

IMAGE: BAUSANO



Recent extruder developments include a piggyback arrangement for making profiles, a high-output grooved model and a flexible pipe production system for an industry newcomer

Machine code: latest in extruder technology

In the lead-up to the K show in Germany, machinery manufacturers typically keep their cards close to their chests regarding new launches. Many will already have completed work on new machines - but details will not be revealed until closer to the show.

However, many suppliers continue to make refinements to existing models - which are also being used in new and innovative ways by customers.

Tecnomatic, for instance, recently supplied a new extrusion line to Riccini, which will use it to make multi-layer polyethylene (PE) pipe.

The new line - which includes co-extruders, dies and a control system - will produce pipe of 20-90mm diameter, at outputs up to 600 kg/h.

The line includes Tecnomatic's Vega extruders (in L/D 37 ratio), co-extruders for the inner and outer layer in L/D 30, and a Venus Multi 160 die head which can produce pipe diameters up to 1,600mm.

Riccini offers a range of products including corrugated and smooth sewage and drainage

pipe, pressure pipe for water and oil transportation, and products to protect cables. Its products are made at a 130,000 sq m facility in Umbria.

"After years employing foreign machinery, we have found a high-quality supplier in Tecnomatic," said Fabio Riccini, general manager of Riccini. "This is seen in the efficiency of processes - in terms of productivity - reduction of waste and optimal use of resources."

Vega extruders have a constantly updated screw geometry which - combined with water-cooled and grooved feed bushings - allows high production and plasticisation even at maximum flow rate, says Tecnomatic.

"The specific production has been further increased and stays constant throughout the screw rotation range - even at high back pressure values," said Tecnomatic.

The machines include synchronous AC motors designed for the use in highly dynamic performance applications with variable speeds. The motors are strong enough to withstand high

Main image:
Bausano's custom extrusion lines can extrude products from waste plastic and natural fibres

Right: Roller blind manufacturer SPPF has expanded capacity by adding new extruders from Battenfeld-Cincinnati

overloads, while high-quality insulation avoids gradual deterioration caused by high-frequency operation, it added.

In addition, the line incorporates Pipe 4.0, a program for networking pipe extrusion lines. Through the machine's extrusion process control (EPC) system, different machines and peripherals are connected and can be activated through a uniform user interface. This allows the whole production process - including material feeding, temperature control and synchronisation - to be coordinated and monitored. All parameters are recorded and monitored centrally.

The system can carry out energy monitoring and convert numbers and data into valuable information - allowing later analysis.

Saving space

Polish profile manufacturer **Decco** has saved space in its production facility by using a number of 'piggyback' extruders from **Battenfeld-Cincinnati**.

Decco originally installed two of the company's co-extrusion lines in 2019 and has placed repeat orders for several more. The piggyback models consist of main extruders and co-extruders and have extended Decco's production capacity to 20 lines.

"The high-performance level of the extruders and their mature process technology support the production of high-grade, durable profiles for some 350 customers in 30 different countries," said Piotr Domaszewski, managing director of Decco.

Co-extruders enable the production of multi-coloured designs and the use of recycled material in the middle layer.

Decco uses its own production scraps as well as bought-in PVC regrind.

In all the co-extrusion solutions recently delivered to Decco, a TwinEx 78-34 with an output of up to 290 kg/h is the main extruder, combined with a ConEx NG 65 as co-extruder. The conical twin screw extruder, with up to 250 kg/h output, is mounted on top of the parallel extruder, so that floor space is required only for the latter. As well as saving space, the piggyback configuration offers cost advantages through a common control cabinet, easy operation and high energy efficiency.

The integration of tooling is simple and variable thanks to the flexible frame structure of the co-extruder.

"The space-saving solution was certainly a buying incentive for us," according to Domaszewski. "But just as important are the energy efficiency and performance of the two extruders, which guarantee economical manufacturing of high-quality profiles."



Added output

In addition, French manufacturer of PVC roller blinds **SPPF** has ordered three Alpha Plus extruders from Battenfeld-Cincinnati in order to expand production capacity.

SPPF produces 350,000 roller blind boxes and roller blinds per year. The extruders it has ordered have a 60mm diameter, a smooth feed zone and BCtouch UX compact control.

"With its intuitive operation, this control system facilitates daily production work for our machine operators," said Guillaume Le Roc'h, production manager at SPPF.

Alpha extruders are available in 45, 60 and 75mm as basic models, as well as with finely or coarsely grooved feed zones according to customer needs. They are equipped with a Knödler drive system as standard and have a compact design.

"Thanks to their compact footprint, the extruders are suitable for flexible use, which is very important in view of our extensive product portfolio," he said.

Multiple sizes

Canadian pipe extruder Encoma - which was only formed last year - is using a QuickSwitch line from **KraussMaffei** to make various sizes of multi-layer HDPE pipe.

The three-layer line - the first QuickSwitch line in North America - was installed in late 2021 at a new factory in Manitoba.

"As a newcomer in this branch of industry, it was important to have a partner who would set up a turnkey plant and provide training and support," said Derek Hofer, plant manager at Encoma.

The company has already ordered two new lines: a second QuickSwitch line and a five-layer PE-RT line to make underfloor heating pipes.

"Quality, reproducibility and production time