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COVER PHOTO: SHUTTERSTOCK

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Aliaxis declines in first half of year



IMAGE: ALIAXIS

Vanlancker: "We delivered good operating profit, despite softer market conditions"

Aliaxis, the Belgium-based manufacturer of pipes and fittings, claimed a "resilient" performance in the first half of the year.

The company reported sales of €2billion (US\$2.6bn) for the period, a decrease of around 5% against H1 2023. At the same time, net profit fell to around €123m (US\$136m), down 44%.

"We continue to deliver good operating profitability, despite softer market

conditions," said Thierry Vanlancker, CEO of Aliaxis.

In the Americas, revenue fell by 5% and profitability was down by nearly 12%. Profit in North America was affected by fixed cost investments, especially a new ERP system. Latin America saw increased volumes but lower prices. Revenue in EMEA fell by nearly 8%, and profits fell by around 24% because of fixed cost increases due to

inflation. In Asia, sales crept up by nearly 2% while profitability rose by around 16%. Aliaxis expects market conditions to remain challenging in the second half of the year.

In August 2024, it acquired Johnson Controls' CPVC pipes and fittings division. The business generates an annual revenue of around US\$100m and employs over 100 people.

➤ www.aliaxis.com

Polypipe sales and profits fall

UK-based Genuit, which owns Polypipe, reported a fall in both sales and profits in the first half of the year.

Sales fell to around £272 million (US\$356m), a near-11% fall compared to H1 2023. This led to a pre-tax profit of around £15m (US\$20m) - around half that of the same period in 2023.

The company said the decline was due to lower volumes in a "subdued market".

"We demonstrated continued operating margin improvement in the first half of the year," said Joe Vorih, CEO of Genuit. "As we look to the second half, we anticipate market conditions to remain, offset by continued operational and strategic progress."

Revenues fell in both the sustainable building and water management divisions, by 13% and 11%, respectively. In climate management, sales fell by 7%.

The company closed two UK manufacturing facilities - in Rochdale and Moreton - in the first half of 2024 and will now serve local customers from alternative facilities. Despite the closures, it said there had been no reduction in manufacturing capacity.

In H1 this year, recycled materials accounted for over 51% of all the company's material use, up from 48% in H1 2023. It plans to raise this to 62% by 2025.

➤ www.polypipe.com

Eurocell reports dip in H1 sales

UK-based window profiles manufacturer Eurocell has reported reduced sales but higher profits for the first half of this year.

First-half sales of £176 million (US\$230m) were down 5% compared to the same period last year. Pre-tax profit for the period was £7.6m (US\$10m), more than double that of the same period in 2023.

"Trading conditions continue to be tough in 2024," said Darren Waters, CEO of Eurocell. "Customers remain cautious, resulting in lower investment in home improvements and subdued activity in residential construction."

Profile sales fell 95 and volumes by 3%. An overall equipment efficiency of 71% was below the firm's 75% target.

➤ www.eurocell.co.uk

Deceuninck posts higher profits

Belgian profiles maker Deceuninck reported higher profit (EBITDA) in the first half of 2024.

Adjusted EBITDA grew nearly 10% to exceed €65 million (US\$72m) for the period - which the company said was mainly due to a strong performance in Turkey.

The result came despite a near-9% decline in sales

volume - mostly in Europe. This led to sales declining by just over 1% in the period, to around €421m (US\$465m).

Sales in Europe fell by 11% in value, and those in North America by nearly 3% - while those in Turkey and emerging markets rose by nearly 17%.

"Given the general slowdown of the construc-

tion market, we have mixed results over H1," said Francis Van Eeckhout, executive chairman of Deceuninck. "Market sentiment in Europe remained low leading to a decrease in activity mainly in Western Europe."

The company expects slow activity to continue, so will continue to focus on cost reduction.

➤ www.deceuninck.com

Orbia sees extrusion sales fall

Mexican plastics company Orbia saw Q2 revenues fall in all three of its extrusion-related businesses

Pipes manufacturer Wavin reported a 5% dip in sales to US\$665 million, though a slight rise in profit (EBITDA) to US\$74m. The fall in sales was driven by ongoing weak volume activity in parts of Europe and Latin America, it said – as well as by lower resin prices and an “unfavourable product mix”.

Irrigation supplier Netafim saw a 2% decline in sales to US\$284m – due to lower demand in Turkey, the US and India, which was partially offset by higher sales in China, the Middle East and Africa. This led to a 2% fall in profits to US\$39m.

Meanwhile, conduit maker DuraLine saw sales fall by 30% (to US\$236m) due to lower volumes.

➤ www.orbia.com

GF piping division reports decline in interim results

Georg Fischer Piping Systems (GFPS) has seen interim results fall in 2024.

This year, it reported half-year sales of CHF993 million (US\$1.2 billion), nearly 7% lower than the same period last year.

It also reported a profitability (EBIT) of CHF129m (US\$151m) – a fall of around 9%. The dip in results was ascribed to poor weather in Europe causing a “slow start” to the year. However, this was partially offset by projects in Brazil and Indonesia. Currency effects also affected sales by CHF61m, and profit by CHF15m, it said.

The number of employees in the division rose by nearly 3%, to exceed 8,420 people. At the same time, Georg Fischer acquired Swedish pipe maker Uponor in November 2023. Now

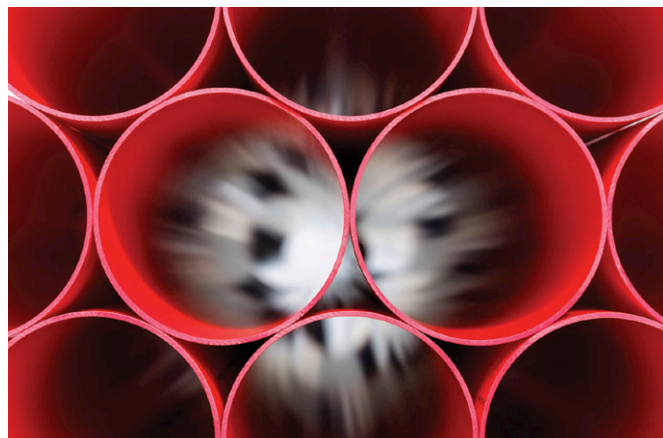


IMAGE: GEORG FISCHER

Georg Fischer's pipes division saw sales decline by 7% in the first half of the year

renamed GF Building Flow Solutions, it contributed CHF561m (US\$658m) in sales and added nearly 3,800 employees. ➤ www.georgfischer.com

renamed GF Building Flow Solutions, it contributed CHF561m (US\$658m) in sales and added nearly 3,800 employees. ➤ www.georgfischer.com

Dyka drags down Tessenderlo

Tessenderlo's industrial solutions division – which includes pipe maker Dyka – reported a decline in the first half of the year.

Sales in the division fell by around 9% to around

€349 million (US\$385m) while profitability (adjusted EBITDA) fell by 31% to around €36m (US\$40m), it added.

Dyka's sales fell due to lower construction demand,

it said – and was the main reason for the fall in profitability of the division, due mainly to “less favourable market circumstances”, it said.

➤ www.tessenderlo.com

Wienerberger: flat sales despite solid first half



Scheuch: “Wienerberger delivered a solid first half”

Wienerberger of Austria reported flat sales and a drop in profits in the first half of the year.

It reported sales of €2.2 billion (US\$2.4bn), almost identical to the same period in 2023. At the same time, EBITDA fell 24% to €341 million (US\$376m). The company said weaker market demand forced it

to manage costs.

“We delivered a solid half-year performance and is well-placed for market recovery in the future,” said Heimo Scheuch, chairman of Wienerberger.

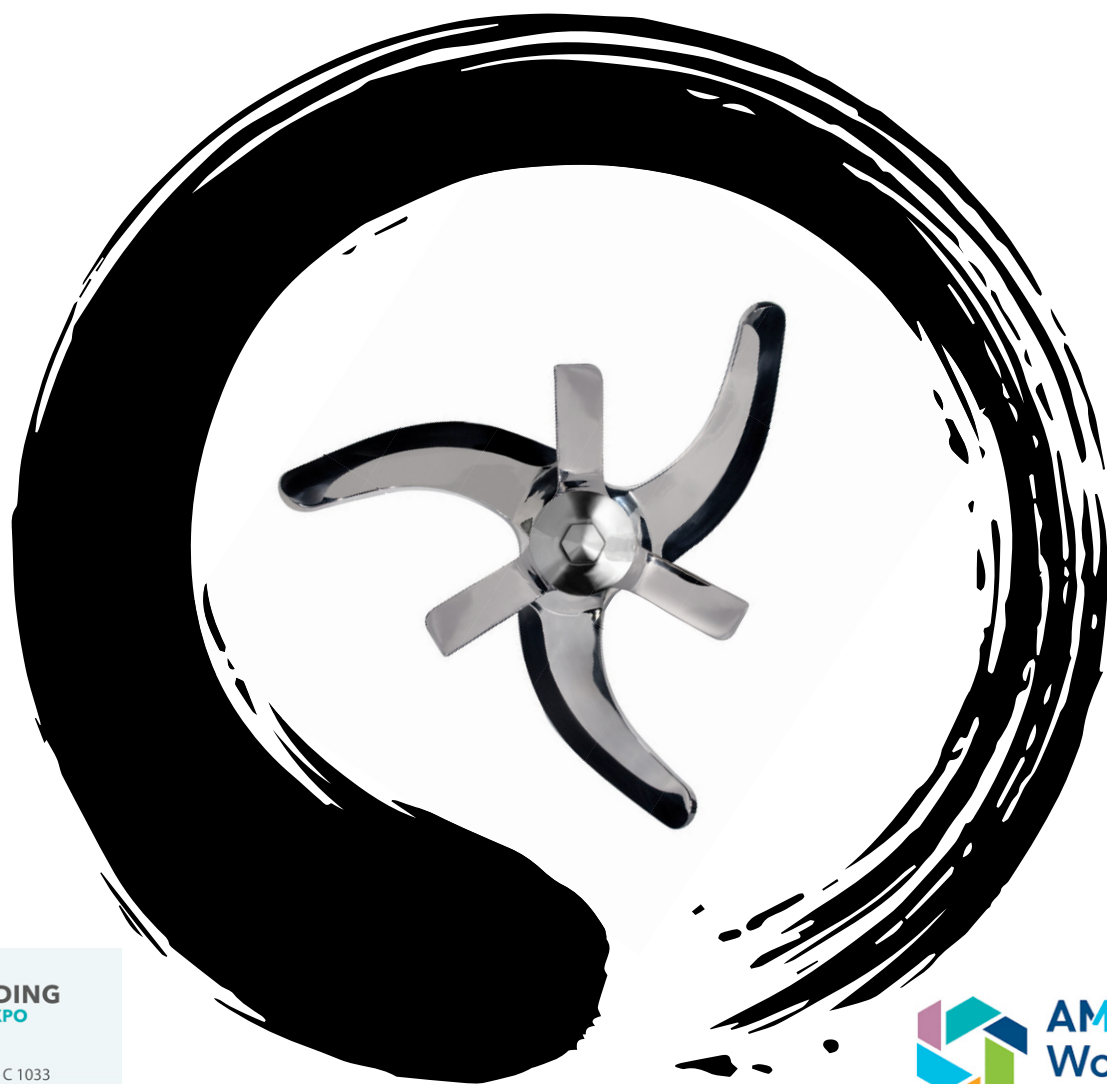
Sales in Western Europe rose 6% to around €1.2bn (US\$1.3bn), though profits fell nearly 20%. The fall in demand was due mainly to

low construction activity in several countries. Sales in Eastern Europe fell 6% to €575m (US\$635m), due mainly to a downturn in new residential housing. Sales in North America fell 6%, with profits down similarly, due partly to uncertainty over the US election and high interest rates.

➤ www.wienerberger.com

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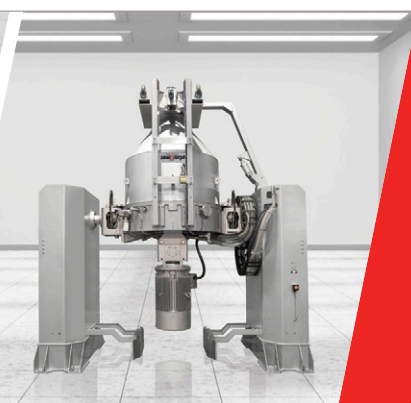


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US plastic machine sales decline in second quarter

Sales of plastics processing machinery declined in the second quarter of this year.

The Plastics Industry Association's Committee on Equipment Statistics (CES) said that machinery sales were nearly US\$225 million for the quarter – a 36% fall on the same period in 2023. At the same time, it was around 15% lower than the first quarter of this year.

Sales of single-screw extruders fell nearly 29% year-on-year, but were about 3% higher than the previous quarter. Twin-screw extruder sales fell 25% year-on-year and around 24% on the previous

quarter. For comparison, sales of injection moulding machines were down 38% year-on-year, and around 16% compared to the previous quarter.

"The second consecutive quarter of decline is not due to a pullback in plastics demand," said Perc Pineda, chief economist at the association. "There is no indication that the baseline demand for plastic products has deteriorated."

He said manufacturers' finished goods inventories of plastics and rubber products were estimated at US\$15.0 billion in June this year, compared to

US\$15.2bn in June 2023, indicating slow inventory adjustments.

"While the rate of decline in the second quarter was significantly less than in the first quarter, the industry continues to deal with higher interest rates, and that's weighing on capital expenditure plans," said Pineda.

The latest CES quarterly survey showed that almost 80% of respondents anticipate steady or improved market conditions over the next 12 months. At the same time, 40% reported an increase in quoting activity – lower than the 49% in the previous quarter's survey.

There was also a fall in exports. In Q2 2024, total exports of plastics equipment declined by nearly 15% (to US\$341m) compared to the previous quarter, while imports fell nearly 4% (to around US\$857m) in the same period. Just over half of all exports went to Mexico and Canada.

➤ www.plasticsindustry.org

M&As on the rise in plastics

Mergers and acquisitions in plastics have risen slightly in the first half of this year.

Investment firm PMCF says it recorded 180 plastics-related M&A deals to the end of June 2024 – slightly ahead of the same period in 2023. It also recorded 30 deals in June alone.

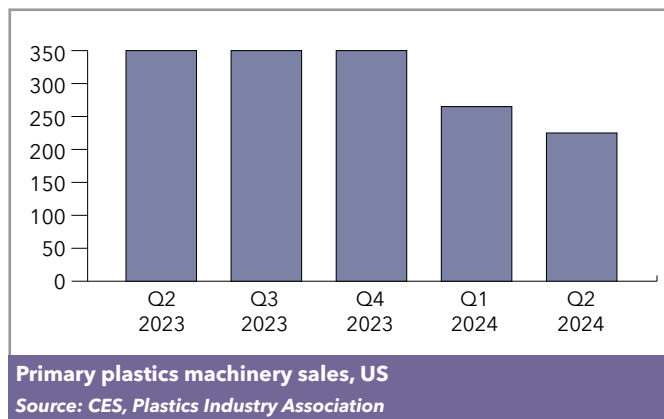
The increase was driven by increased activity from strategic buyers, said the company.

Despite this slight increase, activity will need to rise substantially to match the 205 deals recorded in the second half of 2023, said PMCF.

"Overall, transaction activity has fallen from levels witnessed in the second half of last year as company performance has stagnated and interest rates remain elevated," it added.

The majority of the deals were classed as 'industrial', said PMCF.

➤ www.pmcfc.com



Euromap 82 focuses on dosing and moulds

Euromap, the organisation that represents European plastics and rubber machinery manufacturers, is drafting new specifications for two types of peripheral device – dosing systems and moulds.

It forms part of the Euromap 82 specification series for peripheral devices – based on the global production language OPC UA – being developed by the 'plastics and rubber

machinery' Joint Working Group.

The specification will help to standardise data exchange between machinery, helping to raise production efficiency and quality, says Euromap.

The two latest drafts form Parts 4 and 5 of the series. As with earlier parts, the specifications cover parameters for identification and configuration, automatic login of the machine user to peripheral devices as well as

the monitoring and control of process values. The Joint Working Group has already begun work on Part 6 – for granulate dryer devices.

The draft is available for public inspection on Euromap's website. The organisation encourages companies to participate in the working group – and invites comments on the draft before the end of October.

➤ www.euromap.org

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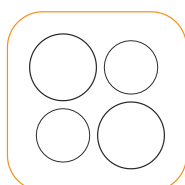
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Trex sees 50% rise in first-half profits

US decking manufacturer Trex has reported a 26% rise in sales for the first half of the year – and a near 50% increases in profit for the first half of the year.

The company, which makes wood-plastic composite (WPC) products, reported sales of US\$750 million for the period. Net profit for the period exceeded US\$176m – a 49% improvement on the corresponding period in 2023.

The company said sales of its premium products were strong, while those of its lower-priced products

were “below expectations”.

“In the second quarter we continued to move forward with new product launches,” said Bryan Fairbanks, president and CEO of Trex.

These included new railing products, and plans to expand colour options for its decking.

“Looking ahead to the second half of 2024, we see encouraging data related to our mid-market and premium product sales,” he added.

The company expects full year sales to be in range of \$1.13-1.15billion.

➤ www.trex.com



Lawsuit claims PVC pipe makers fixed prices in US

An electrical contractor in the US has filed a lawsuit alleging that PVC pipe manufacturers worked together to fix prices.

The lawsuit, filed by George Bavalak, alleges that PVC pipe and conduit makers including Atkore, Westlake, JM Eagle and IPEX began engaging in an “antitrust conspiracy” in 2021 – exploiting volatility caused by the Covid pandemic to “fix, raise, maintain and stabilise” the price of PVC water pipes and electrical conduit in the US.

The suit alleges that the behaviour

was co-ordinated through a newsletter that tracks information on the PVC pipe market. The newsletter itself, called OPIS, is also named in the suit as it “served as a sounding board between defendants, allowing them to communicate their intentions on pricing”.

Bavalak is seeking class action status for others that may have overpaid for PVC pipe – such as municipal authorities and other contractors.

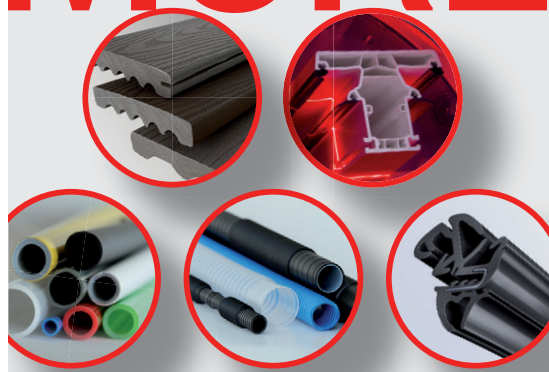
The plaintiff has demanded a jury trial. The case begins in October.

www.pipeandprofile.com



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Internal strength: recent advances in pressure pipe

Recent pressure pipe developments include a geothermal project, a system that transfers carbon dioxide, a data centre cooling system for and several replacements for iron pipework

Utilities such as gas and water – as well as fluids in industries such as offshore – must be transported quickly and safely, which often necessitates the use of pressure pipe. However, some emerging industries are also turning to pressure pipe for critical applications.

Agru of Austria has supplied a PE 100-RC piping system to a new data centre in Poland.

The centre, owned by Data4Poland, uses the piping as part of its cooling water system.

"The ever-increasing dependence on digital services requires server rooms that can withstand the highest loads," said Agru. "Reliable cooling of the data servers is particularly critical here."

The heart of the cooling system is a piping system that connects the heat exchangers to the server rooms. The pipelines were designed to operate with water at 18-23°C and a pressure of 2.5-3 bar.

Agru supplied the PE 100-RC pipes and fittings for the cooling system. The pipes have diameters of 75-280mm and were joined using butt welding and electrofusion fittings.

PE 100-RC is characterised by special crack resistance and long-term reliability. This is an advantage for exposed pipe systems, as the material increases operational safety, especially for welded joints, says Agru. Its high UV resistance also makes it suitable for outdoor installation, while the material can also cope with temperatures below freezing. It can also absorb water hammer and vibrations.

Because it also provides basic insulation for the piping system, less insulation material is needed.

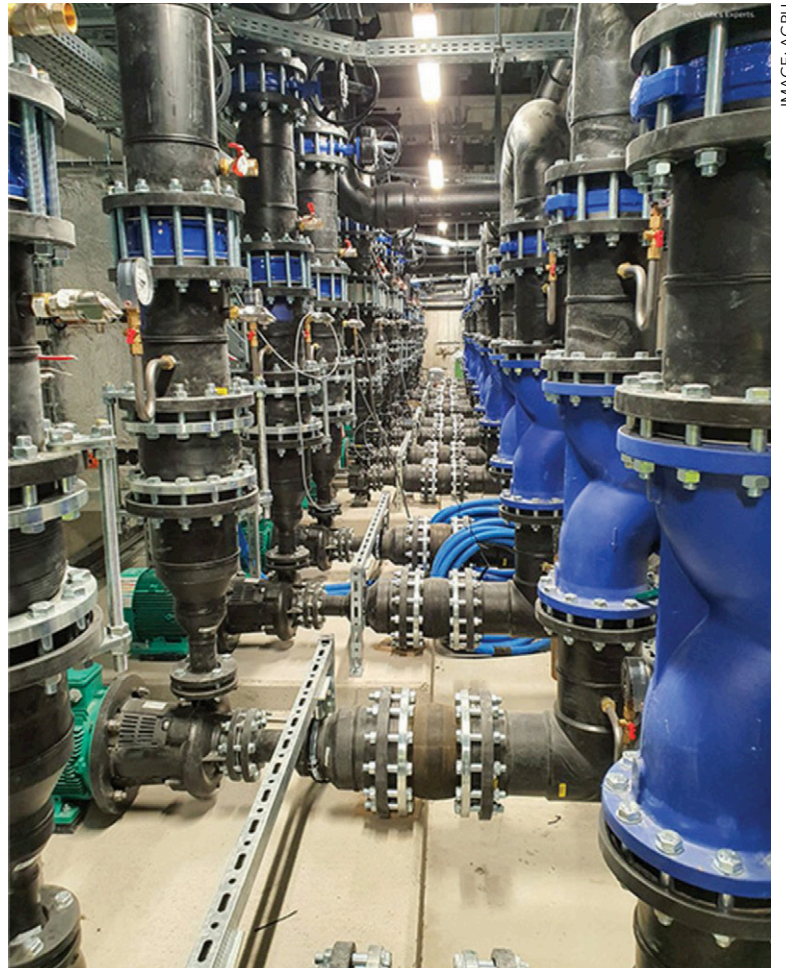


IMAGE: AGRU

Because of the lower weight of the plastic pipe, the pipe clamps are also subject to less stress.

During the construction process, an external auditing company supervised the work to ensure that the high technical standards of the products supplied were maintained during installation.

Pipe rehabilitation

To ensure clean drinking water for the 14,000 inhabitants of Hundvåg district in Norway, the main water supply pipe from nearby Stavanger had to be rehabilitated.

The municipality chose the diffusion-tight **Egeplast** SLA barrier pipe – which was originally to be laid through an existing cast iron pipe, but ended up in an open trench installation.

The project was challenging due to difficult ground conditions, which were characterised by

Main image:
Agru PE 100-RC pipes play a critical role in cooling servers at a new data centre in Poland

Right: Strohm has won its "largest commercial award" to supply TCP flowlines to TotalEnergies EP Brasil

the remains of walls and buildings. For this reason, the original construction plan of pipe-bursting through the existing 450mm cast iron pipe had to be converted to an open trench method.

The Egeplast pipe was chosen because diffusion-tight pipes are required by the municipality for projects below certain height curves – and has already been used successfully in various projects. In this case, the contractor used around 700m of pipe with a 560mm outside diameter and SDR 11 in 13.4 m sticks.

To ensure a smooth process and optimal installation, there was close cooperation between Egeplast and the contractor.

"The constant exchange and cooperation in all project phases give a feeling of security in the joint projects," said Kine Homleid Johansen, project manager for the municipality of Stavanger.

Steg Entreprenør, the construction company that supplied and welded the pipes, has also worked with Egeplast on a number of burst lining projects in Norway and Sweden.

Sondre Dammen, head of the NoDig department at Steg Entreprenør, added: "We are always satisfied with Egeplast's service and the flexibility with which quick solutions are always found."

Carbon transfer

Strohm, which manufactures thermoplastic composite pipe (TCP), has added carbon dioxide transfer to its portfolio.

Right: Egeplast SLA pipe replaced a cast iron pipe to bring fresh water to a community in Norway



IMAGE: EGEPLAST



IMAGE: STROHM

The company has qualified its first product in the area, following several years of development and testing. By combining polyvinylidene fluoride (PVDF) and carbon fibre, the company can offer jumpers and flowlines for use in harsh environment carbon capture and storage (CCS) applications.

With the addition the PVDF product, Strohm says it has completed its materials portfolio for CCS. The pipe is suitable for injecting CO₂ offshore, both in depleted gas fields and aquifers, says Strohm. PVDF has a long track-record in oil and gas, with a high chemical resistance and temperature capability.

"It has taken more than 15 years to be able to offer a TCP product based on carbon fibre and PVDF – a momentous breakthrough for us," said Martin van Onna, CEO of Strohm.

Separate to this, Strohm recently won a contract to supply TCP flowlines to TotalEnergies EP Brasil. It says this is its largest commercial award for pipe supply in its history – and a first project in the Brazilian pre-salt.

Due for installation in 2026 at a water depth of 2,200 meters, the solution has been chosen for the first time for flowlines installed in ultra-deep water, says Strohm.

The system will be used for an offshore field located in the Santos Basin in the Brazilian pre-salt area.

"This marks a major step change in the offshore industry," said Renato Bastos, vice president of Strohm in Brazil.

With an inner diameter of 6in and a 600-bar design pressure, the TCP flowline will be used for gas injection in water depths of 2,200 meters. It will be installed using a standard pipelay support (PLSV) vessel, as are operating currently in Brazil. ➤

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Right: Several PPE award winners were honoured for pressure pipe projects



IMAGE: PPI

Pipe comparison

US-based **Plastics Pipe Institute** (PPI) has published a new document providing a technical basis for comparing PE 100-RC and PE4710 pressure pipe.

The document, TN-68, provides a perspective on the slow crack growth (SCG) resistance requirements for the PE 100-RC designation in comparison with the North American PE4710 designation.

"The PE 100-RC concept has been around since 2009," according to Patrick Vibien, technical director of PPI. "However, there is a lack of clarity to the implications of the designation and a lack of consensus on whether a comparable designation has value for the North American industry given the already elevated SCG resistance requirements of PE4710."

Development of the PE 100-RC designation was not due to documented performance issues with PE 100, he said. The grade designation has been promoted internationally by the PE 100+ Association and is now being introduced into ISO and CEN standards, he added.

"Although PE compounds are fairly similar, the test methods and requirements for assessing the performance of the designations differ significantly," he said.

"Our document goes into detail about this, and provides a comparison chart and other data that can be helpful."

Pressure projects

In addition, several high-pressure projects were successful at this year's PPI awards. In the building and construction category, the award went to **Versaprofiles** of Canada, for a geothermal heating and cooling system for the 1 Java Street project – the largest mixed-use development in New York State to incorporate a ground source geothermal system for heating and cooling. When completed

in 2025, there will be more than 800 residential apartments plus retail spaces in the block in Brooklyn. The geothermal system included 321 vertical boreholes drilled 499 feet into the ground, spaced 15ft apart with a 1.25in diameter high-density polyethylene (HDPE) PE4710 pipe inserted into each.

A total of 326,000ft was used in the boreholes with another 31,000ft of HDPE pipe in various diameters used for lateral distribution.

Elsewhere, a corroded steel gas pipeline at Baton Rouge Zoo was replaced by 1,000 feet of PA12 pipe – which could handle pressures of up to 250psi. Because of its strength and flexibility, the pipe could be installed underground using horizontal directional drilling (HDD), which reduced costs and enhanced safety during both installation and operation. The manufacturer of the PA12 material, **Evonik**, won the energy piping systems division award.

And in New Orleans, city authorities launched a huge project to replace its 100-year-old water transmission mains with a modern piping system. Using CompressionFit trenchless technology and HDPE pipe from Agru Americas, the local utility estimated an overall 25% savings compared with other methods.

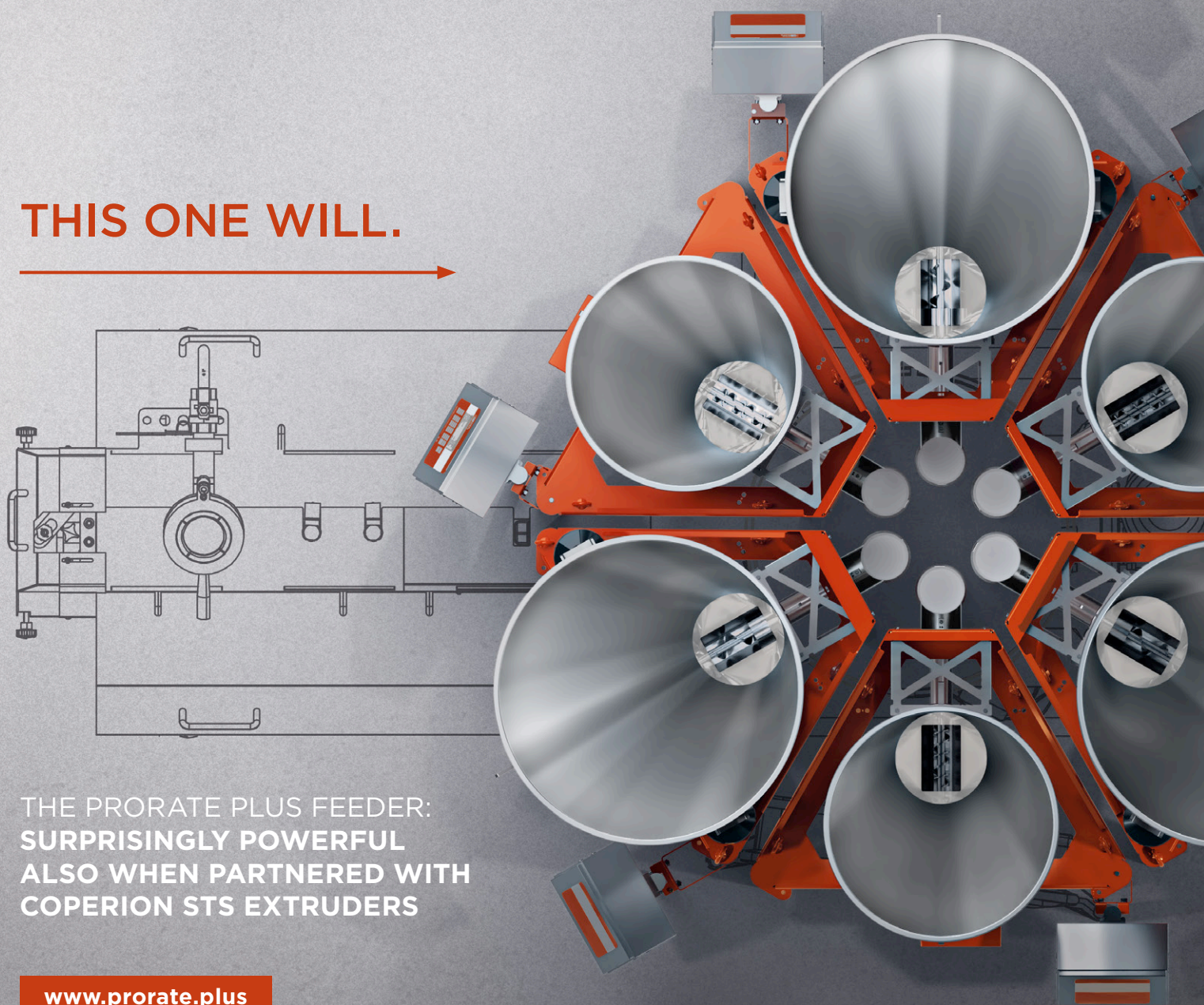
The project called for 4,400ft of 48in pipe, installed by Murphy Pipeline Contractors. Especially important to this section of New Orleans was the pipe's corrosion resistance, flexibility, durability, and lower seismic susceptibility than other piping materials such as concrete or steel.

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PREVIEW THE AGENDA AND BOOK YOUR PLACE

Repeat performance: latest in recycling and granulators

Advances in recycling and granulators include new models for medical applications, grinders with digital control, and a central system that adds predictive maintenance capabilities

With companies all along the supply chain under pressure to cut their carbon footprint, it makes sense that plastics extruders are incorporating more recycling and regranulation into their operations.

The latest Smart Granulator control from **Conair**, called SG2, adds predictive maintenance to larger Viper granulators used in central size-reduction systems or in-line applications that process continuous, high volumes of scrap.

The SG2 control made its US debut on a Conair Viper 1736 granulator at the recent NPE exhibition. Like its predecessor, the SG1 – offered on Viper 12, 17 and 23 Series granulators – the optional SG2 control shares Conair's common control interface, housed in a 7in colour touchscreen HMI. It also shares a new PLC platform with power cabinet wiring that simplifies connection and sequential control of shredders, conveyors, evacuation systems and other equipment commonly used in central and in-line size-reduction systems.

"The new capabilities of the SG2 control open the door to exacting measurement of the factors that drive granulator maintenance, whether it's knife changes, bearing lubrication, or screen replacement," said Dave Miller, general manager of size reduction at Conair.

In operation, the SG2 gathers performance data from sensors within the granulator – rotor RPM, motor load/amperage, cutting chamber and screen temperatures, and vibration levels. Then, it compares the data to established 'good' data reflecting desired equipment performance. If the live data is outside the desirable range, the SG2 alerts operators.

It uses alarms for situations that require immediate attention (such as a low RPM or high amp alarm indicating a possible material jam), or a combination of maintenance trackers, (such as knife status display) trend-line displays, or on-screen reminders

to indicate upcoming maintenance needs.

When linked to SmartServices – Conair's cloud-based Industry 4.0 platform – Miller says the SG2 control in the Viper granulator can provide trending data about equipment health to the SmartServices dashboard, and also send maintenance reminders to the proper personnel. "It means you're never running with dull knives, worn bearings, or overloaded motors – all problems that can cause future unplanned downtime if not addressed," he said.

Digital control

Hellweg Maschinenbau has developed a number of digitally controlled grinders that claim to offer efficient, energy-saving plastics recycling.

These include: the MDSi 340/150 Smart Control machine-side grinder with fill level monitoring; MDSi 600/300 Smart Control Plus central grinder; and MDSGi 1500/600 – one of a new series of wet grinders with forced feed that have low power consumption.



IMAGE: HERBOLD MECKESHEIM

Main image:
Various sizes
of rotor from
Herbold
Meckesheim
granulators will
be seen at
Fakuma



Conair's SG2 Smart Granulator control adds predictive maintenance to larger Viper models



IMAGE: CONAIR

Hellweg's 300 series central grinders combine a compact design with high performance. Thanks to the sturdy machine housing and the high moment of inertia of the massive, solid rotor they enable powerful grinding of a variety of parts, including pipes and profiles, thick-walled mouldings and - when using the special BR rotor - single-stage shredding of solid lumps from production start-ups.

The MDSi 600/300 Smart Control Plus version includes power consumption analysis to optimise economy and automated lubrication with Bluetooth monitoring to minimise maintenance effort.

Each system features Hellweg's own digital Smart Control System which captures parameters such as power consumption, motor speed and bearing temperatures, as well as blade, screen and V-belt status. Because the control system can continuously optimise the relationship between motor load and throughput, it ensures economical operation while requiring little input from operators.

Smart Control is generally available for all models and sizes of Hellweg system, starting from the 150 series machine-side grinders for granulating small parts and sprues up to the 600 series heavy duty grinders designed for the toughest applications.

Redesigned pulveriser

Neue Herbold has renewed its ZM 800 Pulverizer with a number of new features.

One is the stream technique optimisation of the machinery housing. In the past, machines of this type were made with a round housing on a platform - but the new housing passage is supplied in a curved design. The background for the modification is that the material's angular momen-

tum is used for the discharge, since the material is pre-accelerated for the later air conveyance. The modification helps to raise throughput rates, while energy consumption is unchanged.

Design and ergonomics were also important factors in the redesign. The standard machine extensions - such as vibro-feeder or mounting bracket for the vacuum feeder - blend into one compact machine concept with clear lines. Meanwhile, all parts are easily accessible.

Even the door lock has been optimised, and now operates more efficiently and with less space requirements. Cables, connections and sensors are gathered in a central processing unit. Control unit of water injection - through valves and sensors - is now placed in an accessible housing that is dust- and splash-proof.

Size reduction

Weima presented a number of systems - including granulators and shredders - at this year's NPE show in the US.

Its size reduction machinery included its WLK 10, WLK 800 F+, and WKS 2200 single-shaft shredders. These were seen on two booths - in the main hall, and in the show's Recycling Zone.

The WLK 10 single-shaft shredder stands is a versatile solution for processing a wide range of plastic materials. With a robust design and V-rotor technology, it efficiently tackles plastic lumps, pipes, automotive parts and many other components.

Equipped with a 1000mm rotor and a lift-up screen basket for easy maintenance, the WLK 10 offers more convenience and accessibility for operators. Its adaptable configurations ensure optimal performance tailored to each application, while its integration into a two-stage solution further enhances its versatility and efficiency, says Weima.

Medical granulation

CMG has launched a new series of small granulators that can be used in the medical industry.

The new G17-MED series are several and all contribute to obtaining the highest degree of precision and cleanliness, regrind quality (homogeneous particle dimensions and absence of dust), efficiency of operation.

The new granulators are applicable to injection moulding and of blow moulding - but in the ET1 or ET2 configuration are suitable for extrusion.

The new series is designed to obtain homogeneous regrind shape and dimensions, along with little to no presence of dust. One benefit of the new line is the ability to produce regrind with very small dimensions - which has no adverse impact on



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IMAGE: HELLWEG



Above:
Hellweg has developed a number of digitally controlled grinders

the quality of the finished medical product. Small capacity systems, including injection moulding machines and extruders, are equipped with small diameter plastification screws that cannot process granules with dimensions exceeding those of virgin granules. The G17-MED granulators produce regrind that is dimensionally comparable to the virgin pellet, says CMG.

Entire expertise

At Fakuma this year, **Coperion** and **Herbold Meckesheim** will show their expertise in entire systems through virtual animation – including systems for recycling plastic. The processes involved can be experienced digitally with the aid of simulation.

Rotors from Herbold Meckesheim granulators will be seen in various sizes and for many applications. The cutting geometry is the main reason for the high efficiency the rotors, says the company.

Along with individual components, Coperion and Herbold Meckesheim deliver entire systems for plastics recycling. From mechanical processing – shredding, washing, separating, drying and agglomerating of plastics – to bulk material handling as well as feeding and extrusion all the way to compounding and pelletising, such plants cover the entire plastics reclamation process chain.

Customers can test a wide variety of plastic recycling processes and technologies under actual production conditions – in Coperion and Herbold Meckesheim's fully equipped test centres – before they invest. Herbold's 800m² facility in Meckesheim, Germany, includes a complete washing line for cold and hot washing as well as many size reduction solutions including shredders, granulators, pulverisers and plastic compactors for densification.

In 2023, Coperion opened a recycling innovation centre in Weingarten, Germany with individually configurable recycling plants – allowing recycle to be conveyed, fed, extruded, compounded, pelletised and deodorised.

Continuous throughput

Getecha has developed several central granulators for the continuous throughput of medium to large volumes of plastic waste.

Designed for comminution capacities of up to 1,000 kg/h, the RS 45090 hopper granulator can grind both missing parts and plates and pipes. For this purpose, it has several bypass hoppers as well as a 45kW motor that drives five rows of mounted rotor blades (rotor diameter 450mm) against two stationary blades. The screen hole diameter is 8mm as standard but can be adapted to different material properties.

The front feed hopper of the RS 45090 can be fed manually or is equipped by Getecha with a belt conveyor as part of the process automation. For ergonomic reasons, the hopper and granulator body are double-walled with integrated sound insulation.

Thanks to the drive being moved upwards and into the housing, the mill is compact despite its size and takes up relatively little space. The opening mechanism for the hopper and the screen carriage can be operated hydraulically, which simplifies cleaning and maintenance.

It also offers smaller central granulators. The RS 30040 is designed for a throughput of up to 360 kg/h with a 22kW drive. It operates with a closed three-blade variation rotor with a diameter of 300mm, in which all components in contact with the product are made of stainless steel. The cutting length here is 410mm.

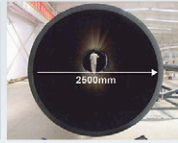
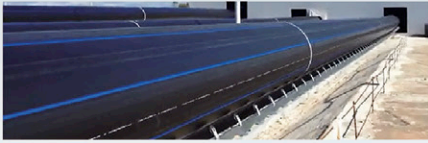
In addition, its RS 2404 can be moved on rollers and has a 5.5kW drive with an hourly throughput of up to 160kg. This small version of a central granulator has an open three-blade rotor with attached blades and a diameter of 240mm. The hopper granulator achieves a cutting length of 452mm, says Getecha.

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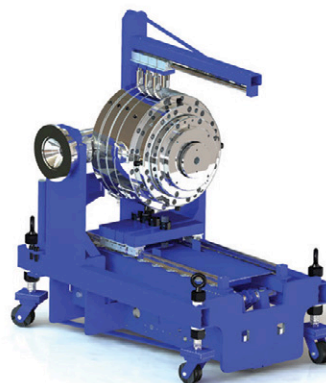
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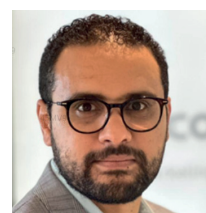
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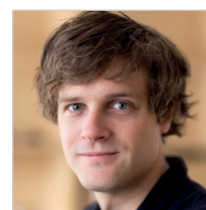
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The PVC industry in Europe and North America is acting to address regulatory concerns as well as aiming to increase post-consumer recycling of PVC.
Jennifer Markarian reports

IMAGE: RETURN POLYMERS

PVC makes progress despite challenges

Although recycling of post-industrial PVC is well established, post-consumer recycling (PCR) has been on a smaller scale until more recently. The industry has recognised the need for broader recycling of post-consumer materials and is working to solve challenges, such as collection and sorting, to widen the scope. Durable PVC goods, such as vinyl siding, roofing, piping, flooring and other long-lasting products eventually reach end of life. There is also a drive to recycle single-use PVC parts, such as those in healthcare.

The European PVC industry (including the EU-27, the UK, Norway and Switzerland) has a long-term commitment to sustainability called **VinylPlus**. This group has been active for more than 20 years in reducing the environmental impact of PVC, and members are currently working towards the VinylPlus 2030 commitment. A big piece of this commitment is to move the European PVC value chain towards circularity by increasing the volume of PVC that is recycled into new products to 1m tonnes per year by 2030.

European decline

According to VinylPlus, recycling rates of PVC in Europe fell by more than 9% in 2023 – the latest for which full-year figures are available.

For the year as a whole, it reported that nearly 738,000 tonnes of PVC waste were recycled in the EU-27, plus Norway, Switzerland and the UK – a fall of 9.3%. This represents around 24% of all PVC waste generated in Europe.

Of the total, 62% was pre-consumer waste – where factories reprocess their own waste internally – and 38% was post-consumer waste (where PVC is collected after use). In 2023, pre-consumer recycling fell 10%, while post-consumer recycling fell by around 7%.

Comparisons are hard to make because product types were reclassified between 2022 and 2023.

Recycling of ‘flexibles’ – including ‘coated fabrics’ and ‘flooring’ – appeared to decline by around 14% in 2023. Recycling of ‘rigid film’ was stable at around 20,000 tonnes.

VinylPlus said reasons for the decrease were:

Main image:
Scrap PVC
collected by
Return
Polymers from
its customers

Right:
Recycling of PVC in Europe fell more than 9% in 2023, to around 738,000 tonnes, says VinylPlus

competitive prices of virgin material, including imports; a downturn in building and construction; and the impact of European regulations on legacy additives.

Recycling and converting also declined across Europe, for both pre-consumer recycling – where lower production reduced the amount of waste available – and post-consumer recycling, due to a decline in the construction industry. The flooring and pipes sectors registered the largest decline, especially in pre-consumer waste recycling.

Demand for recycled PVC (rPVC) fell more than 12% compared to previous year, said VinylPlus. Registered uptake of rPVC from converters was around 470,000 tonnes in 2023, a 16% fall.

“High inflation impacted the construction sector, putting recyclers in difficulty and reducing demand for recyclates in the EU,” said Karl-Martin Schellerer, chairman of VinylPlus. “In addition, the recycling system continues to be under scrutiny from regulators.”

Legacy additives

VinylPlus is also working towards solving the challenge of so-called legacy additives – additives contained in end-of-life PVC products that are now restricted by regulation in the EU. PVC uses a range of additives, and formulations have changed over the years as environmental and health concerns were raised for certain chemicals. In Europe, one of the legacy additives in PVC is lead-based stabilisers that may be found in PVC products manufactured prior to 2015 (when the European PVC industry completed phasing them out). The potential presence of lead in recycled PVC has been a subject of discussion, and while lead and its compounds are restricted under Reach, certain exemptions regarding application and amount currently allow for continued recycling.

Some orthophthalate plasticisers used in flexible PVC have been restricted in the EU because of their classification (as Repr. 1B, toxic to reproduction).

In November 2023, the European Chemicals Agency (ECHA) completed an **investigation** into 63 PVC additives and PVC resin, as requested by the European Commission. Although the analysis found that risks from PVC resin to workers and the environment are adequately controlled, ECHA suggested that regulatory action would be needed for technologies to minimise PVC microparticle emissions at recycling facilities and landfills. ECHA also suggested that regulatory action would be needed for certain orthophthalate plasticisers, certain heat-stabilising organotin, and to reduce emissions of flame retardants. The investigation will



next be assessed by the Commission to decide whether ECHA will prepare a Reach restriction proposal. VinylPlus, which had submitted evidence to ECHA during the investigation, questioned these conclusions, but said it was committed to providing information as needed.

PCR collection

In the US, legacy additives are not the same concern as in Europe; challenges for PVC recycling here are about facilitating collection and reuse.

A 2022 survey of PVC recyclers in the US and Canada found that the amount of recycled PVC has increased by 17%, to 1.3bn lbs, since 2019, the **Vinyl Institute (VI)** reports. This growth was due to an increase in post-industrial PVC recycling, but post-consumer volumes decreased over that period. The industry, however, has recently been working to help build up collection capacity of PCR PVC.

“Matching supply and demand to provide a consistent stream of material that meets customer needs in a cost-effective way is the biggest challenge facing recycling in general. It is a big challenge that will require significant investments from the entire value chain,” said Jay Thomas, vice-president of sustainability at the VI and executive director of the vinyl sustainability council.

Vinyl siding

The US **Vinyl Siding Institute (VSI)** has received Viability grants from the VI for its **Revitalize Recycling Collaborative**, which seeks to grow the recycling of PCR rigid vinyl products. VSI ran two small-scale pilot programmes in 2021 and 2022 that collected residential vinyl siding, and in 2023 a scaled-up programme collected more than 500,000 lbs.

VSI hopes that this next-generation programme can be adapted throughout the US.

“We have an opportunity to collect large volumes of siding from remodeling projects, as the vinyl siding that was installed beginning in the 1950s and ‘60s is reaching its end-of-life,” said Matt Dobson, vice-president of VSI.

IMAGE: VINYLPLUS



Above:
Schellerer: “The [European] recycling system continues to be under scrutiny from regulators”

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Right: Although medical waste is routinely discarded and incinerated, there are several schemes to recycle PVC in hospitals

He says that the biggest barrier to post-consumer recycling is getting value-chain participants to build the infrastructure that is needed to make it happen.

It aims to help bring this barrier down and build momentum by growing membership in the programme, which will bring together recyclers, those who can serve as collection sites and other interested supporters. Its website also provides a way for consumers, contractors, and construction demolition companies to find recycling collection points, which will increase as the programme expands.

Medical recycling

At last year's Medical Tubing event in the USA - organised by **AMI** - Tobias Johnsen, communications manager at PVC Med Alliance, told delegates that PVC accounts for around 27% of all medical polymers in Europe and around 31% of medical tubing - the largest share. He added that a growing number of schemes are collecting and mechanically recycling medical PVC waste.

"PVC is fit for mechanical recycling," he said. "It can withstand 8-10 thermal cycles for rigid PVC and at least four for flexible PVC."

Recycling is aided by the fact that many PVC consumables are single-layer products, he said.

PVC waste can be turned into other durable products for the health sector, such as hospital wall coverings, flooring, training mannequins and rehabilitation equipment, said Johnsen. Countries including Australia, New Zealand, the UK, South Africa, Canada and the US all have schemes that collect and recycled PVC medical waste.

VinylPlus Med, a scheme launched in Belgium in 2022, has a network of 29 hospitals - with 30 more on a waiting list. The scheme is being extended to France and will include collection of products made of flexible PVC (such as tubing and bags) and rigid PVC.

Johnsen also cited a lifecycle analysis (LCA) of



IMAGE: SHUTTERSTOCK

PVC medical tubing in Europe, carried out by Ecovamed, which showed that mechanical recycling reduced carbon dioxide emissions by around 25% compared with incineration.

VinylPlus has also commissioned Aimplas of Spain to study how many thermal cycles PVC medical tubing can withstand without significant degradation. To date, it has run four cycles - with no significant loss of properties such as colour, tensile strength or elastic modulus. Next, it will move to six cycles. A final report will be made this year.

■ The next Medical Tubing and Catheters North America conference is held in Tampa, USA on 29-30 October 2024. For more details, contact Louella Osano (louella.osano@amiplastics.com) on +1 610 478 0800. The next event in Europe takes place on 1-2 April 2025 in Dusseldorf, Germany.

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Recent extruder developments include a new extrusion line to make tapered medical tubing, a high-speed machinery range and a line to make reel support cores using recycled materials

Line producer: latest extruder developments

Extruder developments can encompass a range of areas – from the design of the screw and barrel through the ability to save energy and raise product quality.

Tecnomatic has launched its latest Evo series of extruders with L/D ratios of 37 and 40.

The company says that the series is a “major evolution” in its extruder technology – with an overhauled screw geometry and newly designed spiral feed-bush. The development will help to optimise plasticisation, enhance material homogeneity and raise energy efficiency, says Tecnomatic.

“The Evo series is a significant leap forward, yet maintains the exceptional performance levels our customers expect,” said Massimiliano Vailati, sales director at Tecnomatic. “We’ve developed an extruder that exceeds the capabilities of its predecessors.”

Tecnomatic says it has re-engineered the screw geometry using advanced engineering principles and state-of-the-art materials. This enhances the plasticisation process, for superior melt quality and high-quality extruded products, it says.

In addition, the spiral feed-bush helps to improve the extruder’s overall performance. By regulating material flow into the screw, it ensures consistent, uniform feeding. This improves product homogeneity, reduces output variations and raises

operational efficiency – for less waste and optimised production.

A core objective of the Evo series is to deliver energy savings, which Tecnomatic says is of growing importance. The redesigned components help to reduce operational costs – and environmental footprint, it says.

Recycled cores

Tecnomatic has also teamed up with Italgreen – an artificial grass company – to introduce a new production line to make reel support cores.

The new line reuses scraps from artificial grass production, helping to minimise waste and promote circularity in the manufacturing process. It uses a number of Tecnomatic’s technologies, including its Atlas series 75.30 extruder, anti-humidity volumetric dosing system, Venus 160 die-head and downstream equipment.

The Atlas extruder plays a pivotal role in processing the recycled scraps from the artificial grass production process. The extruder efficiently transforms the reclaimed materials into the raw material needed to produce reel support cores. This reduces the need for virgin raw materials, helping to conserve natural resources and lower overall environmental impact.

Consistency in material properties is essential to

Main image:
Tecnomatic’s
Evo series of
extruders is
now available
with L/D ratios
of 37 and 40

Right:
Tecnomatic
takes scraps
from artificial
grass produc-
tion and uses
an Atlas 75.30
extruder to
make new reel
support cores



IMAGE: TECNOMATIC

produce high-quality reel support cores. To do this, Tecnomatic adds an anti-humidity volumetric dosing system into the line. This accurately measures and regulates the input of recyclate, preventing fluctuations in material properties due to moisture content.

The Venus 160 die-head is also critical, being responsible for shaping the extruded material into the desired core dimensions. The technology precisely controls the core's diameter and thickness, ensuring consistency across the process. In addition, the die-head's versatility allows for the production of various core sizes up to 130mm.

Small addition

Battenfeld-Cincinnati has completed its SolEx NG series of high-speed extruders by launching a new model.

At NPE 2024, it added the SolEx NG 45 to the four existing models in the series – SolEx NG 60, 75, 90 and 120. The range boasts high output rates at low screw speeds, effective melting performance with low melt temperatures and a reduced pressure profile – leading to less wear on machines.

The latest – and smallest – model, like its larger predecessors, has a processing unit consisting of an internally grooved barrel combined with a matching screw geometry. The process technology advantages of this combination ensure a high quality for the extruded, semi-finished product, said the company. When processing HDPE, the extruders also achieve a 25% higher output – and 40% for PP, it added. In addition, it can achieve melt temperatures around 50F lower than that of conventional extruders.

Right:
Battenfeld-
Cincinnati says
its SolEx NG
series have
higher output
and reduced
energy
consumption

Another advantage of the NG's processing unit is reduced energy consumption, which is around 15% lower than the previous SolEx series. Consequently, the series offers advantages both process and energy efficiency advantages, says Battenfeld-Cincinnati.

Medical matters

At the MD&M West show earlier this year, **Davis-Standard** – with partners Conair and Zumbach Electronics – demonstrated the extrusion of tapered medical tubing made from a photoluminescent blend of thermoplastic elastomer.

Virgin Medalist TPE from Teknor and photoluminescent masterbatch are delivered via a blender, which creates the material mix. A TLM tube loader, mounted on the extruder hopper, draws the blended material from the hopper to the feed throat of a Davis-Standard 1in HPE (High Performance) medical extruder. The speed of the extrudate is regulated by a 10in HMI touchscreen control on a Conair Medline 1-12 Puller/Cutter unit.

Rapid changes in tube taper and sizing are managed by 'bump tube' software in the Medline puller control; internal air-pressure changes are delivered by a Zumbach SPV-1 digital airbox.

Faster setup

Bausano says it can speed up the setup of PVC pipe extrusion lines thanks to an innovative pipe head design.

The new pipe head can cover a diameter range of 125-400mm, with low flow rates (around 500 kg/h) – preventing material degradation and excessive dwell times in a balance of volume, flow rate, and production range.

"The great challenge in terms of production

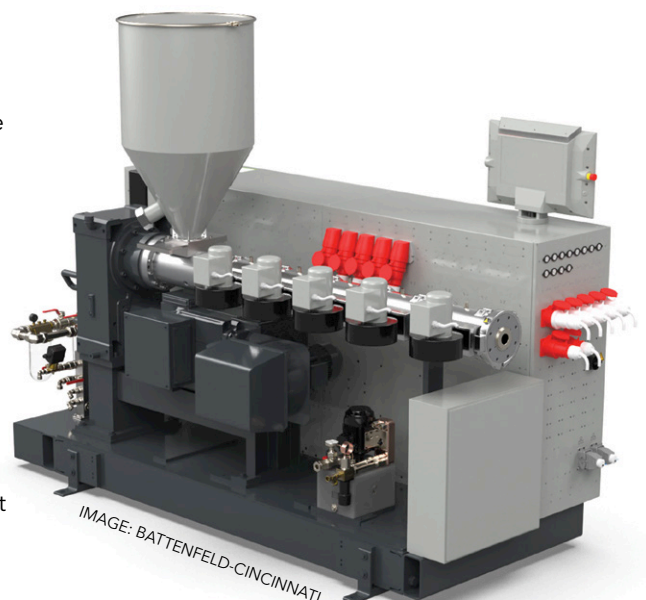


IMAGE: BATTENFELD-CINCINNATI

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Right: Bausano says its new pipe head can speed up the setup of PVC pipe extrusion lines

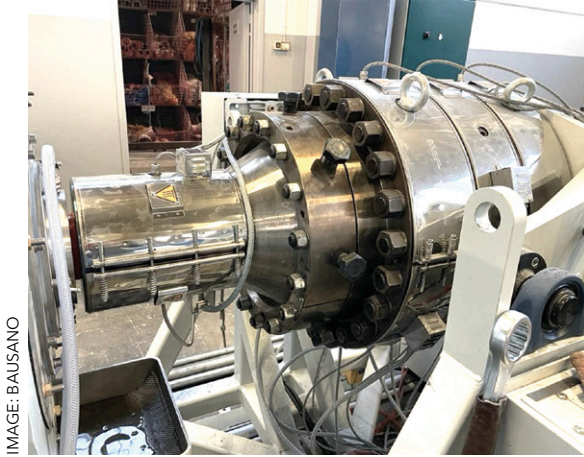


IMAGE: BAUSANO

efficiency – in the face of an increasingly diversified demand and tight delivery times – lies in being able to combine high variety and low production volumes without compromising on quality,” according to Massimiliano Fenili, technical manager at Bausano.

The special head has been combined with an MD 92/30 Nextmover extruder without induction, featuring specially designed screws to process different dry blend formulations – from those containing the highest to those containing the

lowest quantities of additives.

As well as being compact, the solution reduces the number of heads from two to one, which helps to reduce customer investment and mould setup times. In addition, the modular design of some parts of the head makes cleaning and maintenance easier. In terms of design, Bausano worked within very tight parameters in relation to both compression values and polymer dwell times.

Collected information was initially processed using a Brabender plastograph. Starting materials were fed into the chamber, where they were heated and shear stresses were applied between two counter-rotating rotors. During this machining, the design team measured the torque applied to the rotating screws, allowing it to obtain information on the viscosity of the molten material and changes produced by machining, including gelation, branching and degradation.

CLICK ON THE LINKS FOR MORE INFORMATION:

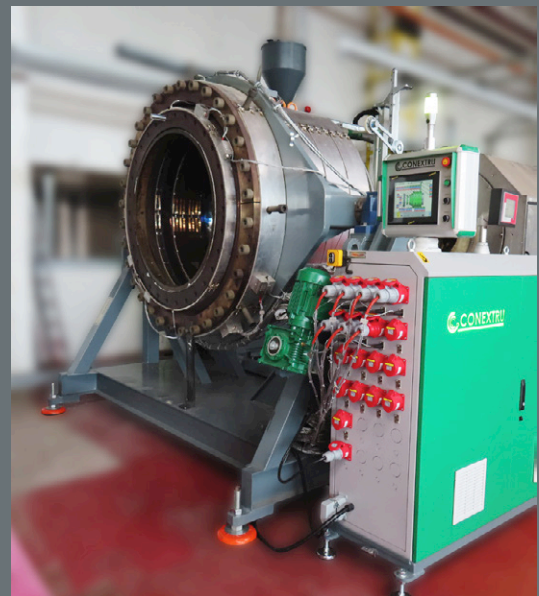
- > www.tecnomaticsrl.net
- > www.battenfeld-cincinnati.com
- > www.davis-standard.com
- > www.bausano.com

CONEXTRU

CONEXTRU produces mono and multilayer cross heads for pipe coating from 10 to 1600mm based on helical and radial spiral technology for any polymer combination



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4 layer cross head for barrier pipes



PO 1200 – 1 layer cross head
up to 1200mm for steel & plastic pipe coating

15 years of excellence

*This year's **Plastics Extrusion World Expo North America** - held in November - showcases important technologies and includes a free two-day conference with leading industry figures*



IMAGE: AMI

Co-located US events show latest extrusion technology

The North American edition of *Plastics Extrusion World Expo* returns to Cleveland, Ohio this November.

The free event - organised by AMI, the publisher of *Pipe & Profile Extrusion* magazine - takes place at the Huntington Convention Centre in Cleveland on 13-14 November. The show is co-located with *Compounding World Expo*, *Plastics Recycling World Expo* and *Polymer Testing World Expo* - giving ticket-holders access to four shows, more than 80 conference speakers, and over 350 exhibitors from across the entire supply chain.

The expo features the largest concentration of plastics extrusion-related exhibits in the US. Exhibitors include manufacturers of extrusion machinery and equipment, as well as suppliers of materials, additives, and related services.

"When we ran these expos in Cleveland last year, they attracted more than 5,100 visitors," said Jenny Amaru, expos business manager at AMI. "This provides a great opportunity to meet and compare suppliers from around the world and

learn from business leaders and technical experts in the conference theatres."

At the free conference sessions - featuring more than 80 speakers in four dedicated theatres - delegates can discover the latest innovations and best practices in plastics. (More details on the *Plastics Extrusion World Expo* conference are included in the listings section.)

On the evening of 13 November, attendees and exhibitors can attend a networking party at the Punch Bowl Social (tickets are US\$60).

On the following pages, you can find out more information about exhibitors at the event, as well as details on relevant speakers in the conference stream. Within the *Plastics Extrusion World Expo* conference, the panel discussion on the future for plastic pipes - held on the second day of the expo - is of particular relevance to readers of *Pipe & Profile Extrusion*.

■ For more details on the exhibition, click [HERE](#).

■ For more details on the conference, click [HERE](#).

Main image:
Panel sessions are a well-established part of the conference programme at the event

Advanced Blending Solutions

Advanced Blending Solutions (ABS) designs and manufactures materials handling, blending, desiccant drying and control systems for the plastics industry, tailored to meet the needs of its customers. It says its systems enhance operational efficiency and performance in plastics manufacturing.

➤ www.adv-blend.com

Anping Songjia Wire Mesh

Anping Songjia Wire Mesh specialises in manufacturing extrusion screens – producing wire cloth in materials such as stainless steel, Monel, and Hastelloy. These are processed into various sizes and types of screen, including weld pack and aluminium bind pack screens. It provides custom design and production services to meet specific customer requirements.

➤ <https://chinameshfactory.com>

Arlington Machinery

Arlington Plastics Machinery specialises in buying and selling used equipment, auctions, consignments, liquidations and appraisals. Services also include testing, repairing and refurbishing machinery to customer specifications. Solutions like video demonstrations of machines in operation make it a suitable partner for those seeking cost-effective machinery.

➤ www.arlingtonmachinery.com

AssetWatch

AssetWatch offers predictive maintenance for plastics manufacturing facilities. Its platform combines wireless sensors, communication networks, advanced software, and expert engineering for real-time monitoring of equipment health. Monitoring features like vibration and temperature helps reduce downtime and maintenance costs.

➤ www.assetwatch.com

Bausano & Figli

Bausano & Figli, a designer and manufacturer of custom extrusion lines, offers twin- and single-screw extruders that are known for energy efficiency and durability. Innovations like Multidrive and Smart Energy reflect a commitment to sustainability, and its solutions cater to a range of applications including pipe and profile manufacturing and recycling.

➤ www.bausano.com

Berlyn ECM

Berlyn ECM is a manufacturer of plastic processing equipment, for industries including film and sheet, pipe and foam. Its products include extruders, screen changers, pelletisers and reclaim systems. Berlyn's equipment is designed to maximise return on investment. It also provides rebuild and refurbish services, ensuring long-term performance and reliability.

➤ www.berlynecm.com

Presenters show trends and technology

Visitors to the event can attend a free conference in the *Plastics Extrusion World Expo* theatre – where industry experts will present papers on industry trends, market opportunities and technology updates.

A number of technical presentations are of relevance to pipe and profile extruders. On day one, **Lenny Gutierrez** of **Asaclean** will explain how purging can help raise extrusion efficiency, while **Gerry Lamorte** of **Custom Downstream Services** will explore the relative benefits of using a saw or hot-knife cutter on the extrusion line.

In addition, **Jeremy O'Brien** of **Exelliq** addresses how automated stacking and packing can optimise profile extrusion.

On day two, **Onur Özden** of



Speakers at the event include (from left): Lenny Gutierrez of Asaclean; Gerry Lamorte of Custom Downstream Services; Jeremy O'Brien of Exelliq; and Onur Özden of Erkinel

Erkinel talks about digitalisation in the extrusion industry, while **Kane Rasner** of **Advanced Blending Solutions** talks about the value of investing in technologically advanced equipment.

There is also a panel discussion on the future of plastic pipes featuring – among others – **Kristen Reinhart** of **Advanced Draining Systems**.

Other relevant presentations

include papers on reducing material costs with microcellular foam extrusion (by **Promix Solutions**), improving the performance of extrusion barrels (**Xaloy**) and using predictive maintenance to raise efficiency (from **AssetWatch**).

For more information about the Plastics Extrusion World Expo conference and the full line-up of speakers, [CLICK HERE](#).

Bruno Folcieri

Bruno Folcieri is a specialist in granulators and shredders for plastic recycling and processing, offering robust and innovative solutions. Based in Italy, it focuses on developing machinery that efficiently reduces plastic waste into reusable materials. Its products are designed for durability, precision and their ability to handle a wide range of materials.

➤ www.folcieri.com

Busch Vacuum Solutions

Busch Vacuum Solutions has over 50 years of experience in providing vacuum technology tailored to the needs of the plastics industry. Its product range includes vacuum pumps and customised systems designed for each stage of plastic processing, from raw granulate production to recycling.

➤ www.buschvacuum.com

C4 Polymers

C4 Polymers is a specialist in developing high-performance polymers for various industrial applications. It says it is dedicated to innovation and quality, providing products that cater to the evolving needs of its clients across multiple sectors, from automotive to consumer goods.

➤ www.c4poly.com

CDS Custom Downstream Systems

Custom Downstream Systems (CDS) is a leader in designing and manufacturing downstream plastic extrusion machines. CDS provides turnkey solutions for polymer and rubber applications, including pipes, profiles, tubes, automotive parts, and medical devices. It produces durable, reliable machinery, tailored to meet specific customer requirements.

➤ www.cdsmachines.com

CMG Granulators

CMG Granulators is a leading manufacturer of granulators, shredders and recycling systems. It offers a range of solutions for post-consumer and post-industrial recycling. It serves various sectors, including thermoforming, extrusion and cable recycling. CMG's equipment is recognised for its durability, energy efficiency and compliance with Industry 4.0 standards.

➤ www.cmg-granulators.com

Davis-Standard

Davis-Standard is a leader in the design and development of extrusion and converting equipment technology. It supports a range of industries,

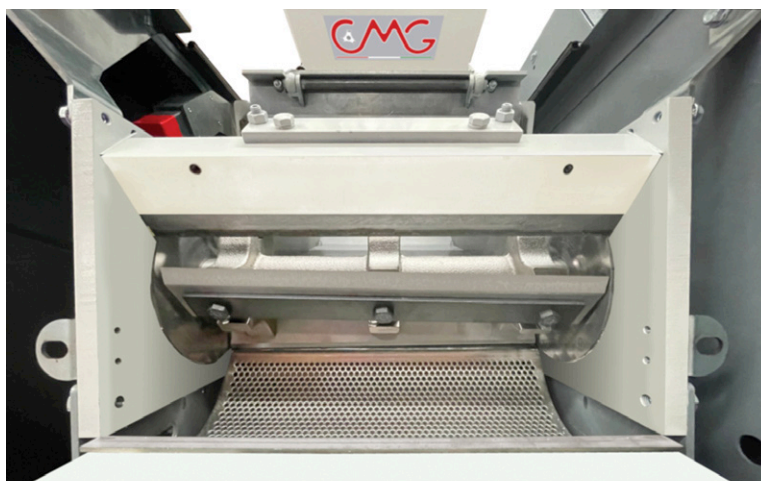


IMAGE: CMG

including automotive, construction, consumer products, medical, and packaging. The company is committed to delivering cost-effective, environmentally friendly systems that offer a high return on investment.

➤ www.davis-standard.com

Above: CMG offers solutions for post-consumer and post-industrial recycling

Doteco

Doteco specialises in extrusion automation solutions for plastic film, sheets, profiles, and synthetic fibres. It offers gravimetric blenders, yield control systems, auto profile control and supervisory systems.

➤ www.doteco.com

Dynisco

Dynisco is a specialist in high-precision sensor-based technologies and polymer test equipment. It provides solutions for measuring polymer rheology, viscosity, pressure and temperature. Its sensors, controls and analytical equipment are designed to improve process safety and performance, ensuring products meet or exceed specifications.

➤ www.dynisco.com

Erkinel

Erkinel specialises in digital transformation and modernisation solutions for manufacturing facilities. By integrating Industry 4.0 technologies, these optimise production processes, raise competitiveness and cut costs. Erkinel offers services such as machine modernisation, factory digitalisation and customised solutions to raise efficiency and productivity.

➤ www.erkinel.com

Exelliq US Meadville

Exelliq US Meadville provides profile extrusion tooling and downstream equipment. With expertise in extrusion technology, it offers reliable solutions for various industries, including automo-

IMAGE: FB BALZANELLI



Above: FB Balzanelli produces both automatic and semi-automatic coilers for flexible pipes

tive, construction, and consumer goods. It supports customers with extrusion tools and equipment, helping to optimise production efficiency and product quality.

➤ www.exelliq.com

Extrusion Consulting

Extrusion Consulting offers consulting services for the plastics extrusion industry. It helps clients with material selection, product testing, equipment evaluation and process optimisation. Its expertise also extends to business plan development and legal services.

➤ www.extrusionconsultinginc.com

Extrusion Control & Supply

Extrusion Control & Supply provides components and services for the plastics extrusion industry. Its offerings include extrusion screws, barrels, screen changers and feed sections. The company also supplies replacement parts and offers repair services to ensure optimal performance of extrusion machinery.

➤ www.extrusioncontrol.com

FACTS

FACTS Inc specialises in integrated control system upgrades for industrial applications, including extrusion, compounding and batch mixing. It offers complete extrusion lines, rebuild services for extruders, and downstream machinery, as well as online measurement systems, Scada, data collection and remote support - to optimise production efficiency.

➤ www.facts-inc.com

FB Balzanelli USA

FB Balzanelli USA is a leading producer of automatic and semi-automatic coilers for flexible pipes. With continuous development and advanced technology, FB Balzanelli says its coiling machines optimise the coiling, packing, and

storing processes for various pipe types.

➤ www.fb-balzanelliusa.com

Federal Equipment

Federal Equipment is a trusted resource for buying and selling used processing and packaging equipment in industries such as pharmaceuticals, chemicals, plastics and food processing. It provides expert appraisals, asset management and equipment removal.

➤ www.fedequip.com

GA.VO. Meccanica

GA.VO. Meccanica specialises in core-saving and cutting machines for cardboard and plastic cores. Its patented technology eliminates waste by enabling precise cutting without mechanical adjustments. The machines can cut various diameters and materials with high accuracy, ensuring a fast return on investment.

➤ www.gavomeccanica.com

Gneuss

Gneuss provides innovative solutions for the plastics processing and recycling industries. With over 100 patents, it offers technologies such as its MRS extrusion systems, automatic screen changers, and sensors for processing contaminated materials. Its Omni recycling machines are customisable and designed for high-demand applications.

➤ www.gneuss.com

Graham Engineering

Graham Engineering Company (GEC) is a leader in single-screw extrusion technology, serving industries such as automotive, packaging and health-care. With over 50 years of experience, it offers standard and custom solutions in areas including sheet extrusion, and turnkey systems.

➤ www.grahamengineering.com

GTS

GTS (German TwinscrewS) designs and manufactures various types of plastic extrusion screws. Specialising in single, conical, parallel, counter-rotating, and co-rotating twin screws, GTS delivers tailored solutions for diverse applications such as pipe, profile, sheet, and pellet production.

➤ www.germantwinscrews.de/en/

Integrated Control Technologies

Integrated Control Technologies (ICT) specialises in drive and control upgrades for ageing plastics extrusion lines. It enhances existing equipment with modern control capabilities, offering advanced

diagnostics, troubleshooting tools and easy process data collection. Its upgrades allow businesses to retain valuable components like gear-boxes, barrels and screws, providing a cost-effective alternative to purchasing new lines.

➤ www.integratedcontroltech.com

Jay Extrusion Machinery

Jay Extrusion Machinery provides advanced plastics extrusion equipment. Its comprehensive range of machinery includes extrusion lines, ancillary equipment and custom solutions. The company says its machines enhance production efficiency and product quality.

➤ www.jayextruder.com

Kuhne North America

Kuhne North America, part of the Kuhne Group, specialises in sheet and flat-film extrusion, providing solutions from extruders to downstream equipment. It also offers custom solutions through its divisions, K-Tool and Kuhne Anlagenbau, ensuring high-quality, tailored equipment for plastic converters.

➤ www.kuhne-group.com

Laidig

Laidig designs and manufactures bulk storage and automated reclaim systems, particularly for materials with challenging flow characteristics. Its solutions handle a range of materials, including recyclable goods like plastic flakes and granulated vinyl. It specialises in customised systems for industries that need specialised handling and storage.

➤ www.laidig.com

LaserLinc

Using laser and ultrasonic technologies, LaserLinc's non-contact measurement and control solutions measure critical parameters such as outside diameter, wall thickness, and surface flaws in products such as pipes, tubes, and wires. Its notable solutions include the Total Vu HMI for process visualisation and FlawSense, a 360° surface flaw detection system.

➤ www.laserlinc.com

Lung Meng Machinery

Lung Meng Machinery is a Taiwan-based manufacturer of plastic converting machinery. It specialises in extrusion, printing, converting and recycling equipment. The company says its advanced technologies cater to the evolving needs of the plastics industry.

➤ www.lungmeng.com.tw/en

www.pipeandprofile.com

Macchi

Macchi is a leading manufacturer of blown film extrusion equipment. Specialising in co-extrusion, it offers a range of solutions – from monolayer to nine-layer co-ex lines – to produce films for various applications. The company says its equipment is renowned for its versatility, quality and reliability.

➤ www.macchi.it

Nan Yun Industrial

Nan Yun Industrial manufactures screws and barrels for injection moulding machines and extruders. It says its expertise in engineering design and advanced manufacturing processes ensures high-quality, precise components that meet industry demands.

➤ <https://www.nyi.com.tw/en/company.html>

NFM Welding Engineers

NFM Welding Engineers offers turnkey plastics extrusion systems with custom integrated controls, as well as field services and equipment rebuilding. Its technologies include co-rotating and counter-rotating twin-screw extruders and single-screw extruders for various applications.

➤ www.nfm.net

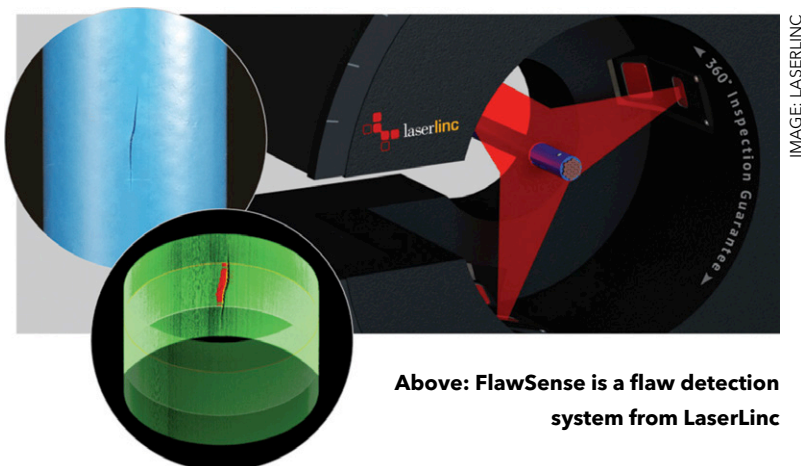
Parkinson Technologies

Parkinson Technologies is a manufacturer of large-scale web handling, winding and plastics processing equipment for the continuous web processing industry. Its brands include Key Filters, Marshall & Williams Plastics, Parkinson Winders, and Dusenbery Converting Systems. Its technology lab helps customers conduct R&D in film and sheet extrusion and orientation.

➤ www.parkinsontechnologies.com

Pixargus

Pixargus is a specialist in automated inline quality control systems, with expertise in surface inspection.



Above: FlawSense is a flaw detection system from LaserLinc

IMAGE: LASERLINC

Right: Pixargus is a specialist in automated inline quality control systems

tion and dimension measuring. Its systems detect the smallest defects and material deviations in extruded profiles, tubes, hoses and cables, as well as webs, films, and fibre composites. It also provides automated inspection of raw materials.

➤ www.pixargus.com

Plasco Engineering

Plasco Engineering designs and manufactures plastic extrusion lines for products including monofilament, strapping band and tape. It also offers project planning, turnkey extrusion lines, and process support to meet the needs of its clients.

➤ www.plasco.com.tw

Polymer Additives Group

Polymer Additives Group specialises in flame retardants and smoke suppressants, offering non-halogen options and advanced technologies that meet regulatory and performance demands. Reedy Chemical Foam provides chemical foaming agents for thermoplastics, improving efficiency in injection moulding and extrusion processes by reducing weight and energy consumption.

➤ www.pagholdings.com

Promix Solutions

Promix Solutions specialises in systems for physical foam extrusion, gas dosing, injection, and melt cooling, as well as nucleating agents and static mixers for extrusion and injection moulding. It offers both retrofit solutions and new installations, providing key components combined with extensive process knowledge and experience.

➤ www.promix-solutions.com

Proton Products

Proton Products is a leader in industrial measurement and control, offering technologies for



IMAGE: PIXARGUS

applications such as wire and cable production and plastics extrusion. Its products include laser and ultrasonic measuring systems, digital length and speed gauges, and integrated process control systems.

➤ www.protonproducts.com

PSI

PSI provides screen changers, gear pumps and custom systems for polymer, rubber and hot melt adhesive applications. It offers various screen changers – such as continuous dual-piston and backflush models – as well as specialised gear pumps for extrusion and high-pressure applications. Its flexible design approach is tailored to meet the needs of customers.

➤ www.psi-polymersystems.com

PTi

Processing Technologies International (PTi) is a leader in sheet extrusion machinery. It offers turnkey extrusion systems for applications in packaging and industrial markets, including both mono-layer and multi-layer structures. Product lines include the G-Series for cost-effective solutions, the HVTSE DryerLess for PET/PLA sheet extrusion, and the Super-G HighSpeed Extruders for high-density manufacturing.

➤ www.ptiextruders.com

Q-Lab

Q-Lab's weathering and corrosion test chambers provide reliable, affordable solutions for industries such as automotive, aerospace and building materials. Products include the QUV accelerated weathering tester, the Q-SUN xenon arc test chamber and the Q-FOG cyclic corrosion tester. It also offers contract laboratory and outdoor test services, including the world's largest weathering test site in Florida.

➤ www.q-lab.com

Below: Promix offers new and retrofit solutions for physical foaming equipment in extrusion

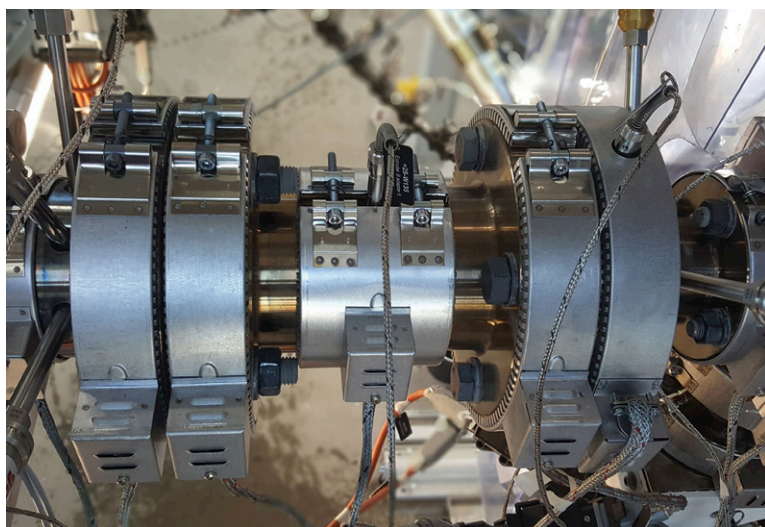


IMAGE: PROMIX

R&B Plastics Machinery

R&B Plastics Machinery designs and manufactures single-screw extrusion and blow moulding equipment. Its customised solutions are designed to meet specific manufacturing needs, with high-quality, efficient, and reliable machinery.

➤ www.rbplasticsmachinery.com

Reel Power Industrial

Reel Power Industrial develops solutions for winding, spooling and coiling flexible products. It designs and builds standard and custom reeling and coiling equipment, offering innovative and cost-effective solutions that improve profitability and reduce operational risks.

➤ www.reelpowerind.com

SBI Mechatronik

SBI Mechatronik develops and manufactures high-precision mechatronic systems, focusing on automation and robotics solutions. Its expertise includes the integration of mechanical, electronic, and software components to create solutions that meet specific customer needs. Its products serve various sectors, including automotive and aerospace.

➤ www.sbi-mechatronik.com

Scantech

Scantech is a specialist in low-energy X-ray transmission technology to measure lightweight materials. It provides online measurement and control systems using X-ray, laser, infrared and microwave technologies. Its products are used globally in production lines for products including extruded film.

➤ <https://scantech.com>

Schake Industries

Schake Industries makes spiral-rolled aluminium silos for various storage needs. Its silos are weather-tight, maintenance-free and resistant to contamination, rust and flaking. Available in diameters of 11ft 6in and 13ft 11in, these silos offer large storage capacities starting at 1,292 cubic feet. Other services include installation, cleaning, repair and relocation of silos.

➤ <https://www.schake.com/en/home.html>

SML North America Service

SML, a leader in manufacturing extrusion lines for plastics processing, offers cast film lines, sheet lines, coating and laminating lines and winders. SML also produces machines for optical and separator films for batteries, among other specialist applications.

➤ www.sml.at

www.pipeandprofile.com



Left: Q-Lab returns to the show with its QUV accelerated weathering tester

IMAGE: AMI

Solberg Manufacturing

Solberg Manufacturing produces high-quality filtration, separation and silencing products. It serves industries including manufacturing, processing and environmental services. Its products are designed to protect equipment, ensure air quality, and optimise performance.

➤ www.solbergmfg.com

Soucy Techno

Soucy Techno specialises in producing black masterbatch, which it says offers consistent quality and competitive pricing. The company serves industries that require high-quality additives for plastic production. It says its expertise lies in delivering consistent, high-quality solutions to meet demanding needs.

➤ www.soucy-group.com

Superior Engineering

Superior Engineering is an engineering consulting firm offering design and installation services across various industries. Its expertise spans disciplines including mechanical, electrical, process, chemical and structural engineering – handling projects from high voltage substations to residential construction.

➤ www.superiorengineering.com

Takachiho America

Takachiho America is a manufacturer of components used in new product development. Its product portfolio includes dampers, slide rails and level indicators.

➤ www.takachiho-america.com

THK America

THK America develops and manufactures mechanical components used for the automation and precision of machinery. Its range includes linear motion guides, ball screws, and actuators, used in

Right: TSM says its Opti-Mix blender ensures consistent homogeneity with precise dispensing

industries like robotics, medical devices, and industrial machinery.

➤ www.thk.com

TSM Control Systems

TSM Control Systems specialises in material management solutions for plastics processing, including silos, railcar unloading equipment, material handling equipment and blending systems. Its Opti-Mix blender ensures consistent homogeneity with precise dispensing and can be connected to the Insight Industry 4.0 system.

➤ www.tsm-controls.com

US Extruders

US Extruders develops custom single-screw extruders, offering solutions tailored to customer specifications. The company says it is committed to delivering machines that meet performance expectations.

➤ www.us-extruders.com

USA Rolls

USA Rolls is a manufacturer of heat transfer rolls and ASME code certified steam drums in North America.

➤ <https://usarolls.com>

Uway Extrusion

Uway Extrusion engineers and builds custom extrusion systems with outputs up to 14,000 lbs/hr. It says it is dedicated to making advances in plastics extrusion machinery, whether it is engineering and building systems to fit in-line with thermoforming machinery or integrating compounding directly into the extrusion process.

➤ www.uwayextrusion.com

Virtus Equipment

Virtus Equipment recently welcomed ACM Extrusion, offering a range of plastic solutions including



IMAGE: TSM

industrial size reduction machinery. With the partnership, it says it continues to offer a full range of industrial size reduction machinery: heavy-duty, single-shaft shredders, plastics central grinders, beside-the-press granulators, and PVC pulverisers.

➤ <https://acm-extrusion.com>

Windmüller & Hölscher

Windmüller & Hölscher offers machinery and systems for manufacturing and converting flexible packaging. Its portfolio includes blown and cast film extrusion lines, flexographic and gravure printing presses and converting machines, as well as expert consultation and engineering, delivery and complete packaging production lines.

➤ www.whcorp.com

Xaloy

Xaloy offers a wide range of high-quality screw and barrel designs. Its technological expertise has led to advances in improving quality and throughput for plastics processors, including inventing the first tungsten carbide barrel.

➤ <https://xaloy.com>



SPREAD THE WORD

Let the world know about the good things your company is doing by advertising in *Pipe and Profile Extrusion* magazine. Download the media pack to find out about our forthcoming features, global readership, and cost-effective advertisement packages. [CLICK HERE TO DOWNLOAD](#)

Download these new product brochures

Simply click on the brochure cover or link to download a PDF to your PC or smartphone

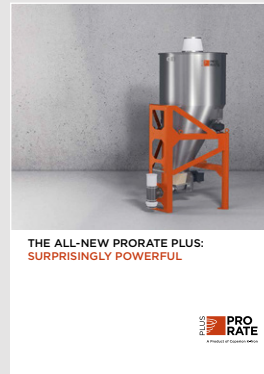
INOEX: WARP PIPE MEASUREMENT



The WARP contact-less radar-based pipe measurement system from Inoex uses terahertz technology to provide simple and effective multi-point dimensional control of thick and thin wall plastic pipes. Learn more in this brochure.

[CLICK HERE TO DOWNLOAD](#)

COPERION: PRORATE PLUS FEEDER



The new ProRate Plus feeder system from Coperion K-Tron offers a cost-effective and simple-to-configure gravimetric option for processors looking for reliable handling of pellets and free-flowing bulk powders.

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MIXACO: MIXING TECHNOLOGY



Mixaco has been driving innovation in PVC mixing technology for more than 50 years and has 7,500+ machines installed worldwide. This brochure explains some of the details that make its HM and KMH heating cooling mixers stand out.

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PIXARGUS: INLINE PROFILE INSPECTION



For over 25 years, PIXARGUS has been at the forefront of manufacturing cutting-edge systems for quality inspection of extruded products. The iProfilControl system, shown in this brochure, provides 360° all-round inspection of profiles of any kind.

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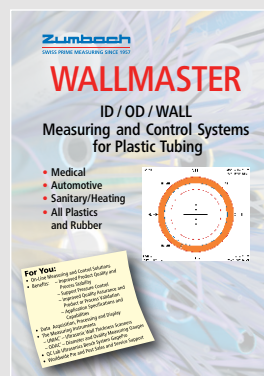
NDC: PRECISION GAUGING



The Accuscan Pro series single-axis diameter gauges are the latest addition to the NDC Technologies precision on-line measurement product line. Learn more about performance and features in this four-page brochure.

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ZUMBACH: MEASUREMENT CONTROL



This eight-page brochure details the main features of Zumbach's Wallmaster measurement and control system for improving product quality, process stability and data capture in plastic tube and pipe extrusion applications.

[CLICK HERE TO DOWNLOAD](#)

If you would like your brochure to be included on this page, please contact Claire Bishop claire.bishop@amiplastics.com. Tel: +44 (0)1732 682948

Eldon James

Head office:	Fort Collins, Colorado, USA
President:	Marcia Coulson
Founded:	1987
Ownership:	Private
Profile:	Eldon James, founded in 1987, began as a manufacturer of injection-moulded medical components and later expanded into tubing products. It now produces a range of medical-grade tubing and formed tubing, as well as a proprietary line of more than 6000 fittings. The company does not use PVC in the manufacture of its products, but uses a variety of materials including nylon, polypropylene, HDPE and PVDF.
Product lines:	The company offers a variety of tubing products. In the medical and pharmaceutical sector, its Flexelene tubing is available with a range of features, including low extractables, high clarity and low oxygen permeability. It also offers Kflex tubing - lined with Kynar - and EJ Prene for peristaltic pumps. In addition, it has Flexelene grades for general industrial applications in a variety of sizes, colours, and styles. There is also a range of anti-microbial tubing that incorporates silver, which helps to inhibit bacterial accumulation and biofilm growth.
Factory locations:	The main headquarters - with manufacturing facility - in Fort Collins occupies over 107,000 sq ft, with 42,000 sq ft dedicated to class 7 cleanroom manufacturing. This cleanroom houses five extrusion stations to produce its tubing products. A second facility in Denver covers 75,000 sq ft, with a 15,000 sq ft Class 7 cleanroom for injection moulding, extrusion, and assembly. The facilities also include non-cleanroom production of tubing and connectors for industries including medical, food and beverage and automotive.

To be considered for 'Extruder of the Month', contact the editor on lou.reade@amiplastics.com

Pipe and Profile FORTHCOMING FEATURES EXTRUSION

The next issues of Pipe and Profile Extrusion magazine will have special reports on the following topics:

Winter 2024

Large diameter pipe
Materials handling
Wood-plastic composites
PVC additives

Spring 2025

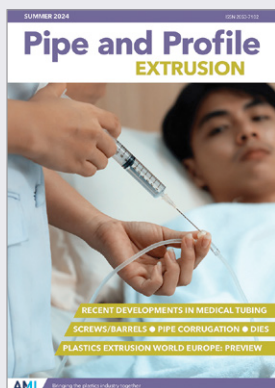
Screen changers/melt filtration
Control & instrumentation
Polyolefin developments

Editorial submissions should be sent to Lou Reade: lou.reade@amiplastics.com

For information on advertising in these issues, please contact:
Paul Beckley: paul.beckley@amiplastics.com +44 (0) 117 311 1529

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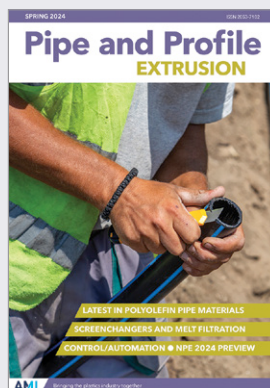
AMI publishes five process-specific FREE plastics industry magazines. Simply click on the cover below to read each magazine. Or download the issue in the relevant Apple or Android app



Pipe and Profile Summer 2024

Pipe and Profile Extrusion's Summer 2024 edition has a cover feature on developments in medical tubing, including PVC tubing and substitutes. Other features cover screws and barrels, corrugated pipe and extrusion dies.

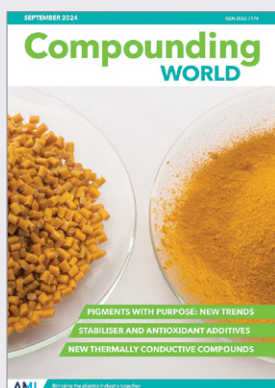
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Pipe and Profile Spring 2024

The Spring 2024 edition of Pipe and Profile Extrusion magazine has features looking at the latest polyolefin pipe materials, melt filtration, and process control developments. Plus, a preview of the US NPE plastics show.

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Compounding World September 2024

The September 2024 issue of Compounding World magazine has features on sustainability in colour pigments, demanding applications for antioxidants and UV stabilisers, and the latest compounds for thermal conductivity and high-temperature environments.

[> CLICK HERE TO VIEW](#)



Plastics Recycling World September 2024

Plastics Recycling World's September 2024 edition includes a cover feature on innovative technologies for sorting mixed materials, an update on the HolyGrail 2.0 project and articles on rigid PE and PP packaging and new granulators.

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Injection World July/August 2024

The July-August 2024 edition of Injection World magazine looks at how bio-based and compostable plastics are used in injection moulding applications. The other feature articles cover developments in energy management and 3D printing.

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Film and Sheet September 2024

Film and Sheet Extrusion's September edition has features covering efficiency gains in the thermoforming process, mono-material film developments, PVC additives and plasticisers, plus it has an update on laboratory extruders.

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EXTRUSION

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Plastics Recycling
WORLD

GLOBAL EXHIBITION GUIDE

2024	24-26 September	Fachpack, Nuremburg, Germany	www.fachpack.de
	24-28 September	Taipeiplas, Taipei, Taiwan	https://www.taipeiplas.com.tw/en/index.html
	30 Sept-4 Oct	Colombiaplast, Bogota, Colombia	https://colombiaplast.org
	8-10 October	Plastprintpack West Africa, Abidjan, Ivory Coast	www.ppp-westafrica.com
	8-11 October	Plastex, Brno, Czech Republic	www.bvv.cz/en/plastex/
	15-19 October	Fakuma, Friedrichshafen, Germany	www.fakuma-messe.de
	5-7 November	Expo Plasticos, Guadalajara, Mexico	www.expoplasticos.com.mx
	13-14 November	Plastics Extrusion World Expo North America, Cleveland, USA	https://na.extrusion-expo.com/
2025	4-7 December	PlastEurasia, Istanbul, Turkey	https://plasteurasia.com/en/
	11-14 March	Plastimagen, Mexico City	www.plastimagen.com.mx
	24-28 March	Plástico Brasil, São Paulo, Brazil	www.plasticobrasil.com.br
	15-18 April	Chinaplas, Shenzhen, China	www.chinaplasonline.com

AMI CONFERENCES

24-26 September 2024	PVC Formulation Europe, Dusseldorf, Germany
8-9 October 2024	Polyolefin Additives, Barcelona, Spain
23-24 October 2024	Plastics Recycling Technology, Vienna, Austria
29-30 October 2024	Medical Tubing & Catheters North America, Tampa, USA
12 November 2024	Profiles, Cleveland, USA
18-20 November 2024	Fire Resistance in Plastics Europe, Cologne, Germany
20-21 November 2024	PVC Formulation Asia, Bangkok, Thailand
3-4 December 2024	Polymer Engineering for Energy, London, UK
25-26 February 2025	PVC Formulation North America, Cleveland, USA

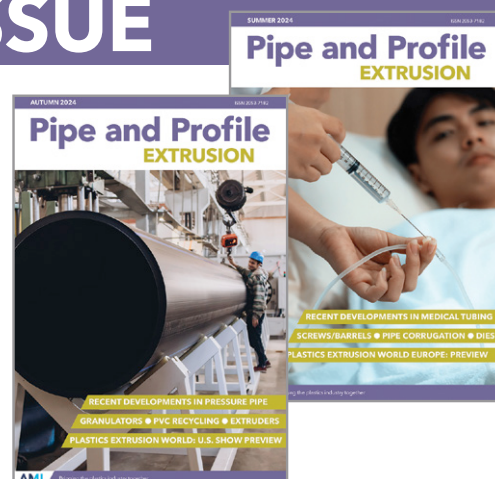
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all these events
and other conferences
on film, sheet,
pipe and packaging
applications, see

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iNOEX
INSPIRE BEYOND MEASUREMENT

INNOVATIVE WALL THICKNESS MEASUREMENT FOR BLOW MOLDING

QUALITY ASSURANCE MADE SIMPLE



WARP portable
at KAUTEX Maschinenbau

INSPIRE BEYOND MEASUREMENT

Wall thickness analysis of hydrogen tank liners is essential.

The WARP portable allows us to **save more than 80% of the time** compared to conventional measuring instruments.

Andreas Menzlin

Head of Technical Center KAUTEX Maschinenbau

For Andreas Menzlin, head of the Technical Center at KAUTEX Maschinenbau, the significant time savings in standard quality control means increased productivity for his employees. Spot checks of critical areas of a liner take only a few seconds.

Achieving consistent wall thickness distribution throughout the product is one of the key challenges in the blow molding market. This ensures that the quality of the product withstands tests such as the burst pressure test. Minimizing the use of resources and the resulting shorter cooling times contribute to this, reducing cycle time and increasing productivity.

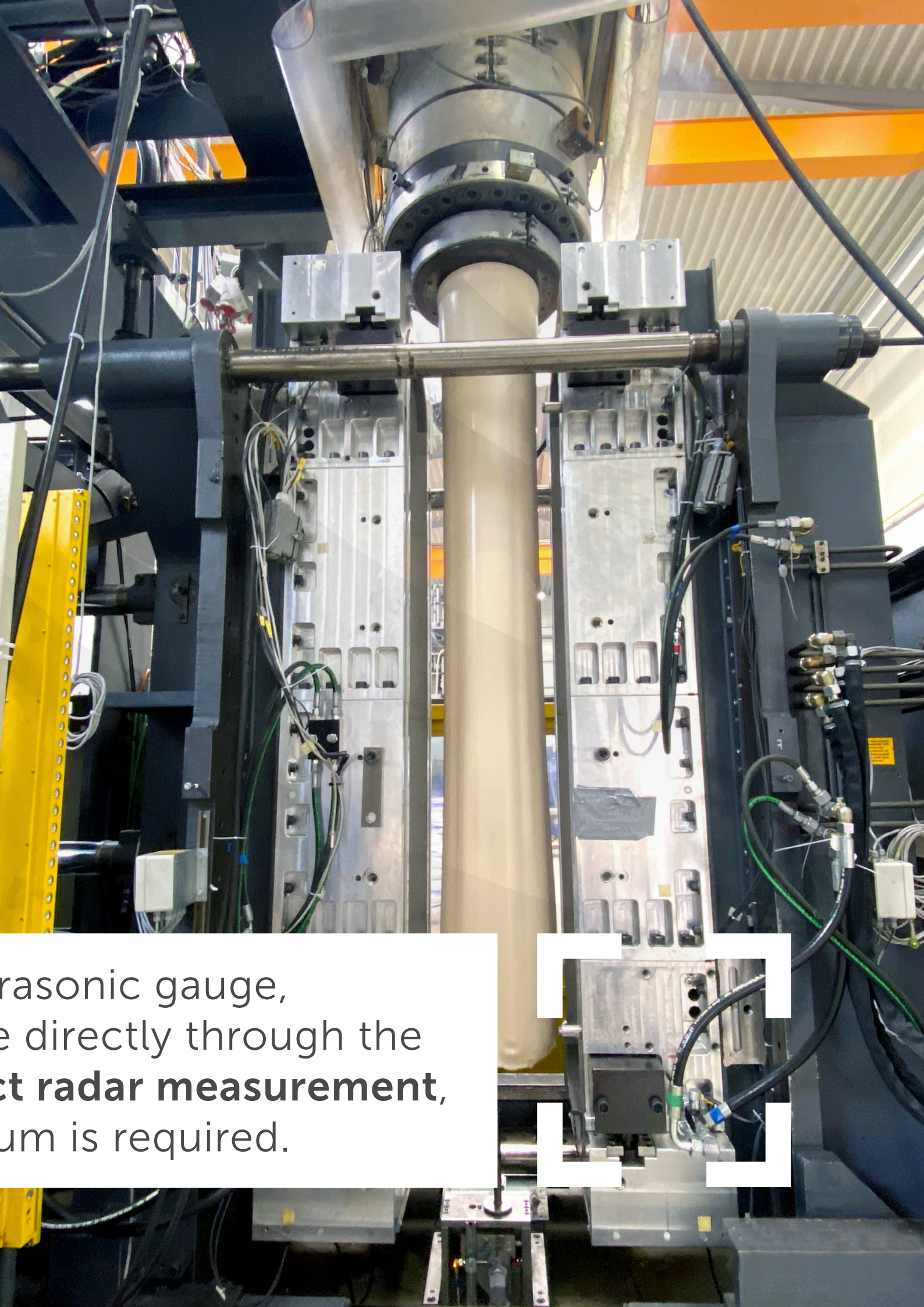
Ensuring consistent product quality is further complicated by the PCR material and requires continuous production monitoring by qualified operators who can adjust parameters as needed. Rejects due to insufficient strength, aesthetics, or sources of defects such as leaks are avoided and reduced to a minimum.

In the past, KAUTEX's quality management system used a variety of measurement techniques, all of which were time-consuming and required large quantities. In the past, calipers were used, which required the destruction of the product. The use of the Hall effect with a magnetic ball as the coupling medium, as well as the use of an ultrasonic gauge, adds time.

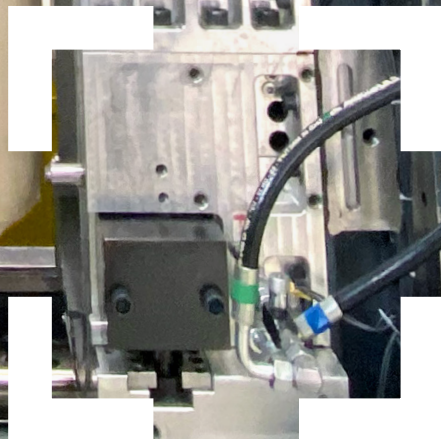
Especially in the quality control of heavy, large-volume products that require a large number of measurement points, the handling of the measurement is of paramount importance.

Compared to our ultrasonic gauge, we can now measure wall thickness in air using **non-contact** WARP, as no coupling medium



A large industrial machine, likely a laser interferometer or a precision measurement system. It features a central vertical column with a horizontal arm extending from it. The machine is surrounded by various cables, hoses, and sensors. The background shows a factory or laboratory setting with orange and white structural elements.

asonic gauge,
e directly through the
ct radar measurement,
um is required.



What challenges do you face in

At the beginning of every day, Andreas Menzlin asks himself the question: "How can I be sure that the first product we make will have the same geometry and quality as the 100th product of the day?" KAUTEX was looking for a technology that could help minimize this uncertainty, in addition to weighing the products.

Changing batches of PCR material presents every blow molder with the problem of finding the optimum geometry with the lowest possible wall thickness variations and tolerances.

There is no extra step to bring the products to our laboratory or store them temporarily, **we can measure directly on the machine.**



Andreas Menzlin is already familiar with iNOEX's gravimetric systems for extrusion technology. He describes why the decision was made to use iNOEX measurement technology: "We chose the radar-based WARP portable because it is fast and easy to use, we get the measurements right after extrusion. We don't have to wait for the blow-molded product to cool down and we can change parameters immediately if necessary".

The WARP portable is a mobile, intuitive handheld instrument for precise wall thickness measurement. It uses a radar-based principle to measure the wall thickness accurately and reliably.

This advanced technology provides fast, accurate measurement and requires only one calibration for each material.



your daily production?

About KAUTEX Maschinenbau

KAUTEX Maschinenbau System GmbH is a global company. Driven by a passion for plastics, it is one of the world's leading manufacturers of extrusion blow molding machines.

KAUTEX's core values are focused innovation, resilience, and dedication to the projects and products of its customers and partners. KAUTEX's vision to be a leader in transforming and creating value in extrusion blow molding technology is supported by an extensive product portfolio covering all major applications in the packaging, composites, and automotive industries.



The integrated centering aid ensures that the ideal measuring distance is always maintained. The measurement is recorded with an individual time stamp and the corresponding angular position is stored up to 500 times. The WARP portable provides a non-contact, non-destructive alternative to previous measurement technologies that were either destructive or required additional effort.

After a year of using the WARP portable, the KAUTEX team has seen significant efficiency improvements. "In our day-to-day operations, the most common products we measure are Type IV hydrogen liners, drums, and our specialized large packaging applications. Compared to previous technologies such as calipers, ultrasonic devices or Hall effect gauges, the WARP portable offers significant time savings and increased safety for employees," says Andreas Menzlin.

WARP portable

Mobile, radar-based measuring device



The ability to measure the wall thickness of hot products and make immediate adjustments to the WDS® (Wall-Thickness-Control) has optimized production processes at KAUTEX. The time savings of more than 80% in wall thickness measurement is not only due to the overall speed of the measurement principle but also to the documentation of the measurement results.

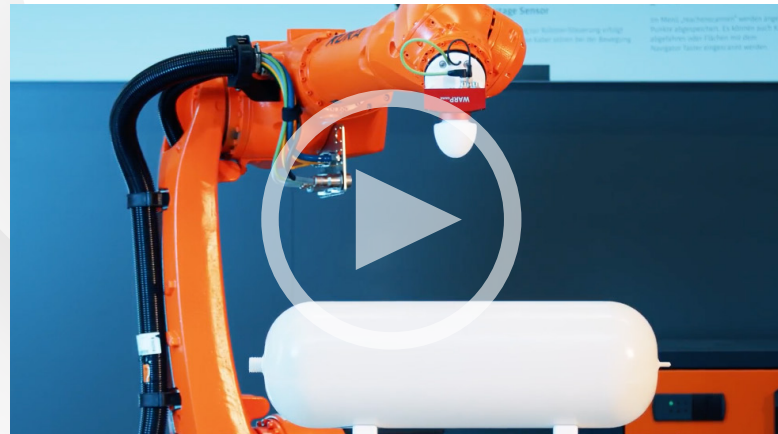




Two measuring devices, two applications.

In addition to the WARP portable, the self-contained WARP GAUGE sensor, combined with simple kinematics, automatically measures blow-molded parts after de-molding. The sensor is guided perpendicular to the part surface and generates a grid of measuring points depending on the frequency and speed of the movement.

The measuring points measure the distance, wall thickness, and, if applicable, the diameter of the component. In combination with the sensor position, the contour of the part can also be recorded, providing information on the ovality of the part.



In addition to measuring demolded parts, the WARP GAUGE sensor can be integrated directly into the blow molding system to provide measurement data during the extrusion of continuously produced melt hoses.

The small size of the WARP GAUGE allows flexible integration into the line depending on process control and part geometry.

The key is to find the point where the data generated is as meaningful as possible and the number of measurements is sufficient to draw conclusions about the process and actively implement process control.



More information:



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