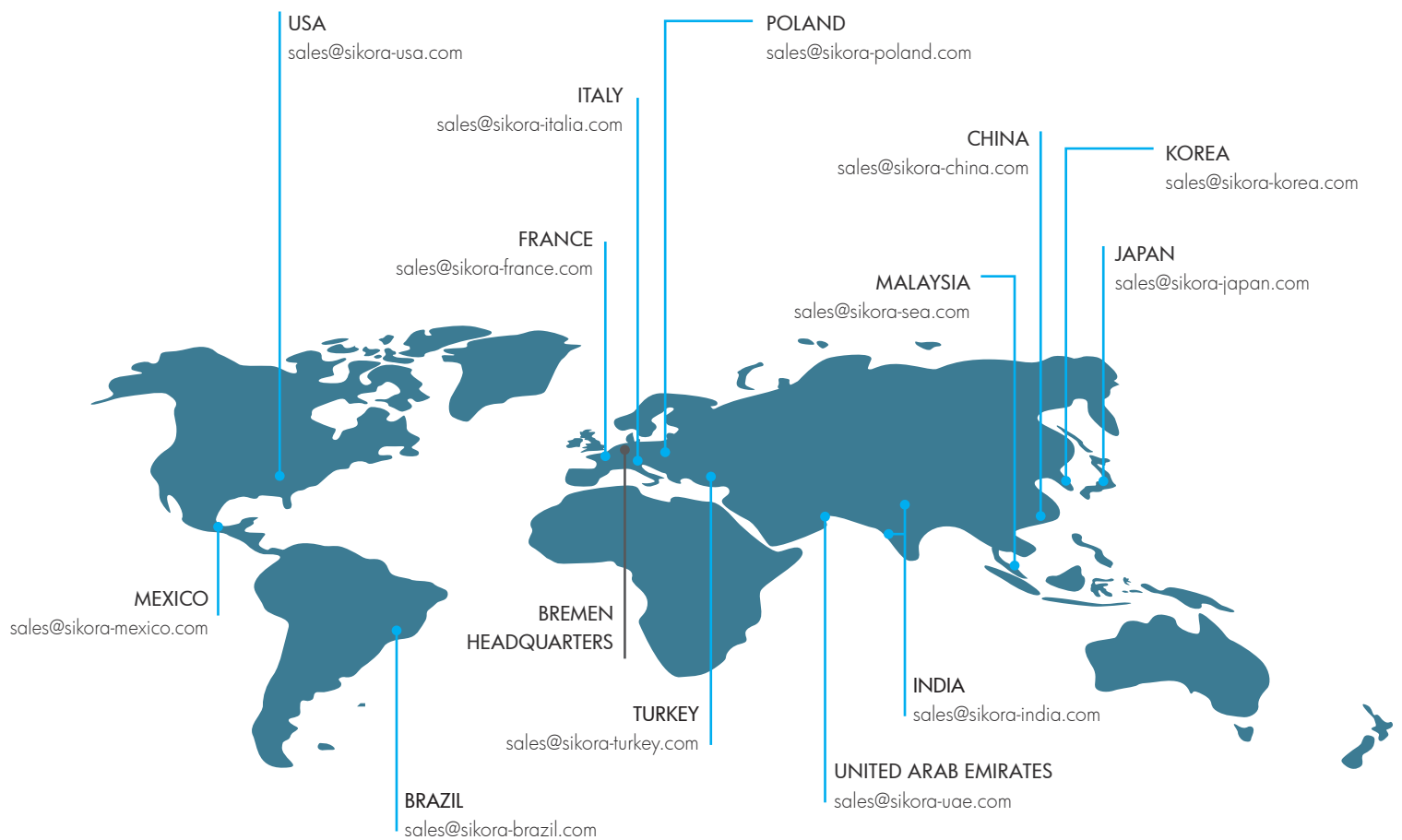
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