

THE PLASTIC
TECHNOLOGY
MAGAZINE

insideextrusion

ISSUE #01 | SEPTEMBER 2019



A different
perspective **to extrude.**

AN IRREPLACEABLE MATERIAL

Airbags and helmets, which save thousands of lives every day, are made of plastic.

CIRCULAR ECONOMY

How could we start a really sustainable transition? Innovation and recycling culture.

ROI

Extruders and return on investments. Why investing in a new productive line is convenient.



THE ONLY WAY TO ACHIEVE THE IMPOSSIBLE IS TO BELIEVE THAT IT IS POSSIBLE



A TYPICALLY ITALIAN QUALITY

It was 1946 when my grandfather, who was only 36 years old at that time, together with about twenty employees, founded a small company specialized in manufacturing plastic processing machinery, and started to design and build extruders. A pioneering idea that proved to be successful, at a time when only a few people had realized the enormous potential of this new material.

His name was Clemente. The war had just ended, everyone wanted to get working and the company quickly achieved significant results: starting as a craft workshop, Clemente Bausano Costruzioni Meccaniche

became a real industrial reality in just a few years. A cutting-edge factory for equipment, machinery and skills providing its customers with the best solutions for plastic extrusion.

Our family enterprise has already entered the third generation with my cousins, Valentina and Giovanni, and I, and nowadays Bausano can rely on a strong identity and excellent reputation all over the world. Together, we will strive to let this company, which is a symbol as well as an example of the Italian manufacturing culture, grow even more. We have always remained true to an entrepreneurial culture

based on artisan values such as work, commitment and search for quality, with tradition and innovation always going hand in hand.

Underlying every decision we make there is a strong sense of ethics and responsibility towards society and the area where we live - a key driving force for us to do our best in order to protect the environment and respect people, be their customers, employees, suppliers or collaborators.

What are we going to do tomorrow?

Paraphrasing Oscar Wilde, we must believe the impossible to achieve it, starting from clear intentions and deep integrity, capable of guiding every future choice.

Clemente Bausano
Vicepresidente Bausano e Figli Spa



Contents



06 IS PLASTIC REALLY OUR ENEMY?

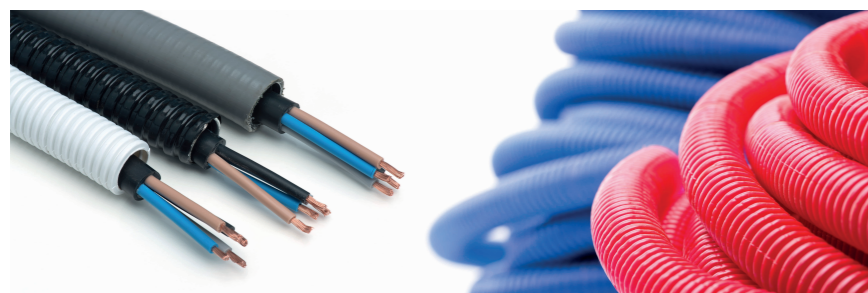
Investing in research and innovation, in order to transform a production chain, which is so divided today, into a virtuous circuit.

09 WPC: MORE ECOLOGICAL, MORE COST-EFFECTIVE

Smart, cost-effective and, above all, responsible choice in terms of sustainability.

07 TOWARDS A SUSTAINABLE TRANSITION

The research should be aimed at rethinking daily products, which must be easily recyclable and designed for re-use.



12 ENERGY: A RESOURCE TO INVEST IN

For plastic processing industries the energy ranks third among the budgeted costs on average.

16 THE WORLD MARKET OF PLASTIC

The production of plastic reached 348 million tons of which over 64 million were produced in Europe: let's analyse the demand.



22 TOOLS FOR TOMORROW

Extrusion technologies and future applications: Three innovations made by Bausano.

26 EXTRUDERS AND RETURN ON INVESTMENTS

To achieve a high ROI, there are two roads: focusing on machine power and performance, or containing ordinary management costs.

27 HIGH PERFORMANCE TECHNOLOGIES

The purchase of a new extruder must be seen as an opportunity to renew assets and promote the development of the company.



28 THE UNPLANNED MACHINE DOWNTIME

When it comes to failures or other unplanned problems, the parameters we have to take into account are many and the damage to the company can be much more substantial.



31 NEW VS SECOND HAND

The purchase of a new extruder must be seen as an opportunity to renew assets and promote the development of the company.

33 A LIFE IN THE COMPANY

80th Birthday Party of Mr. Eraldo Bausano, a President that lives for his company.

32 OPEN DAY BAUSANO

We are asking everyone to join us and help us imagine the future of extrusion together. In this way, we are sure that results will come.

34 RUN FOR THE OCEAN

The initiative has been called "a race to rid the seas of plastic" and has now become a global movement.



IS PLASTIC REALLY OUR ENEMY?

THE QUALITIES (WHICH NOBODY MENTIONS) OF AN IRREPLACEABLE MATERIAL

If plastic exists, it is because it is cheap and practical as well as lending itself to a countless number of uses. This awareness should be our starting point to objectively evaluate pros and cons and imagine the future of this material and of the whole sector.

Just as the seriousness of sea pollution cannot be denied, we cannot but realize how plastic has been changing our lives for the better in recent decades, by making things that were previously considered impossible become even normal.

Just think, for example, of the food waste campaign: it is estimated that, without plastic, 50% of food would deteriorate before being consumed. According to Unionplast estimates, packaging is making the shelf life of food products considerably longer - from 7 more days for meat, to 14 for vegetables and fruit, through to 50 for dairy products.

In health terms, therefore, plastic means safety: an aseptic, hypoallergenic material suitable for blood transfusion bags, vascular prostheses, catheters and other essential instruments.

Airbags and helmets, which save thousands of lives on roads all over the world every day, are also made of plastic.

Finally, plastic helps reduce fuel consumption and the number of vehicles in circulation, because it is extremely light and compact: on average, to contain 100 g of product, 100 g of glass, 25 g of metal, 24 g of cardboard and just 3 g of plastic are needed.

Moreover, according to data recently published by the Plastic Rubber Federation, it is estimated that every year about one hundred million barrels of oil can be saved in Europe thanks to plastic packaging, thus preventing the emission of nearly fifty million tons of CO₂, namely the emissions caused by three and a half million people.

Hence, the real problem lies in the wrong use we make of plastic, not in plastic itself: there are many solutions to reduce its impact on the environment, but the whole challenge should be based on the awareness that disparaging is useless, and that before going "plastic free," one should take into account the actual consequences and feasibility, on a case by case basis.

The real challenge is investing in research and innovation, in order to transform a production chain, which is so divided today, into a virtuous circuit, by focusing on environmental sustainability and also by benefiting companies, in terms of economic upsides and image.



CIRCULAR ECONOMY, INNOVATION AND RECYCLING CULTURE

Today plastic emergency is indeed one of the most heartfelt topics: we keep hearing about plastic islands, threats to the ecosystem, restrictive laws and actions to be taken immediately on a global scale in order to curb damage and reverse the trend.

Public opinion is unanimous in calling for an immediate solution, but the truth is that plastic cannot be eliminated once and for all: for many applications there are no valid alternatives, and the consequences would be serious, both in health and food safety terms. Not to mention the repercussions in terms of employment, considering that the plastic processing industry employs over 110 thousand people in Italy alone, according to the Plastic Rubber Federation's data.

So how could we start a really sustainable transition?

As it always happens, there is not just a single solution, but multiple actions can be taken with regard to new technologies, innovative materials, production methods and collection and disposal systems. A mature approach that involves a change of course in the industry as a whole.

As a first aim, a circular plastic economy should be created: today 15% of produced plastic is recycled in Italy, and this is an important percentage, though not sufficient. We need everyone's commitment and along with incentives for virtuous companies, so that oil consumption and CO₂ emissions can be reduced, and the introduction of new plastics on the market can be slowed down.

In order to achieve this aim, however, it is necessary to improve the quality and variety of polymers derived from recycling, thus making the purchase of virgin materials uneconomical.

Furthermore, research should be aimed at rethinking daily products, which must be easily recyclable - for example by using mono-polymeric materials - and designed for re-use.

Then, plastic waste management and disposal are issues deeply involving everybody's civic sense and culture, from large companies to private citizens. This is where institutions can do a lot - by encouraging virtuous behaviour through targeted communication policies and campaigns, and by making modern, efficient and reliable instruments available.

TOWARDS A SUSTAINABLE TRANSITION



Possible
with **our**
extruders.



WPC: MORE ECOLOGICAL, MORE COST-EFFECTIVE

ALL THE ADVANTAGES OF AN ALTERNATIVE CHOICE

Attractive, resistant, versatile, elegant like wood but without its flaws. In a nutshell, WPC (Wood Plastic Composite), which is currently becoming one of the most appreciated and widespread solution for an increasingly growing number of applications.

WPC is the eco-friendly answer to building and architecture needs. A material that combines the aesthetics of natural wood with the sturdiness of plastic resins - all at a significantly low cost.

Bausano has been one of the first companies to realize the potential of this new material and to create extruders and complete lines specifically designed for WPC. Bausano stands out for its POLYWOOD technology, that was

implemented and improved year after year precisely to extrude profiles directly from different types of raw materials.

Not only wood dust then, but also avocado stones, rice husks, almond shells, cork and other vegetable scraps which, when mixed with polymers such as PVC and PE, become composite wood, or WPC.

With many advantages, starting from long durability, but not only that. WPC is a pleasant-to-touch surface, ideal for outdoor flooring and walkways, besides being waterproof and non-slip. It does not deform or crack, can resist any weather condition without deteriorating, and is maintenance-free. In addition, it does not age due to the action of UV rays and is not attacked by woodworms, insects, moulds or fungi.

These are all major features, but the most important one is that WPC is completely recyclable and can be recycled and extruded to be converted into new products. A 360-degree eco-friendly material, produced without releasing harmful substances into the environment, which does not require using paints or chemical treatments, and allows for fewer trees to be cut down, thus reducing the use of wood in building and industry.

Today WPC is a smart, cost-effective and, above all, responsible choice in terms of sustainability. A solution that is already an awesome reference for the world of design, thanks to its ability to adapt to any style, from the classic to the modern one, with unlimited applications and surprising aesthetic results.



100%
RECYCLABLE

After use, WPC can be recycled, extruded and converted into a new product.



Better than wood

One of the great advantages of the WPC manufactured with Bausano POLYWOOD technology is that it can be obtained from many materials, with no composition constraints.

VEGETABLE COMPONENT

Wood powder, bamboo powder, avocado stones, almond shells, palm scraps, cork, rice husks.

SYNTHETIC COMPONENT

PVC, PE, PP, PLA



The applications

Thanks to its characteristics, WPC is the most effective solution for external surface in direct contact with water or subject to natural wear and high mechanical stress.

DECKING & FLOORING

Flooring for verandas, courtyards, pool areas, interior flooring, coverings and waterproofing.

WALL CLADDING

Expanded and unexpanded decorative claddings for indoor, outdoor or facade walls.

DOOR & DOOR FRAME

Fixtures, solid doors, flush doors, folding doors and sliding doors for exteriors and interiors.

GARDEN FURNITURE

Outdoor furniture, benches, tables, chairs, armchairs, sofas, garden huts and sets.



RESYSTA. A NATURAL FIBER COMPOUND.



BETTER PRODUCTS FOR A BETTER WORLD

RESYSTA AND BAUSANO TOGETHER FOR THE ENVIRONMENT

60% rice husks, 22% common salt, 18% mineral oil. This is the formula of Resysta, the innovative blend created by the same-name German company that reproduces a wide range of precious tropical woods, both in appearance and to the touch.

Identical to wood but completely wood-free, Resysta is the material of the future, which meets the new demands of sustainability while ensuring higher performance.

Its special composition makes it completely waterproof and resistant to sun, rain, snow and salt water, without any risk of breakage, chipping or deformation.

Resysta's beauty never fades, and this quality makes it the perfect solution for outdoor flooring for verandas, terraces, swimming pools, piers, boat decks and much more. Thanks to the great aesthetic appeal and tactile sensations which are typical of wood, the applications are truly endless, from doors and windows to outdoor supplies, from exhibition fittings to outdoor claddings, from wellness areas to interior design.

Obtained from reusing production waste and 100% recyclable, Resysta is the smartest alternative to wood: a versatile, cost-effective and environmentally-friendly material.

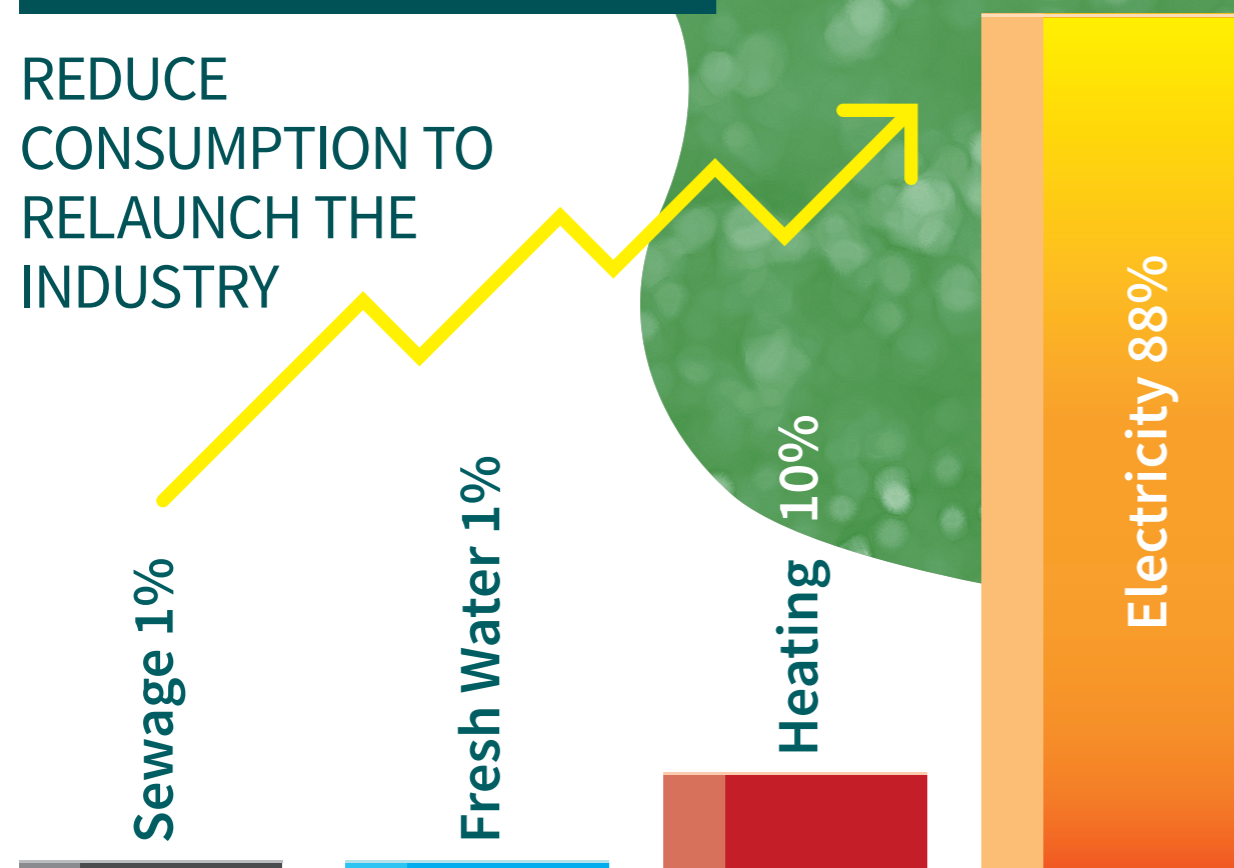
Resysta was created to replace the use of wood from tropical areas - a huge turnover, estimated at around 50 billion euros a year - and thus to curb the plague of rainforest deforestation. A noble cause which encouraged many companies manufacturing machinery for the plastic industry to join the project.

Staying ahead among these companies, Bausano has recently developed complete lines of extruders and accessories optimized for the characteristics of Resysta, with the aim of creating eco-friendly and higher quality profiles and products. With a view to innovating and actively contributing to safeguarding the planet.



ENERGY: A RESOURCE TO INVEST IN

REDUCE
CONSUMPTION TO
RELAUNCH THE
INDUSTRY



According to a recent study conducted within the motor project, which involved small and medium-sized enterprises in the manufacturing sector throughout Europe, it has clearly emerged that electricity is the main variable cost.

Machinery, lighting, heating and refrigeration are just some of

the items: for plastic processing industries, energy ranks third among the budgeted costs on average.

A fact that must make us reflect on the need to adopt virtuous practices and more advanced and efficient technologies, in order to be able to optimize the available resources and thus reduce consumption.

The objective is twofold: on the one hand, increasing the company's economic performance to become

more competitive on the market; on the other hand, reducing the impact on the environment, by absorbing less energy from the mains and by cutting waste.

So let us see how to reduce energy consumption while improving productivity.

1. The choice of the extruder

Choosing the right instruments is the first step in optimizing the processes and in limiting electricity costs. For example, using a large extruder to produce small profiles is a waste of energy and money: each polymer and each mixing requires extensive testing to determine which solution is best based on technical

characteristics and screw geometry.

Speed is also a parameter to consider: the consumption of an extruder is reduced to the minimum when it operates at the maximum speed for which it was designed, that corresponds to the point of greatest mechanical efficiency.

Among the main factors we certainly must not forget the age of machinery and the conditions of wear, which can lead to greater energy dispersion and therefore to significantly higher costs.

But even if they are new, extruders are not all the same and the solutions available on the market are several and different. The MULTIDRIVE system, introduced by Bausano in the early Eighties, allows cutting energy consumption for the same performance, subdividing the torsional effort and the torque onto the driveshafts. A technology that is still the core of Bausano's twin-screw extruders.

2. The motor

In 2017, the IEC (International Electro-technical Commission) made the IE3 standard mandatory for the electric motors installed on extrusion lines. This is a significant step forward in terms of technological adaptation, but there are already instruments capable of guaranteeing significantly higher levels of energy efficiency.

The new Bausano Nextmover lines are, in fact, equipped with synchronous IE4 motors, which are more compact and dynamic and feature much higher efficiency if compared to traditional

asynchronous motors, which are controlled by an inverter and resulted excellent in the entire speed and load range.

An investment that translates into immediate energy savings of 5-8% and which in turn is a new and valuable resource for the company growth.

3. The barrel heating system

In extrusion lines, the barrel is traditionally heated by direct contact with electric resistance heating elements. A system that has a number of limits, first of all high dispersion as well as high thermal inertia and poor uniformity of heat on barrels.

With this method the temperature of the material always remains around 20 °C lower than that of the barrel, and it is difficult to achieve energy efficiency levels above 70%.

By applying the principles of electromagnetic induction to the extrusion process, Bausano created Smart Energy System, the first contactless barrel heating system. The metal is exposed to an alternating electromagnetic field generated by special coils that line the barrel and produce parasitic currents at the inside (also called Foucault currents) through the movement of the magnetic field and which, in turn, generate heat leaving the outer surface cool to the touch.

The result is faster and more uniform heating of the barrel and thus of the processed material, which can reach



HOW TO REDUCE ENERGY CONSUMPTION?

higher temperatures this way. But the real advantage concerns the efficiency standard, which can reach 95%, for a 35% net energy saving.

4. Monitoring of consumption

In order to be able to reduce energy waste and optimize production, it is necessary to accurately know the consumption of each single phase of the process, in order to identify the weak points and malfunctions and take actions accordingly.

Not an easy task considering the size and complexity of some machines and the need to avoid costly downtime to disassemble, examine and test individual components.

With the aim of providing companies with a reliable screening tool, Bausano developed Digital Extruder Control, a system for monitoring the energy performance of the extruder and of the whole end of the line.

A highly innovative technology that meets the most recent vertical integration requirements provided for by Industry 4.0.

All parameters can be viewed in real time and it is possible to intervene at any time, even remotely, in order to manage the power of the motors, the temperature control, the definition of alarms and safety thresholds and to consult and store

data and consumption statistics. In conclusion, if we want to reduce electricity consumption in the industry, there are several points to leverage and wide margins for improvement. Everything is played out on the innovation and quality of the technologies used: the higher the quality and energy efficiency of these technologies, the safer and more profitable the investment for the company.



THE WORLD MARKET OF PLASTIC

MATERIALS, TRENDS AND NEW OPPORTUNITIES

The plastic market has changed a lot in recent years, in terms of materials used and fields of application. Despite the awareness campaigns aimed at reducing the use of plastic and promoting its more responsible use, there are many sectors in which this material is still the most efficient, economic and also the most sustainable solution compared to the available alternatives.

According to the latest report by PlasticsEurope, in 2017 world production of plastic reached 348 million tons, of which over 64 million were produced in Europe.

In the old continent alone, the plastics industry employs more than one and a half million people, for almost 60,000 companies and a turnover of over 350 billion euros, with assets of over 17 billion.

With a percentage of 14%, Italy ranks second in Europe, behind Germany and ahead of France. Among target sectors, packaging records the largest market share, almost 40%, followed by building with 20%.

The most used materials are polyolefins, accounting for an overall 49%, including polypropylene (19.3%), low density polyethylene (17.5%) and medium and high density polyethylene (12.3%). PVC slightly exceeds 10%, while PET

and other materials show lower percentages.

Analysing the demand, it emerges that there is enormous potential for Italy to expand its share of exports, not only towards the largest markets, such as China, the United States and South America, but also towards other European Union Countries.

An opportunity not to be missed for Italian companies, investing in new technologies and more performing lines in order to diversify the offer and thus serve such different sectors with innovative and highly efficient products.

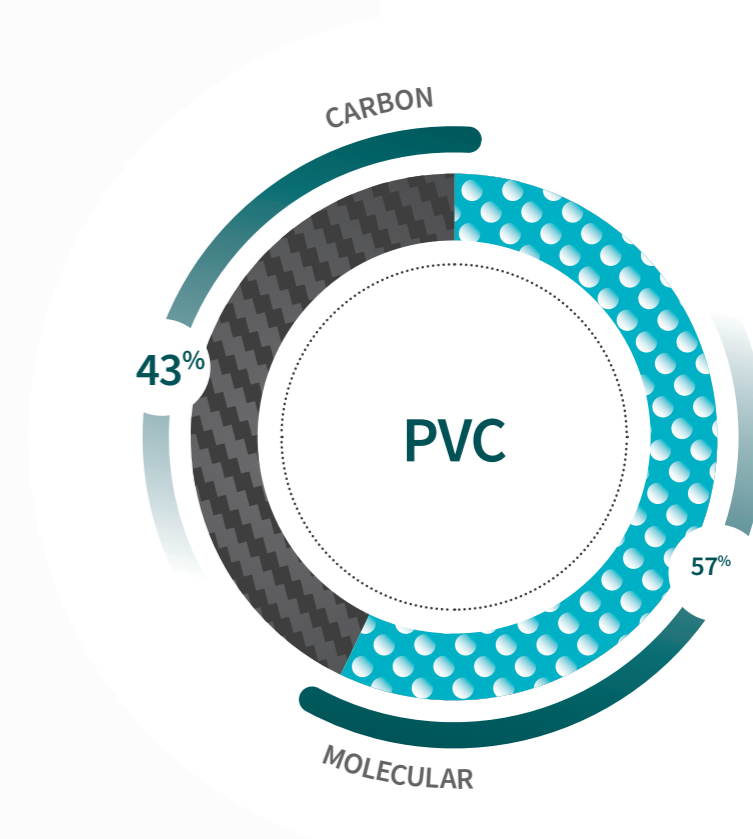
PVC

The advantages of a material with a great added value

Due to its versatile nature and great affordability, polyvinyl chloride, commonly known as PVC, is one of the most widely consumed plastic materials in the world. By 2021 the total market value on a global scale is estimated at 72.33 billion dollars.

Composed of 43% carbon (derived from petroleum) and 57% chlorine (obtained by electrolysis from salt water), PVC comes from components of natural origin: through the polymerization process a resin is produced which is subsequently mixed with special additives and pigments that give the material the desired properties.

The sector that absorbs most of the production is construction,



which offers an increasing number of applications for which PVC is preferable from various points of

view if compared to traditional materials such as metal or wood, as well as being completely recyclable.

The advantages of PVC



LIGHT AND RESISTANT

Despite its low weight, PVC is extremely resistant to mechanical stress, abrasion, wear and corrosion, characteristics that increase its durability and possible applications.



EASY TO INSTALL

Compared to heavier and more delicate materials, such as wood and iron, PVC is easier to transport and makes laying operations simpler and faster, with consequent savings also in economic terms.



VERSATILE

The physical properties of the material offer total design freedom, in terms of shape, colour, size and technical characteristics, to optimally adapt to any construction requirement.



PROFITABLE

Second among the most widespread polymers, PVC is also among the cheapest to be produced and guarantees higher performance than that of most alternative materials.



SAFE AND SUSTAINABLE

Used, studied and tested for over 50 years, PVC meets the main international safety standards and allows being separated, recycled and converted into new products better than other plastics.

WATER PIPES

they cost less than those of iron and they last much longer (up to 100 years), they are easier to install and, being PVC inert, they are not subject to rust, corrosion or other state alterations, thus eliminating the risk of water contamination.

PROFILES FOR WINDOWS

they are better in terms of affordability, resistance to corrosion and minimum need for maintenance, but the most significant feature is certainly its better insulating capacity, which means substantial energy savings.

CABLES AND ELECTRICAL APPLICATIONS

PVC is an excellent insulator, it can withstand very high and very low temperatures and it is fireproof, in addition to being able to optimally resist time and wear.

ROOFS, FLOORS AND WALLS

in places like hospitals, gyms, commercial kitchens and wherever, hygiene conditions are a priority, floors and walls for roofs and vinyl walls are the most common solution, because they are waterproof, resistant and easy to clean.

In terms of hygiene and safety, there is another sector in which PVC has been the reference material for decades. In the medical and pharmaceutical field, in fact, 40% of all devices are made of rigid and flexible PVC: bags, tubes, containers, disposable gloves, filtration devices, connectors, cannulas, blisters and much more.

In addition to resistance and low cost, key properties are biocompatibility, transparency and chemical stability, indispensable requirements in the health sector.



Today, PVC confirms itself as one of the most efficient solutions in many fields of application: a material which is capable of offering great added value with a limited environmental impact, in terms of CO2 emissions and energy expenditure.

Extruders for PVC

Busano offers a complete range of twin-screw extruders and down stream for converting PVC into tubes, granules, profiles and other superior quality products, all equipped with the MULTIDRIVE system for maximum efficiency and lower energy consumption.



Polypropylene (PP)

An evolution which lasted more than half a century



With almost 20% of the market and estimates that have seen it in net growth over the next few years, polypropylene (PP) is the second most widespread plastic type in the world. Synthesized for the first time in 1954 by chemistry Nobel Prize winner Giulio Natta and introduced on the market by Montedison in 1957, PP stands out for its ease of processing, low density and relative cheapness compared to other similar materials.

Recent technical developments elevated the quality of polypropylene, thus paving the way for market shares traditionally reserved for other polymers. Its strength is undoubtedly its resistance to acids, to chemical agents in general and to heat: PP, in fact, is able to maintain its properties unaltered even in extreme use conditions, with temperatures up to 120 °C.

A plant set up with polypropylene pipes offers a higher level of safety, by reducing the need for repairs of ordinary and extraordinary maintenance: advantages that have been attracting the interests of the petrochemical, construction and automotive sectors for some time.

Furthermore, being a colourless and odourless material, PP can be used to make pipes and tubes for transporting drinking water, and it ensures high hygienic conditions and great durability.

PP pipes: main applications

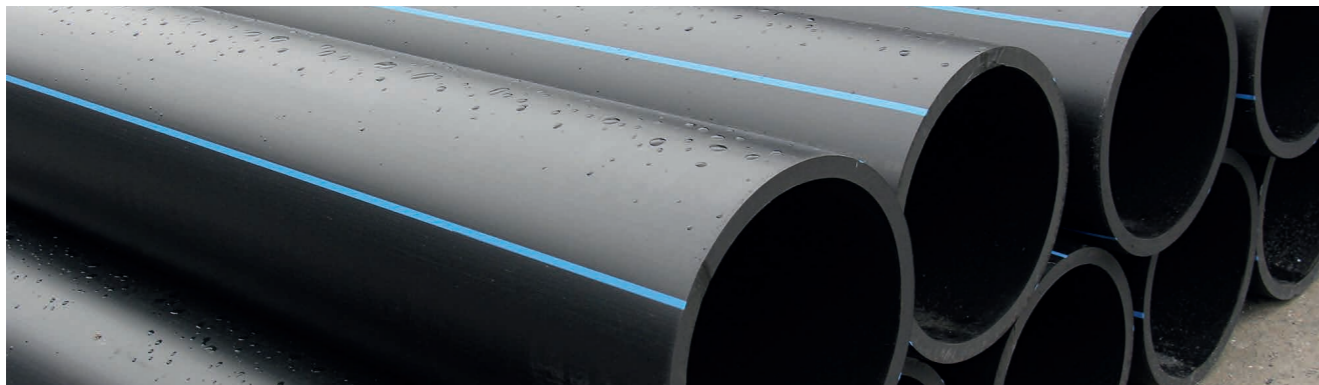
- Transport and water treatment
- Sewer pipes
- Water cooling and supply
- Chemical and petrochemical systems
- Pickling and electrodeposition
- Semiconductors
- Fire prevention systems
- Agricultural sector

The advantages

- Exceptional resistance to corrosion and to the action of chemical agents
- Ideal for extreme conditions of use
- Properties unchanged up to 120°C
- Easy to weld and work
- Suitable for different transformation processes

Polyethylene (PE)

Much more than simple plastic



With over a third of the world market, polyethylene (PE) is the plastic par excellence, it's the most widespread and the most present in everyday life. It is the plastic with which supermarket bags were made and which is still used to produce cosmetic bottles, children's toys and thousands of everyday objects.

Among the plastic materials it is maybe the most versatile, thanks to its particular structure that is the simplest one of all commercial polymers: the molecule, in fact, is made up of a single chain of carbon atoms, each of which is linked to two hydrogen atoms.

In the polyethylene family there are numerous variants, of which the most widespread are HDPE (high density polyethylene) and LDPE (low density polyethylene).

Focusing on the pipes market, HDPE is the one that has been growing the most over the last two decades thanks to its superior specific strength and its ability to withstand very high temperatures (up to 110°C with peaks of 120°C).

Features that have transformed it into a product suitable for the construction of various types of piping aimed at the transport of

pressurized fluids, natural gas, geothermal heat and other hydraulic applications. Among the most recent ones, there is the transport of drinking water, where HDPE is now often preferred to cross-linked polyethylene (PEX) because it is easy to weld (therefore more resistant to infiltration) and more flexible. And it is recyclable, a feature that makes it preferable to solutions with greater environmental impact.

PE pipes: main applications

- Pressurized water transport
- Underwater pipelines
- Sewer pipes
- Irrigation systems
- Transport of fuel oils and natural gas
- Geothermal sector
- Telecommunications
- Mining industry
- District heating
- Coatings and insulation for special pipes

The advantages

- Shock and abrasion resistant
- Resistant to corrosion of chemical agents
- Easy to work and weld
- Stable in terms of size
- Low friction coefficient



Extruders for PP and PE

The new Bausano E-GO single-screw extruders are designed to process thermoplastic polymers such as polyolefins (PP, HDPE, LDPE, MDPE), styrene polymers, methacrylates and polycarbonates, for the production of tubes, medical bags, profiles and other technical products, rigid and flexible.

TOOLS FOR TOMORROW



EXTRUSION TECHNOLOGIES AND FUTURE APPLICATIONS

The evolution of the plastic processing sector has undergone a significant acceleration in the last period, determined by the new requirements in the environmental field and by the discovery of new, more efficient and safer materials.

For over 70 years Bausano has been involved in innovation, by designing and manufacturing reliable, high-performance and safe instruments for the extrusion of plastics, with the aim of offering support to companies to let them increase productivity and reduce energy consumption, with benefits both in terms of profit and of sustainability.

Three innovations for 2020:

- **MD Nextmover** evolution of the famous MD Plus twin-screw extruders with MULTIDRIVE technology;
- **E-GO** the new family of single-screw extruders for different applications;
- **MD 30** the new version of the more compact Bausano model, designed for testing and laboratory applications.

Innovative technologies bound to become a model to be followed for the entire sector, designed to raise the quality standard of processes and of the final product, offering important strategic resources and new development opportunities.



NEXT mover

MD Nextmover

A new generation of twin-screw extruders

Created to continue the renewal path inaugurated with the MD Plus technology, the new MD Nextmover extruders make a further and significant step forward towards a greater efficiency and sustainability of the industrial processes.

Power and durability are always guaranteed by the MULTIDRIVE system, which reduces the stress on mechanical components by distributing the torsional effort on two pairs of counter-rotating motors, while the new IE4 motors ensure up to 8% less consumption.

Consumption that drastically decreases also thanks to the induction heating of the barrel, which offers less dispersion and requires less energy by distributing heat evenly and increasing both production and energy performance.

Moreover, the entire process is always under control through the Bausano Digital Extruder Control system, which provides a real-time analysis of the entire plant, with the possibility of intervening to modify the parameters at any time.



E-GO

Single-screw technology has a new standard

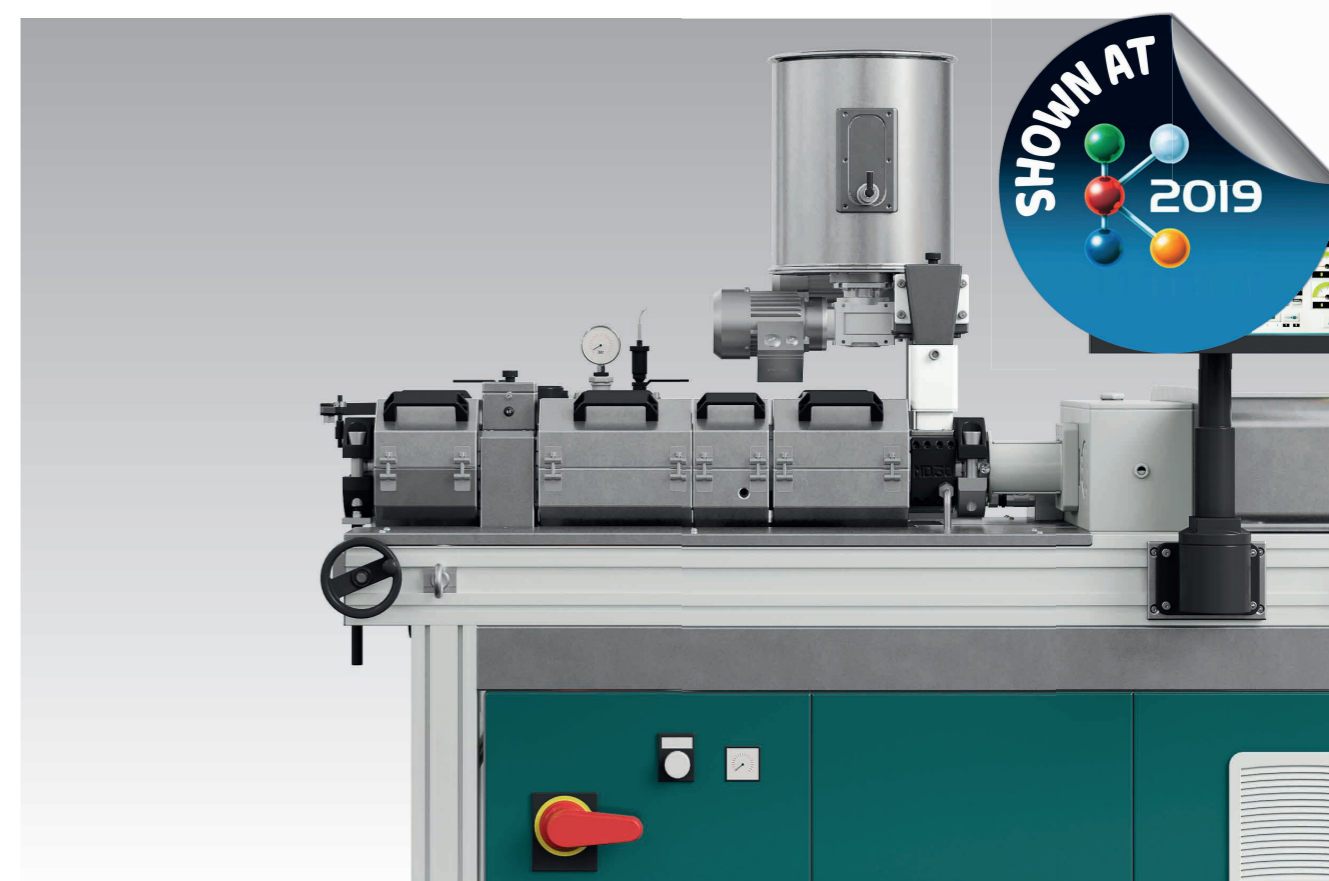
Designed to process a large number of different polymers - such as PP, PE, PO, ABS, PMMA, PVC and many others - the new single-screw extruders of the E-GO series are advanced, powerful and extremely compact.

Everything is based on the geometry of the screw, completely customizable to optimize the torque and increase the level of efficiency

of the extruder, with the possibility of processing even materials such as polyolefins at low temperatures.

An advantage that means large-scale production volumes with the consumptions and dimensions of a small extruder, also reducing the frequency of maintenance operations.

The E-GO extruders are equipped with Digital Extruder Control technology, with which it is possible to manage and monitor every phase of the process in real time, even remotely.



Moreover, the **Digital Extruder Control** allows to:

- ⊕ monitor all extrusion parameters in real time also in remote mode;
- ⊕ programme the automatic synchronism for production, maintenance and diagnostics;
- ⊕ save the configuration to the memory module;
- ⊕ save the selected parameters, upon request or at preset intervals.

MD 30

Prêt-à-porter performance and versatility

Before starting a large-scale production it is necessary to conduct tests and analysis on the materials to set up the processing optimally. The Bausano MD 30 extruder allows to carry out pilot tests, samples and experiments on small quantities in a practical and fast way.

The two inlet feeding holes on a single barrel with pressure probes positioned laterally allow more

materials to be processed with a single hopper and also to regulate the flow of water entering the cooled areas.

In addition, MD 30 is equipped with wheels, which facilitate movement, and thanks to the wider degassing, every cleaning or inspection operation is simple and immediate.

But the advantages do not end there: by exploiting the potential of the Digital Extruder Control system it is possible to monitor all the parameters in real time, program the automatic synchronization of production, maintenance and diagnostics, save the various configurations on memory modules and print or save the parameters as desired.



EXTRUDERS AND RETURN ON INVESTMENTS

WHY INVESTING
IN A **NEW**
PRODUCTIVE
LINE IS
CONVENIENT



One of the most useful indicators for calculating the effectiveness and security of an investment is ROI - Return On Investment - which measures the ratio between investment and expected return.

According to the formula, the ROI is equal to the difference between the gain and the cost of the investment (net return) divided by the cost.

The result is a value expressed as a percentage that allows, among other things, to compare completely different investments and to guide decisions in a better way.

To give an example, if a new machine needs an investment of 100 thousand euros but it guarantees an increase in turnover of 120 thousand: $(120,000 - 100,000) / 100,000 = 20\%$ return on investments, equal to a 5-year payback period.

When it comes to industrial plants, such as extrusion lines, we face difficult strategic choices, because the investment involved is often huge and there are many variables to be taken into account in the evaluation of an instrumental asset.

To achieve a high ROI, there are basically two roads: either increasing production levels, focusing on machine power and performance, or containing ordinary management costs, such

as electricity consumption and maintenance, thus relying on more reliable solutions able to have less impact on the energy balance of the company.

So then the choice to replace an old plant with a new generation can really make a difference and transform a cost, albeit significant, into a resource capable of turning into profit in the medium term.

HIGH PERFORMANCE TECHNOLOGIES

BAUSANO SOLUTIONS FOR BUSINESS DEVELOPMENT

Bausano's research has always been focused on the development of technologies designed to guarantee a high return on investment and to allow companies that transform plastics to grow in a profitable and sustainable way.

Technologies such as the MULTIDRIVE System, the new IE4 motors, the Digital Extruder Control and the Smart Energy System, which

combine extremely high efficiency, reliability, solidity over time and a substantial reduction in energy consumption.

Concrete and valuable advantages, which translate into immediate productivity and lower general costs. This is why the purchase of a new extruder must be seen not as a problem to be solved, but as an opportunity to renew assets and promote the development of the company.





THE UNPLANNED MACHINE DOWNTIME

THE RISKS, HOW MUCH IT COSTS AND WHAT IT MEANS FOR THE COMPANY

In the plastic processing sector, and in the manufacturing industry in general, an hour of plant shutdown can cost thousands of euros.

And this if you only consider the lack of production, as if the cause was an ordinary inspection or maintenance operation. When it comes to failures or other unplanned problems, the parameters we have to take into account are many and the damage to the company can be much more substantial.

Here is a summary of the main cost items:

ASSISTANCE

It has a very variable impact depending on whether or not a contract was signed with the machine manufacturer. Being an hourly cost, the longer the intervention is prolonged, the more the expense for the company grows.

SPARE PARTS

How soon will they be available and installed? The most significant factor is not really the cost of spare parts (which can be high anyway), but rather the time needed to find them, which can make downtime considerably longer and more expensive.

COST OF LABOUR

If it is a brief intervention, it is possible to move the extrusion line operators to other tasks (less specialized) in order to limit damage, but if the shutdown is

longer, this solution is not very efficient and it can even weigh a lot in economic terms.

OVERLOAD OF OTHER DEPARTMENTS

To supplement a shutdown line, often the only solution is that of increasing the production of the other lines, thus bringing the machines to the limit and increasing the risk of inconveniences. Added to this is the greater stress for the staff (forced to work overtime) which can lead to more frequent mistakes with serious consequences.

OUTSOURCING

The company can decide to turn to external suppliers to carry out what it can no longer manage internally, with the aim of respecting deliveries and avoiding problems with customers. But this has a cost, to which the time necessary for the

search for the supplier and for the supervision of the work must be added.

NON-DELIVERY OR DELAY

The consequences of a delay or failure to deliver depend on the relationship with the customer, on the value of the supply, on the urgency and on the damage caused. Probably the company will be forced to pay a penalty and often even lose the client.

IMAGE DAMAGE

Inefficiency is not just an immediate cost, but it also affects the company's reputation on the market and with suppliers, over the long term, and also its employees, who will lose confidence in Management. Damage that can be very difficult to remedy.

no risk plan

In order to minimize the economic damage and the negative consequences of a machine downtime, Bausano has developed a prevention program for all its customers.

It is called **NO RISK PLAN** and provides customized packages - based on the machinery models and on the type of production - for the supply of spare barrels and screws, always available on site, with the aim of dealing quickly with any failure or technical inconvenience.

Anyone who chooses to join the program can benefit from a special price for barrels and screws, a 15% discount on spare parts with technical support and 3 years of assistance and annual maintenance included.



THE BAUSANO PROGRAM AGAINST PLANT SHUTDOWNS



Powered by

bausano
Your Extrusion Allies

Tailor made solutions.



NEW VS SECOND HAND

6 PRACTICAL TIPS FOR MAKING THE RIGHT PURCHASE



In order to guarantee performance, efficiency and continuity to the production, it is necessary to choose the right machinery: a difficult task due to the availability of different solutions on the market with the most varied prices. Here are some tips on what we need to consider carefully, so as not to make a bad investment.

1 CURRENCY COST AND BENEFITS
Will the new machinery increase productivity? What advantage will it bring in relation to competition? Can I achieve the same goal with simple technical upgrade?

2 INVEST IN DIGITAL INNOVATION
One of the most important competitive factors is the ability to eliminate downtime and optimize production. The new digital technologies represent the best

solution because they allow you to monitor everything and to predict the necessary interventions in great advance.

3 CREATE A ROADMAP TECHNOLOGY
Isolated purchases do not pay over the long term: we must consider needs and objectives as a whole, using analytical tools such as technological road mapping, which allows us to identify the alternatives and the most suitable tools for the development of the company and to establish a timeline for investments.

4 SEARCH ON THE WEB
Do not limit your search to usual suppliers: the web offers you the possibility to evaluate and compare offers from all over the world. Do not only rely on the price in your selection, but also consider elements such as after-sales services and the reputation of the seller.

5 PURCHASE, LEASING OR RENTAL?
Buying is not always the most appropriate choice: in the case of machinery subject to

rapid obsolescence or for temporary production, it may be advantageous to choose more flexible and less expensive methods in the short term, such as renting or leasing.

6 CHOOSE SUSTAINABILITY
Always choose high energy efficiency solutions, which are able to save you electricity and to increase the level of production sustainability. Also, do not forget to dispose of old machinery correctly, so as to minimize the impact on the environment.



OPEN DAY BAUSANO



"We are machinery manufacturers - explained Vice-President Clemente Bausano on the occasion of one of the last appointments - and we feel motivated to develop an environmental awareness addressed both to the re-use of plastic materials and to encourage an energy-sustainable production."

But open days are also an opportunity to offer everyone the chance to visit and learn about the Bausano test room, a state-of-the-art laboratory for testing extruders, down stream accessories and materials, always at the complete disposal of customers.

"We have great ambitions, which are not limited to numbers, turnover and market shares - the Vice President declared at the end of the day - and we would like to go on basing on optimism. We think, in fact, that the global market of the sector is still full of opportunities and of customers who want to invest and grow, as we do."

DOORS OPEN TO THE FUTURE OF EXTRUSION

The open days at Bausano are now a regular appointment reserved for customers, partners, suppliers, journalists and sector operators. Days which are entirely dedicated to the world of plastic processing and which are aimed at learning about all the

news and sharing ideas and useful information. The common denominator is the reduction of energy consumption, through the development of more efficient and more sustainability-oriented solutions.

A consideration that ends with an appeal to all the operators in the sector: "For this reason - as Bausano encourages - we are asking everyone to join us and help us imagine **the future of extrusion together**. In this way, we are sure that results will come."



A LIFE IN THE COMPANY

80TH BIRTHDAY FOR ERALDO BAUSANO



A surprise party in the park of the historic headquarters in Corso Indipendenza: this is how employees and collaborators of Bausano and Figli Spa wanted to celebrate their President's 80th birthday.

80 years lived as a protagonist, first on his father's side and then at the helm of the company, to eventually give it up to Bausano's third generation.

"There are people who manage to become a lighthouse, a symbol in the course of their lives - as you can read in the dedication written by the employees - somehow like the mountains we have behind us. It doesn't matter whether they are covered with snow or stand out in the sun: they are always a reference for us."

Words that perfectly match Bausano's familiar image. A reality where the term "family" should be understood in a broader sense, in order to include all those who in 70 years have been working

and dedicating their lives to the construction and growth of the company.

For all these people Eraldo Bausano was and still is an example of how business can be done in an ethical and responsible way, always putting human values and relationships before profit.

"I want to thank everyone for this party," the president concluded, "it has been a wonderful surprise. I am very happy to share this moment with all of you, my lifelong companions."



RUN FOR THE OCEAN

RACING AGAINST POLLUTION OF THE SEAS

RUN FOR THE OCEANS

The initiative launched by Adidas in collaboration with Runtastic has been called “a race to rid the seas of plastic” and has now become a global movement.

Its objective is to raise awareness concerning the problem of ocean

pollution, a threat measured at around 8 million tons per year, that is to say the equivalent of an entire truck of plastic waste discharged into the sea every minute.

After the success of last year, which allowed us to raise one million dollars through sport, the goal of 2019 is even more ambitious: exceeding one and a half million by

contributing to the well-being of people and the environment. But here is how the initiative took place: running enthusiasts from all over the world were invited to download the Runtastic app and for every kilometre run, from 8 to 16 June, Adidas promised to donate a dollar to the programs of education against marine pollution due to plastic.

Also Bausano decided to take part in order to show its sensitivity to the issue and play its part in safeguarding the oceans, a precious asset that everyone must commit to defending, primarily those who work in the plastic industry.

28 participants, who found themselves together after work - or away from their respective locations

around the world - to travel 227 kilometres in total.

Out of 90 employees, almost a third decided to dedicate some of their free time to the initiative. A small but important contribution, as well as an opportunity to socialize and share a goal that everyone is feeling as a priority.

The Participants

Sales Team

Domenico Baudino
(5 km in the centre of Lima),
Gianmarco Palladino
(10 km in Guatemala City),
Alfeo Bonato,
Giorgio Critelli,
Roberto Sardella
and Andrea Arbarelli

Marketing Department

Alessandra Grosso,
Marco Rizzuto

Technical Office

Giovanni Bausano

Simone Reale,
Mirko Grosso,
Franco Tappari,
Aldo Martinetto
and Mario Chiapetto

HR Department

Valentina Pantano

Technical Service and After Sales

Fabrizio Rampone,
Ivan Vercellino,
Yuri Ronchi,
Fabrizio Giachin Ricca,
Ivan Grosso,
Luca Intravartolo,
Constantin Croitoru,
Frediano Turigliatto,
Alessandro Ruotolo,
Luca Di Dellagrottella
and Samuele Sartori

CFO

Valentina Bausano (from London)

Vice President

Clemente Bausano

inside**extrusion**
THE PLASTIC TECHNOLOGY MAGAZINE



www.bausano.com