



TECNOMATIC

**EXTRUSION
LINES**

TECHNOLOGIES FOR PLASTIC PIPES PROCESSING



TECNOMATIC

APPLICATIONS

Designed to fit the customers needs and their pipe production the Tecnomatic's extrusion machines are the ideal solution to manufacture pipes with a range from 5 to 3000 mm. They are employed for the extrusion of many materials and for different applications: PE 63, PE 80, PE 100 smooth water & Gas pipes, Irrigation, telecommunication, PE or PP Corrugated non-pressure sewage and cable protection, reinforced pipes or steel-coated and plastic pipes.

HDPE

Large bore pipes up to 3.000 mm
Water & gas high-pressure pipes
Pipes for conduits and mining
Corrugated pipes for cable conduits, drainage and sewage
Telecommunication and micro-duct pipes
Multi-layers or steel pipes coating

LDPE, LLDPE

Irrigation and agriculture pipes

PP

Hot & Cold water sanitary pipes
Corrugated drainage and sewage pipes
Large diameters pipes for chemical industries

PE-X

Mono or multi layers pipes with oxygen barrier (EVOH) and aluminium for hot water application

PVC

Pressure and non-pressure application
Gardening, wire reinforced, food & beverage, marine hoses

ABS, PC, PA, PPS

Technical polymers pipes and hoses

Extrusion lines

Quality & performance all along the line

For traditional production lines for PVC, PE, PP (mono or multilayer), or special custom made solutions, Tecnomatic provides a specialized project management unit, equipped to deal with a wide range of requests. Always keeping in mind the economic optimization of the plant and production, the company can give assistance at any step of the project; from the feasibility study and machinery planning to the start-up and after sales support.



1200 mm, PE line



PE mono

Your benefits at a glance

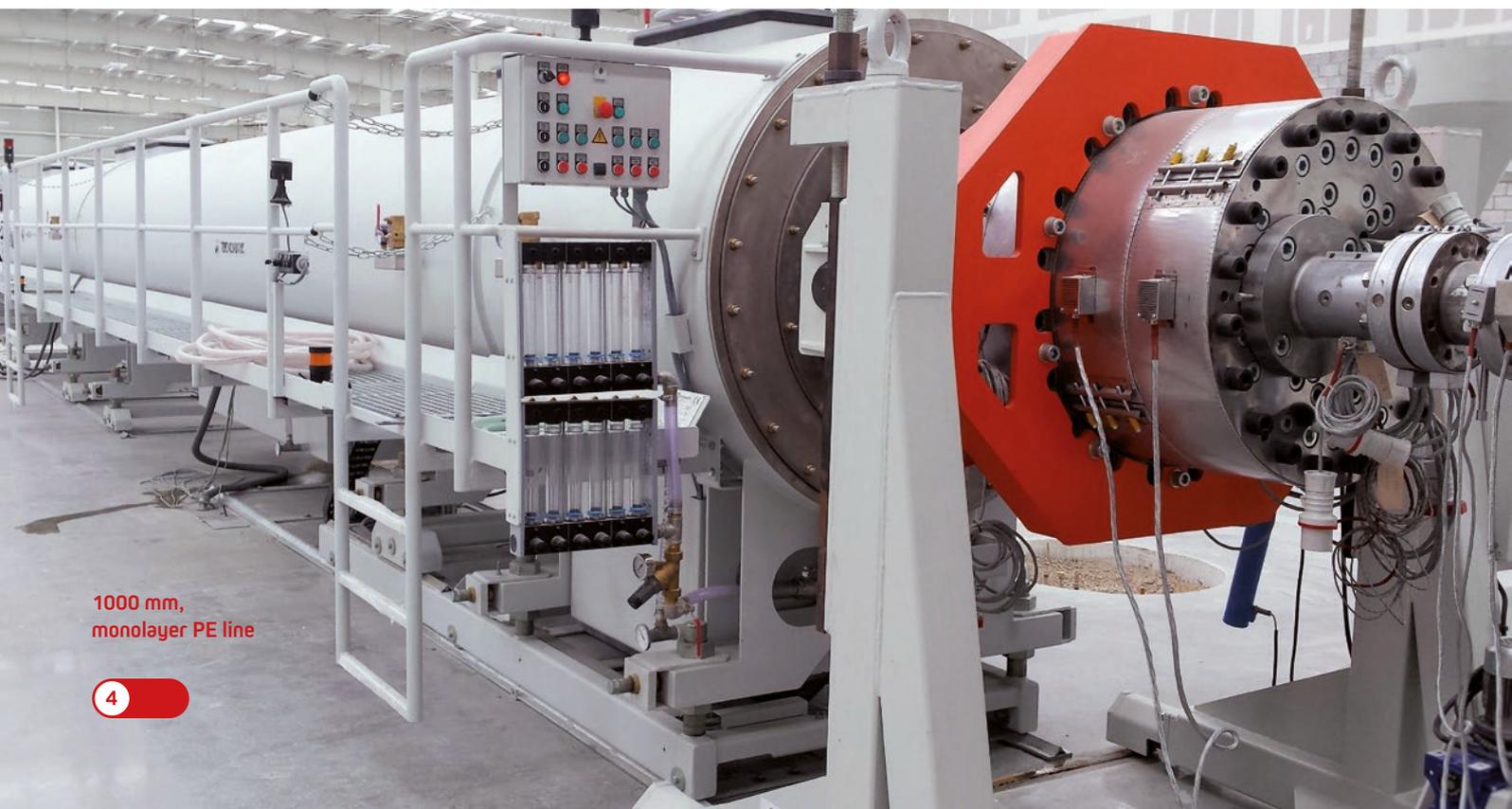
High output and performance.
Optimal energy consumption.
High grade of automation.
Extended production range. Excellent
cost-performance ratio. Pipe Air Cooling
(PAC) system to short the cooling and
to improve the pipe quality.

Polyethylene lines up to 3.000 mm

Tecnomatic's polyethylene lines are designed keeping in mind the customer's need for high output production, quality and stability.

The lines, offered with a range up to 3.000 mm, are characterised by the adoption of latest innovative solution for the extrusion and with a high grade of automation and control. Mainly used in manufacturing water and gas pipes, all the lines can embed an additional pipe air cooling system (PAC), to enhance the pipe quality and to improve the output performance. Custom-made turnkey projects are designed for the market of plastic jacketed pipes for district heating, for mining with special layers or wall thickness and irrigation.

HDPE Monolayer



1000 mm,
monolayer PE line

PE multi

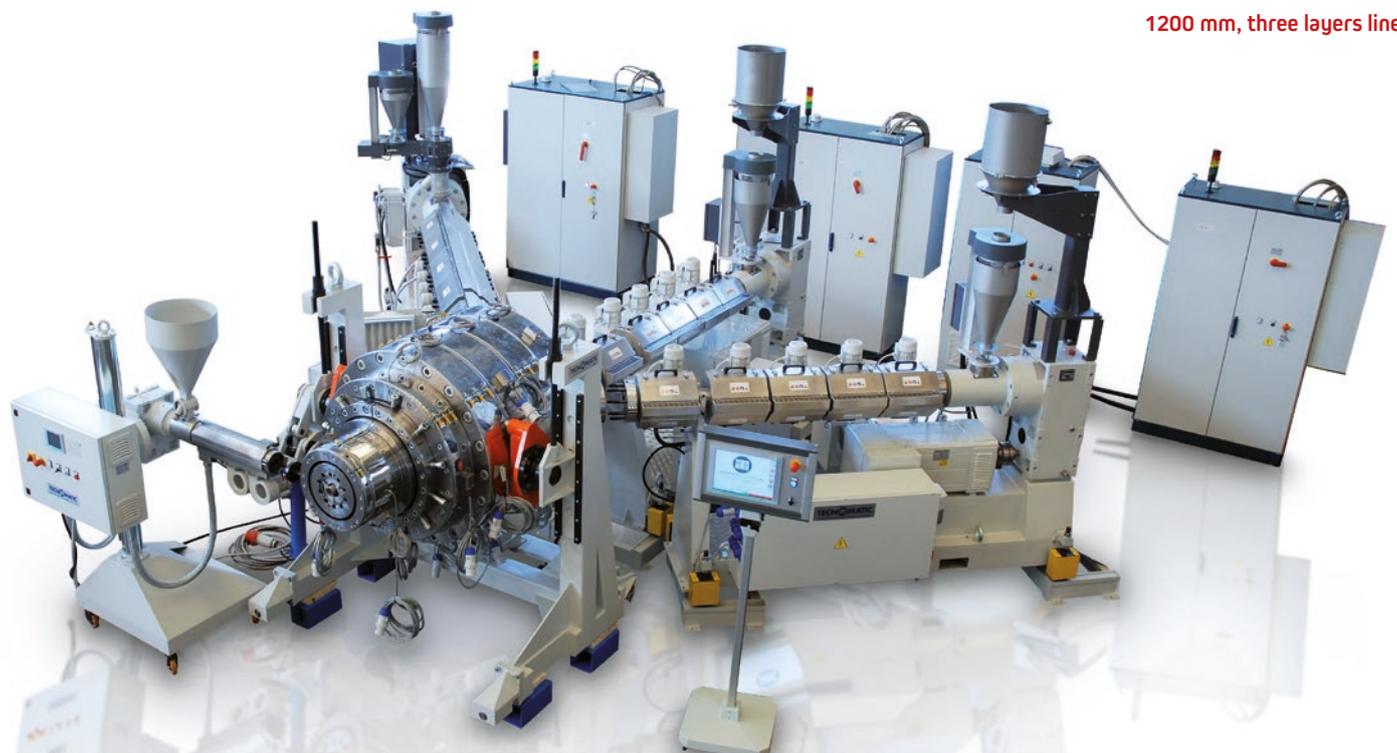
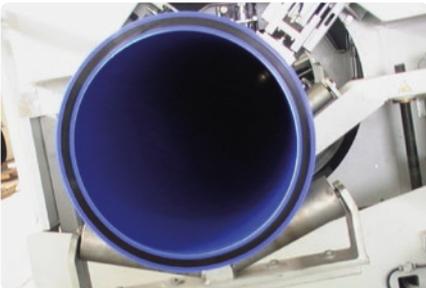
Your benefits at a glance

High output and performance.
Optimal energy consumption.
High grade of automation.
Even wall thickness distribution for lower overweight of pipe and raw material saving. Excellent investment ratio price/performance. Pipe Air Cooling (PAC) system to short the cooling and to improve the pipe quality.

Multilayer lines for complex pipes with functional layers

In a market, which is always more and more looking for highly innovative development, with respect to the growing improvement of material properties, single-layer pipes are not always able to fulfil the necessary requirements. These multilayer pipes are used extensively in Europe for installations using trenchless techniques or where no imported backfill is used. By using the material dug from the trench the installers are able to reduce the costs and the environmental impact of materials to the site. Tecnomatic has well interpreted these customer needs and has developed, based on the VENUS die-head concept, complete lines, for the production of two, three or four layers pipes, even in large diameter size. A project in 1.200 mm three layers is the milestone of the multilayer production made by Tecnomatic. According to requirements, custom fit solution can be offered and engineered to maximize performance, cost saving, and space, without compromises on product quality.

Wall structure with blue HSCR PE100, and standard PE100 for the core



1200 mm, three layers line



PP line

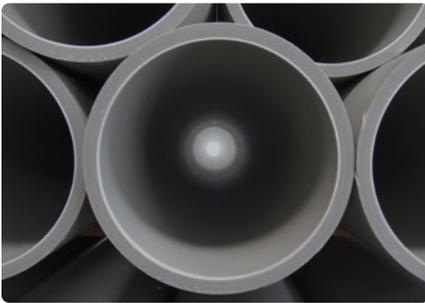
Your benefits at a glance

- High production speed.
- Special solution for PP with glass-fibre.
- Optimal energy consumption.
- High grade of automation.
- Even wall thickness distribution for lower overweight of pipe and raw material saving.
- Excellent cost-performance ratio.

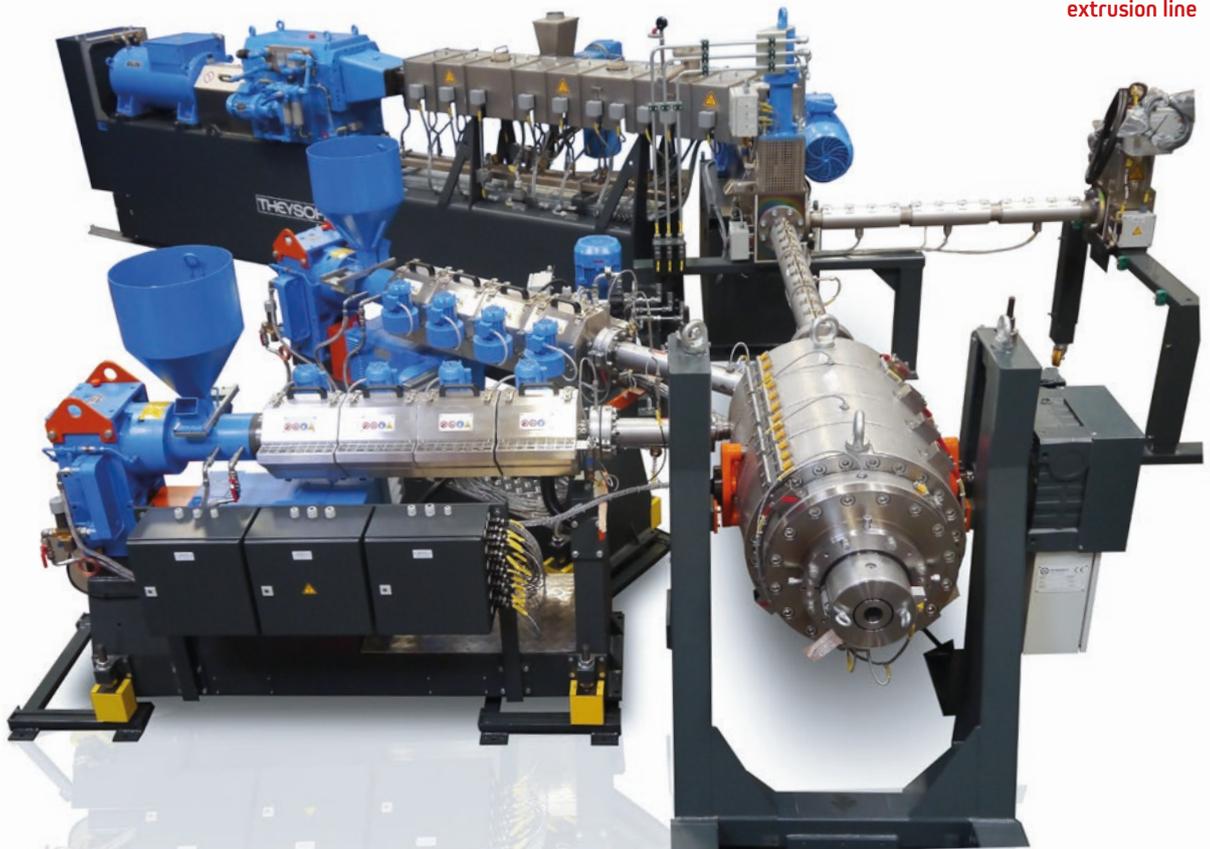
Mono and multilayer lines for pp-h, pp-c

Classic pipelines for wastewater and drainage (pressure or non-pressure) made of cast iron or other metal alloys are getting more and more obsolete, due to several issues that may affect the pipe such as rust and corrosion, as well as all the connected costs of installation, repairing and/or replacing. Also the cost of production and transport of metal pipes are relevant. As per the above mentioned reasons, they are being replaced with tubes made of thermoplastic materials. Polypropylene in particular, has a great stiffness which enables the pipe to resist even in the event of extreme stresses and also has a considerable thermal resistance, in a range between -20°C and $+50^{\circ}\text{C}$ (in laying operations) with peaks up to 90°C in operating conditions. Tecnomatic offers a wide range of solutions to process homopolymer and copolymer polypropylene, virgin or with filling minerals. The top and bottom layers of these pipes are made of polypropylene and the middle layer is made of mineral filler polypropylene compounds which guarantee high mechanical resistance, excellent acoustic performance and resistance to the agents. The lines are supplied with different sizes of the extruders; 30, 37, and 40 L/D, depending on the specific material and customer needs, with dedicated screws or geometries specifically designed for a perfect polymer processing and mixing.

Solid wall PP pipes



Multilayer PP-HM direct extrusion line



PP-r lines

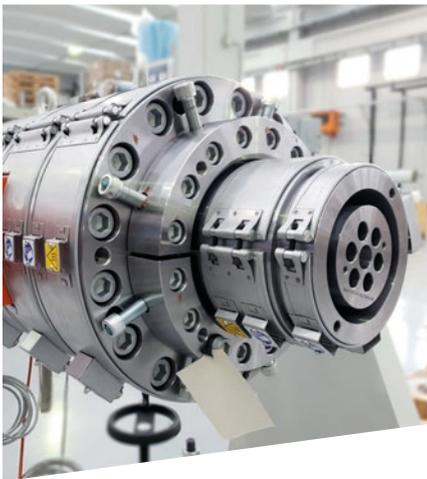
Your benefits at a glance

- High production speed.
- Special solution for PP with glass-fibre.
- Optimal energy consumption.
- High grade of automation.
- Even wall thickness distribution for lower overweight of pipe and raw material saving.
- Excellent cost-performance ratio.

Mono and multilayer lines for hot & cold water

Transport systems for hot and cold water for sanitary use, are made using random copolymer polypropylene (PPR and PP-RCT), a plastic material with a particular molecular structure that ensures high mechanical strength and long life, even at high temperatures and pressures (up to PN25). The most common diameters are in a range between 20 mm and 125 mm, but for sanitary and industrial use are also available up to 630 mm. PPR pipes are widely used in multilayer configuration with intermediate fiberglass compound, which gives to the conduit more resistance and limits the thermal dilatation of the pipe. The competence and experience of Tecnomatic extend to this entire sector and cover the production of PP-R, PP-RCT monolayer pipes, with glass reinforcement (to bring additional benefits), or up to seven layers with innovative protection properties.

Venus multi 3 . 250



PP-r with fiberglass multilayer line



PE-X, PE-RT, PB, PA, ABS

Your benefits at a glance

Flexibility and modularity of the lines.
Special screw and tools development
for specific materials.
Enhanced performance.
Die-heads with radial or helical spiral.

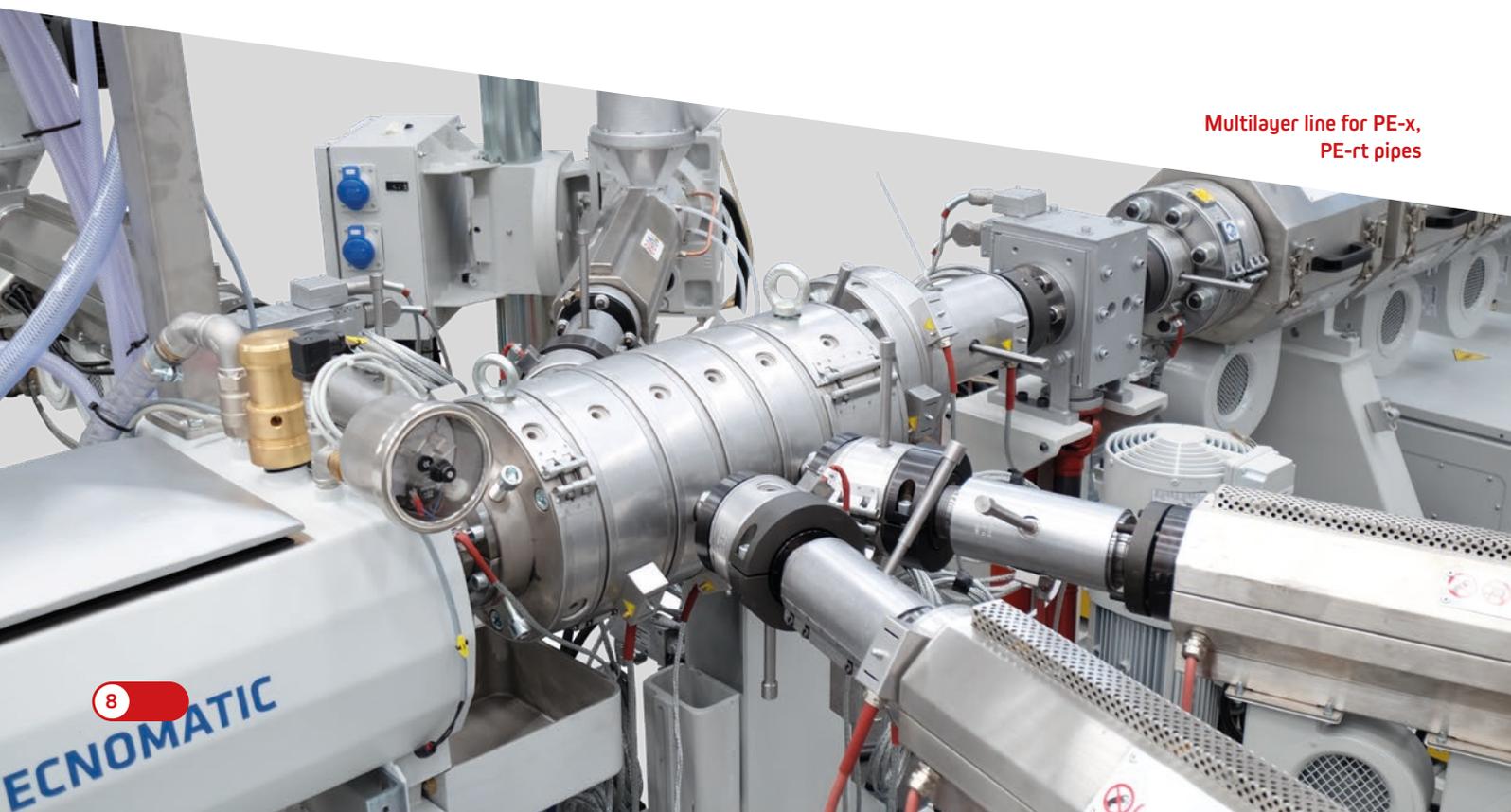
Lines for heating & plumbing pipes and technical tubes

Cross-linked polyethylene pipes



Plastic pipe systems for heating and plumbing are available in a wide variety of materials. Crosslinked Polyethylene, commonly abbreviated PE-X is the most popular material for hot and cold water application. The success of this material is mainly related to its elevated temperature capabilities (up to 80°C), improved flexibility while resisting tensile deformation, resistance to abrasion and toughness. Heating pipes may come in multilayer solution, up to five, with EVOH oxygen barrier for protection from physical, chemical and UV damage or in Polybutylene (PB) and PE-RT materials. For this application Tecmatic has specifically developed high speed lines based on the innovative die-heads Athena, made of radial spiral modules, which have great advantages: do not have any dead zones or edges where material could stop and grant an easy cleaning and rapid assembling/disassembling operation. Besides the manufacturing of heating plumbing system, the gained experience in small thermoplastic tubes has allowed the developments of tailor made solution for the market of technical tubes in PA, ABS, PU, PTFE for the industrial applications.

Multilayer line for PE-x, PE-rt pipes





RTP line

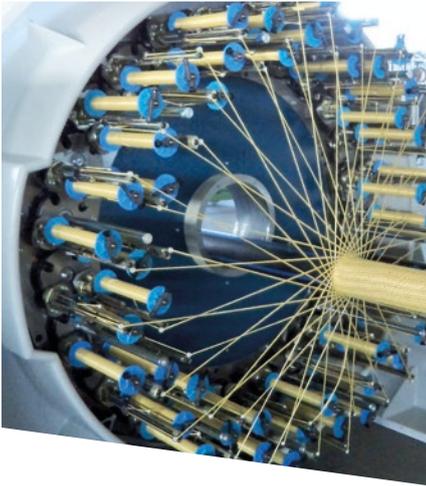
Your benefits at a glance

Tailor made solutions.
Know-how and feasibility studies.
Full experienced partners.

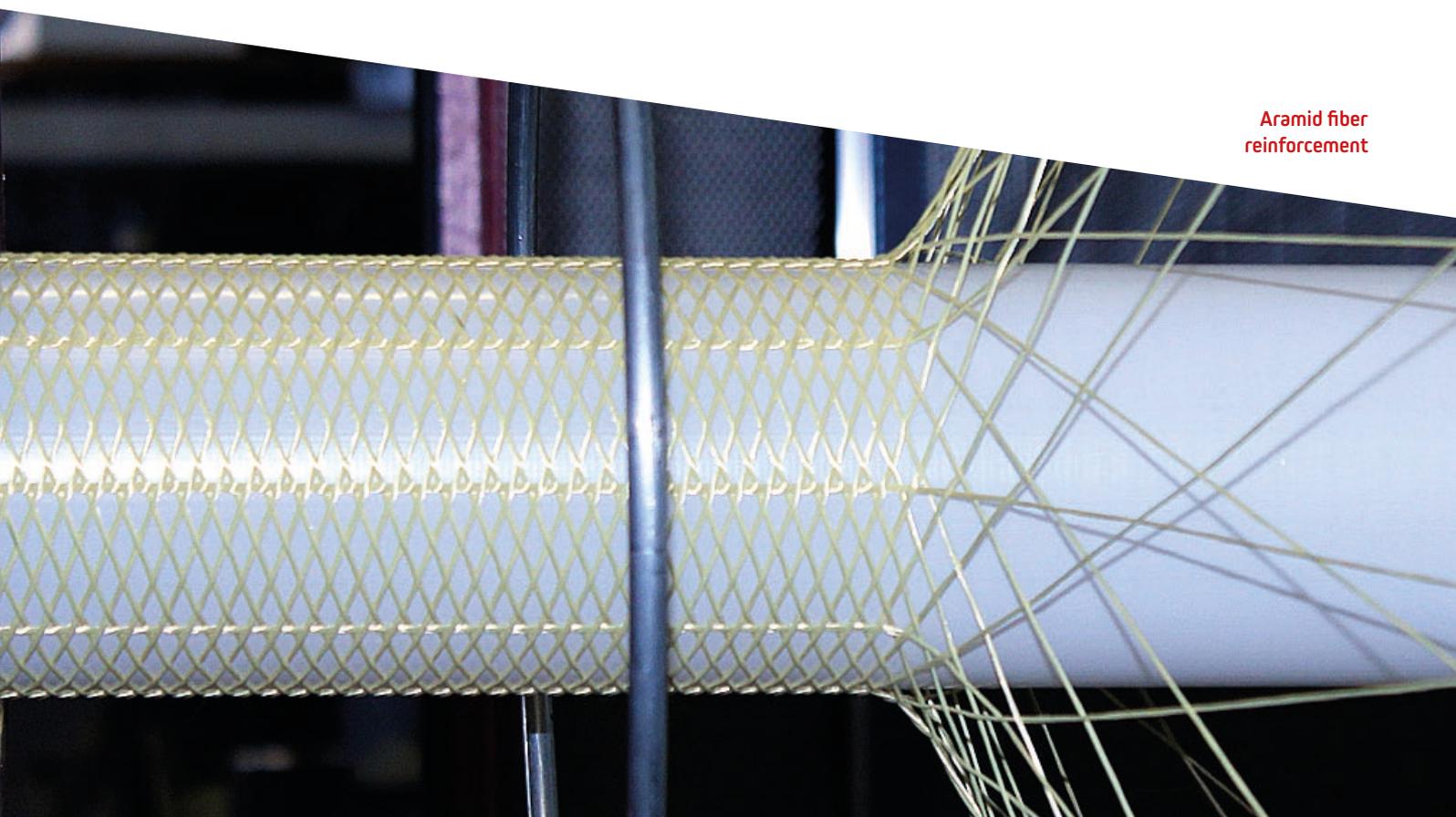
The pipes and the lines of the future

Plastic pipes systems have been used very successfully for gas distribution and pressure up to about 10 bar, solving the corrosion and reliability issues of steel and ductile iron systems. Significant increase in pressure rating can be obtained by the development of multilayer and composite pipe constructions, to satisfy specific application requirements. Reinforce Thermoplastic Pipes (RTP) pipes have great potential to do this by meeting requirements for medium and even high-pressure transmission lines. The use of glass fibre, aramid tapes, Kevlar and even stainless steel chord reinforcement result in substantial advantages for the handling of corrosive fluids, for transport of oil & gas from deep sea fields and for the gas distribution system, replacing the use of steel pipes into the indoor and high pressure gas application up to 40 bar. Products are individually tailored to meet the specific requirements of the application and the production lines are designed in accordance to the number of layers and wrapping process; for different reinforcing materials or angles, selected in order to withstand internal or external pressure or longitudinal stress.

Aramid fibre braiding



Aramid fiber reinforcement





Corrugated pipes

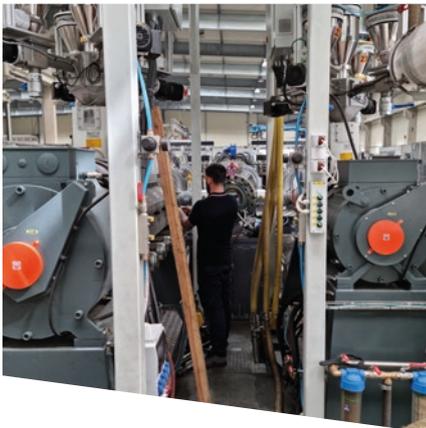
Your benefits at a glance

- Constant output rate at high backpressure rate.
- Full experienced partners.
- Low energy consumption.
- Excellent cost-performance ratio.

The definitive solution for drainage and many other applications

Corrugated pipe have become the chosen pipe for many drainage applications. The use of double wall corrugated pipes is increasing thanks to factors such as the pipe's strength, durability, joint integrity, and long-term cost-effectiveness. Polyethylene and Polypropylene corrugated pipes are flexible in two directions, are chemical resistant, offer a good hydraulic flow and gain advantage over the rigid pipes made of traditional materials like clay stone or concrete. Light and material saving the pipes are easy handled for transport, installation cost and maintenance. Corrugated pipes are used in a wide variety of other applications. In smaller sizes, single wall and from additional materials like PA, TPE, TPR, PTFE are commonly used for cable protection, telecommunication, medical, automotive and food industries. Depending on which application and material, Tecnomatic offers a vast choice of extruders with processing length ranging from 24 L/D to 40 L/D to fit the customer's need with the most efficient solution. For bigger diameter size (drainage & sewage) the adoption of gearless extruders, which guarantees a constant and specific output over the speed range even at high pressure but with extremely lower power consumption, is particularly interest.

Zephyr 60 + Zephyr 45 for corrugated pipes



800 mm,
corrugated pipes line

PE Microduct

Your benefits at a glance

High output and performance.
High grade of automation.
Turnkey solution.
Excellent investment ratio
price/performance.

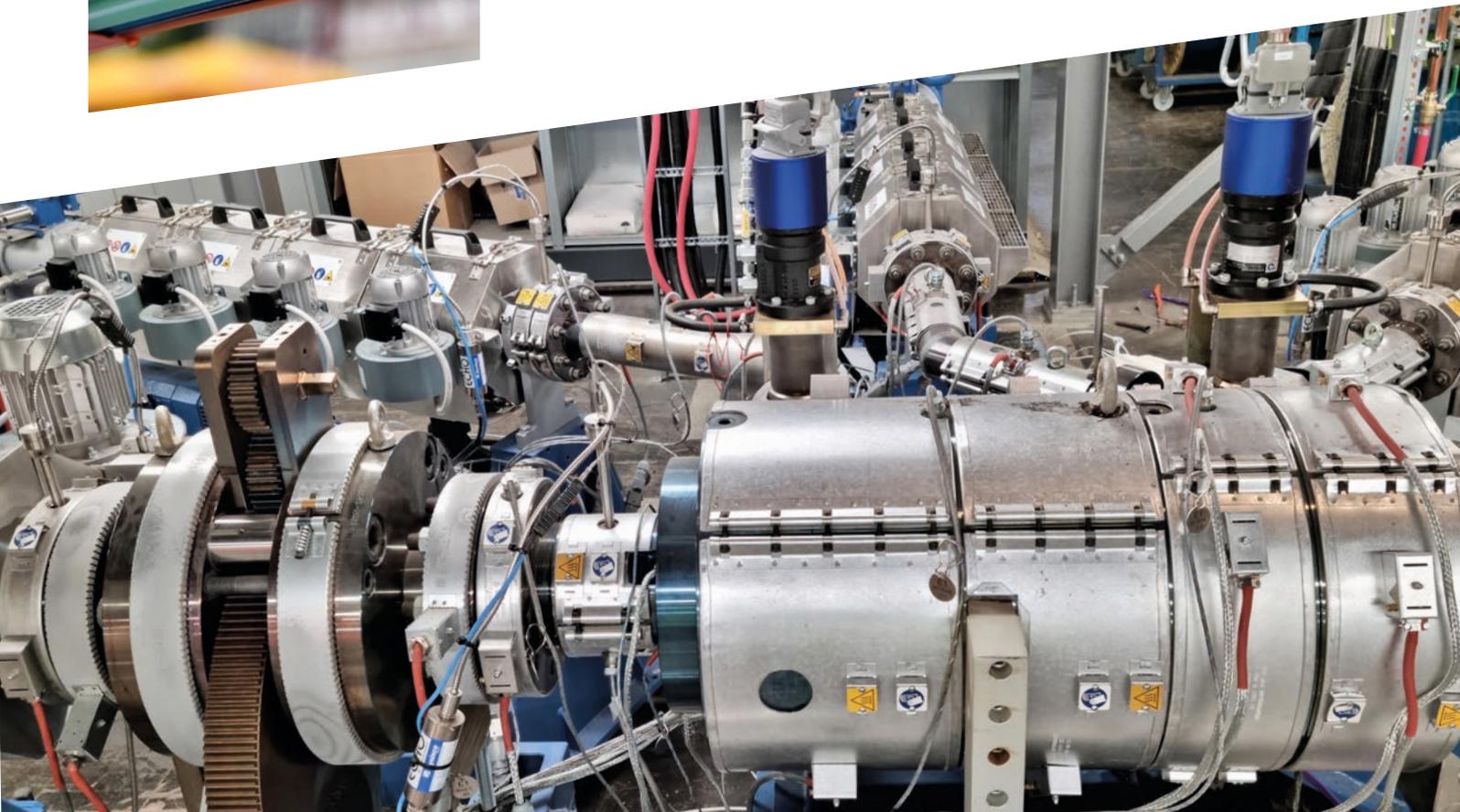
Turnkey solutions for micro-duct and electrical industry pipes

Advances in cable technologies, as well as the expense of repairing sensitive cable materials like fiber optic cable, have driven preferences for protective conduit instead of direct burial. PE conduit serves two primary industries: communications (telephone, CATV, data transmission) and electrical (power transmission). In the communications industry, the advent of fiber optic cable has had a tremendous impact due to its significantly higher data-carrying capacity, particularly due to the explosion of the Internet. In telecommunications service (phone, data transmission), fiber optic cable is used, along with traditional copper cable. In cable television service (CATV), fiber optic is also growing rapidly in addition to (or replacing) coaxial cable. This progression toward fiber optic cable has made the need for protection more critical, since these materials are highly sensitive to moisture and mechanical stress. High-speed extrusion lines for the production of micro-duct pipes are designed at Tecnomatic to reach the most efficient production with precision control of the size, of the layers, and weight. An accurate manufacturing and selection of electronic and mechanical parts ensure a maximum automation and production at the best speed rate available. To group the micro-ducts in bundles, used in network application, a turn-key solution starting from the unwinding units to special coilers for drums can be offered, or engineered according to specific requirements.

Micro ducts bundles



High-speed micro duct line





TECNOMATIC



MADE IN ITALY

**EXTRUSION
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