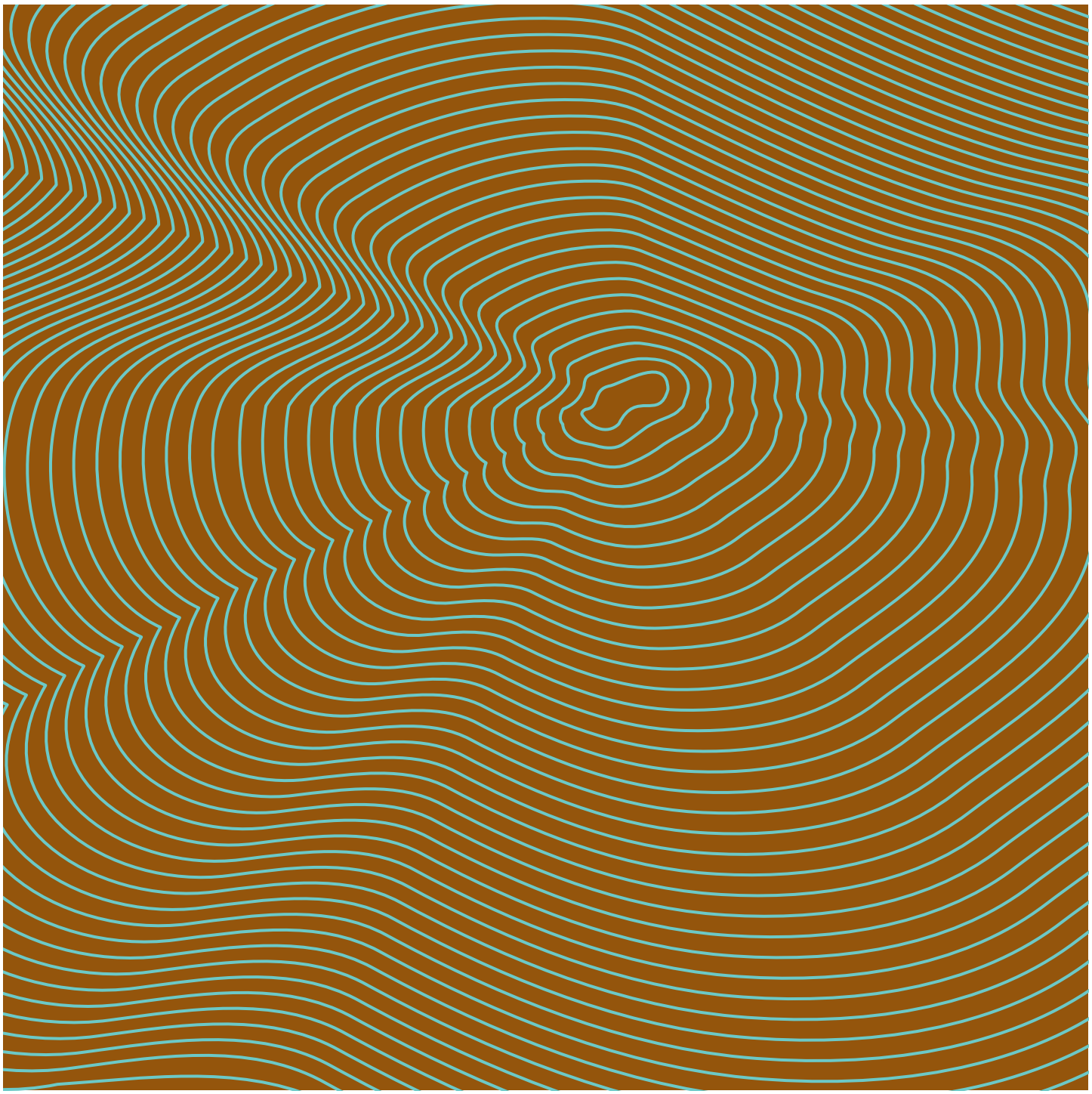
Bausano

WPC
extrusion lines

Bausano's WPC extrusion lines create eco-friendly, durable materials for decking, cladding, and furniture, combining wood's look with plastic's strength. They also enable the production of WPC compounds and pellets.



WPC
extrusion lines

Bausano
Extrusion instinct

Efficient. Customizable. Ahead.

WPC granules made from a blend of plastic and wood fibers: a sustainable, versatile solution ready for further processing.



WPC compounds extrusion lines

Bausano designs and manufactures complete extrusion lines for the production of WPC compounds, offering customised solutions for transforming wood and vegetable fibers with recycled polymers into high-quality pellets. Each system is developed to ensure process stability, energy efficiency and constant output, even with demanding formulations.

WPC compounds – thanks to their renewable composition and mechanical properties – are increasingly used in applications that require strength, environmental responsibility and design flexibility. The raw materials include vegetable fillers such as wood flour, rice husk or other organic waste, combined with polymers like PVC, PE, PP or PLA. These components are blended and extruded to obtain pellets with defined shape, density and excellent processability.

Bausano compounding lines use parallel counter-rotating twin-screw extruders, engineered to provide thorough mixing, precise temperature control and optimal fiber encapsulation. Integrated systems for dosing, degassing, filtration and cutting ensure the production of uniform WPC pellets, ready for further processing through molding or extrusion.

Efficiency and sustainability in one process
The entire line is managed via advanced automation systems that monitor all parameters in real time, improving repeatability and reducing material loss. The result is a high-performance, recyclable compound that supports circular production models. With Bausano, sustainability and industrial efficiency are part of the same process: the WPC pellet becomes a smart and reliable material, fit for the challenges of today's manufacturing needs.

Parallel twin-screw extruder series

The extrusion process enables the production of WPC compounds. Bausano offers complete extrusion lines specifically engineered to meet the geometric and processing requirements of each WPC formulation, ensuring precision, efficiency, and material consistency.

Bausano develops parallel twin-screw extrusion lines specifically designed for the production of WPC (wood-plastic composite) compounds.
The systems ensure precise processing of natural fibers and recycled polymers, delivering consistent plasticising and high-quality pellet output.
The twin-screw configuration allows for optimal mixing and temperature control, ensuring stable performance. Each line can be customised in length and motor configuration to meet specific compounding needs, offering high flexibility and efficiency across various production scales.

MD Series: parallel twin-screw technology

Parallel twin-screw technology with high specific output for gentle plasticization.

Optimized material feeding system for stable production of WPC.

Optimized screw design and tailored to customer needs.

Patented Multidrive system reduces stress on motor shafts, gears, and screws, with a positive impact on both precision and energy savings.

AC motors for low energy consumption.

Induction barrel heating system for more efficient heating and reduced heat loss.

IoT technologies enable full monitoring and analysis of production parameters, with a special focus on improving energy efficient across the entire extrusion process.



TECHNICAL DATA			
Models	**MD 118**	**MD 130**	**MD 158**
Screw diameter (mm)	118	130	158
L/D ratio	30	30	30
Heating zone	8	10	10
Cooling zone	4	6	7
Total power (kW)	210	260	338

Data contained in this catalogue are purely indicative and may change.

WPC pelletizing die head

Bausano's extrusion heads for granule production are specifically engineered to ensure excellent material distribution across the die plate.
Whether working with virgin polymers or recycled materials derived from production waste, the heads are designed to support optimal process stability and output quality.
The geometry of the flow channels is optimised to prevent stagnation and ensure uniform feed, even with challenging formulations.

Main advantages

1
Heads designed for quick opening and direct access to internal parts.

2
Cleaning is faster and requires less disassembly.

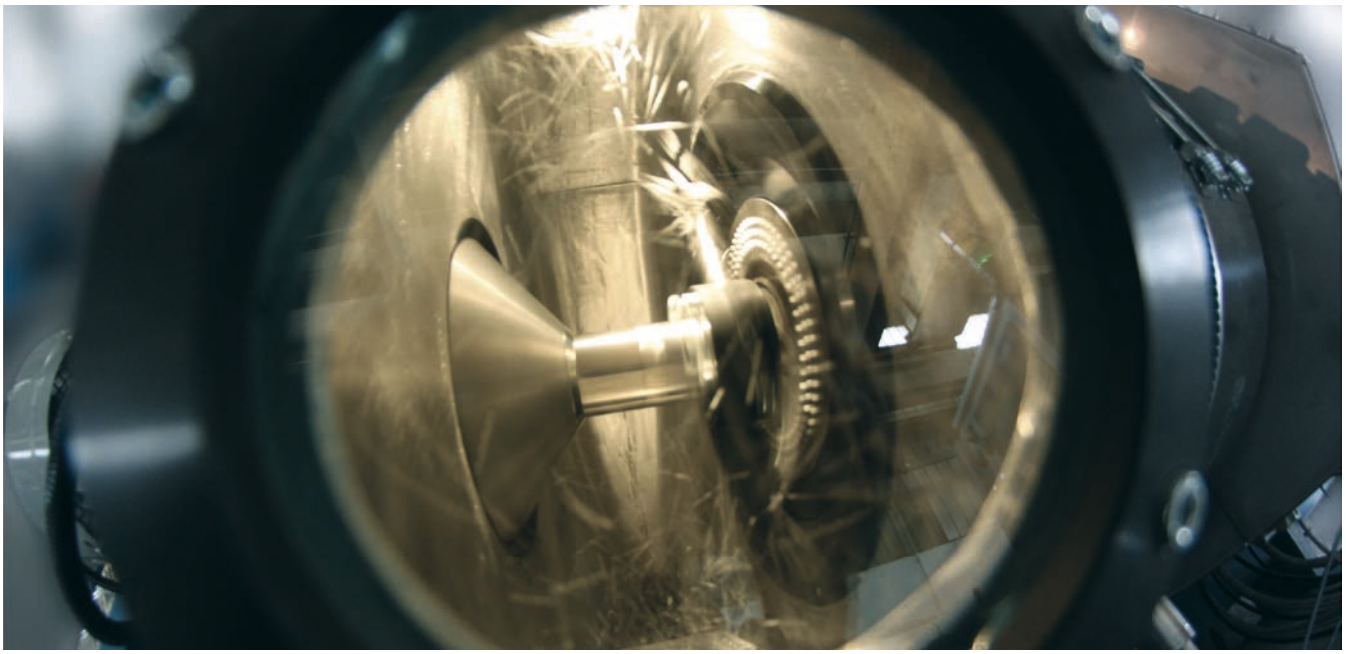
3
Fast maintenance enables quick material or color changes.

4
Efficient design improves output and line continuity.

5
Less downtime and easier handling increase cost-efficiency.

6
Developed with Bausano's compounding expertise for stability and compatibility.

Cutting and cooling system



Cutting system
To complete its extrusion lines, Bausano provides cutting systems designed for precision and efficiency. The system integrates three blades on a self-centring ball joint, ensuring uniform contact and pressure on the granulating surface.
This configuration reduces pellet variation and simplifies blade alignment. The motor is controlled directly from the extruder panel via an integrated inverter, allowing precise speed management based on material type. Forced air cooling, enclosed in a dedicated casing, maintains optimal cutting temperatures. An internal light offers full visibility of the cutting zone, enabling real-time inspection. Mounted on sliding rails, the unit can be quickly disassembled for maintenance.
Discharge is managed by galvanized tubes and two jacketed, water-cooled elbows for smooth transfer to the next stage.

Cooling system
The downstream cooling system ensures thermal stability and granule integrity during high-output WPC processing. Pellets are transported via blower to a stainless steel cyclone with a mesh filter, which separates fine dust from the product flow.
Cooling occurs on a holed steel vibrating tray with forced air circulation, generated by vertical valves and adjustable fan speed. Counter-rotating vibrators guarantee even granule distribution across the surface, while the tray can be removed easily for cleaning. Vibration intensity is adjustable to match material properties. Wall-mounted air intake filters feature a quick-release system for simplified maintenance. At the end of the line, a selector-based separator with interchangeable filtering nets ensures precise sorting and contamination-free transfer.

Sustainable extrusion performance

WPC profiles made from a blend of plastic and wood fibers: a sustainable, versatile solution ready for further processing.



WPC profiles extrusion lines

Bausano designs and manufactures complete extrusion lines for the production of WPC profiles, offering customised solutions for transforming natural fibers and recycled polymers into durable, high-quality extruded elements. Each system is developed to ensure dimensional accuracy, process repeatability and stable output across a wide range of formulations and applications.

WPC profiles – thanks to their renewable content and mechanical strength – are widely used in sectors that demand long-term performance, resistance to weathering and aesthetic versatility. The materials typically include wood flour, rice husk or other organic by-products, combined with thermoplastics such as PVC, PE or PP.
Once blended and extruded, these compounds give shape to profiles with excellent structural stability and processability.

Bausano extrusion lines for WPC profiles are based on parallel counter-rotating twin-screw extruders, engineered for precise temperature control, optimal mixing and uniform encapsulation of organic fillers. Auxiliary systems such as automatic dosing, degassing, filtration and calibration ensure constant product quality and efficient resource use, even when processing highly variable or recycled inputs.

Process control for long-term performance
The entire extrusion line is managed through advanced control software that continuously monitors process parameters, reducing material waste and increasing system responsiveness. This results in high-performance profiles ready for use in decking, cladding, fencing and other technical or architectural applications. With Bausano, process control, energy efficiency and environmental responsibility are engineered into every machine.

100% eco-friendly material
WPC profiles represent a responsible and sustainable alternative to traditional construction materials. Their composition is based entirely on renewable or recycled components, eliminating the need for virgin timber and reducing plastic waste. No harmful additives are required during production, and the profiles themselves are fully recyclable at end of life. With Bausano technology, manufacturers can rely on a circular, low-impact solution that meets both ecological standards and industrial performance criteria. Choosing WPC means embracing a material that is efficient, durable and truly environmentally friendly.

Parallel twin-screw extruder series

The extrusion process enables the production of WPC profiles. Bausano offers complete extrusion lines specifically engineered to meet the dimensional and processing requirements of each profile design, ensuring precision, efficiency, and consistent quality across every batch.

Bausano designs parallel twin-screw extrusion lines tailored for the production of WPC (wood-plastic composite) profiles. These systems are engineered to ensure precise processing of natural fibers and recycled polymers, enabling consistent plasticising and optimal shaping. The twin-screw technology guarantees homogeneous mixing and stable output, which is essential for profile extrusion.
Each line can be configured with different lengths and motor combinations to adapt to specific material formulations and production requirements, ensuring efficiency, flexibility and repeatability.

MD Series: parallel twin-screw technology

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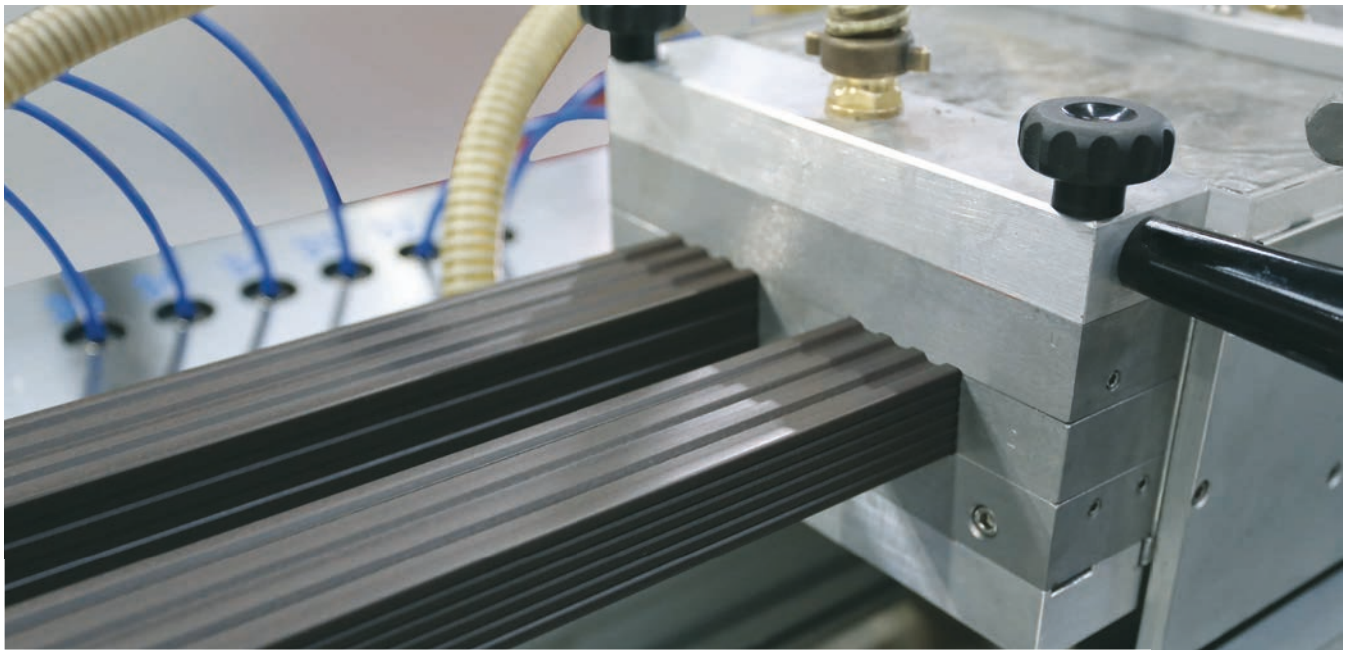
IoT technologies enable full monitoring and analysis of production parameters, with a special focus on improving energy efficient across the entire extrusion process.



TECHNICAL DATA					
Models	**MD 72**	**MD 75**	**MD 92**	**MD 115**	**MD 118**
Screw diameter (mm)	72	75	92	115	118
L/D ratio	36	24 / 30	25 / 30	36	25 / 30
Heating zone	6	5 / 6	6 / 7	9	7 / 8
Cooling zone	4	3 / 4	4	6	4
Total power (kW)	102	85 / 100	127 / 165	210	205 / 210

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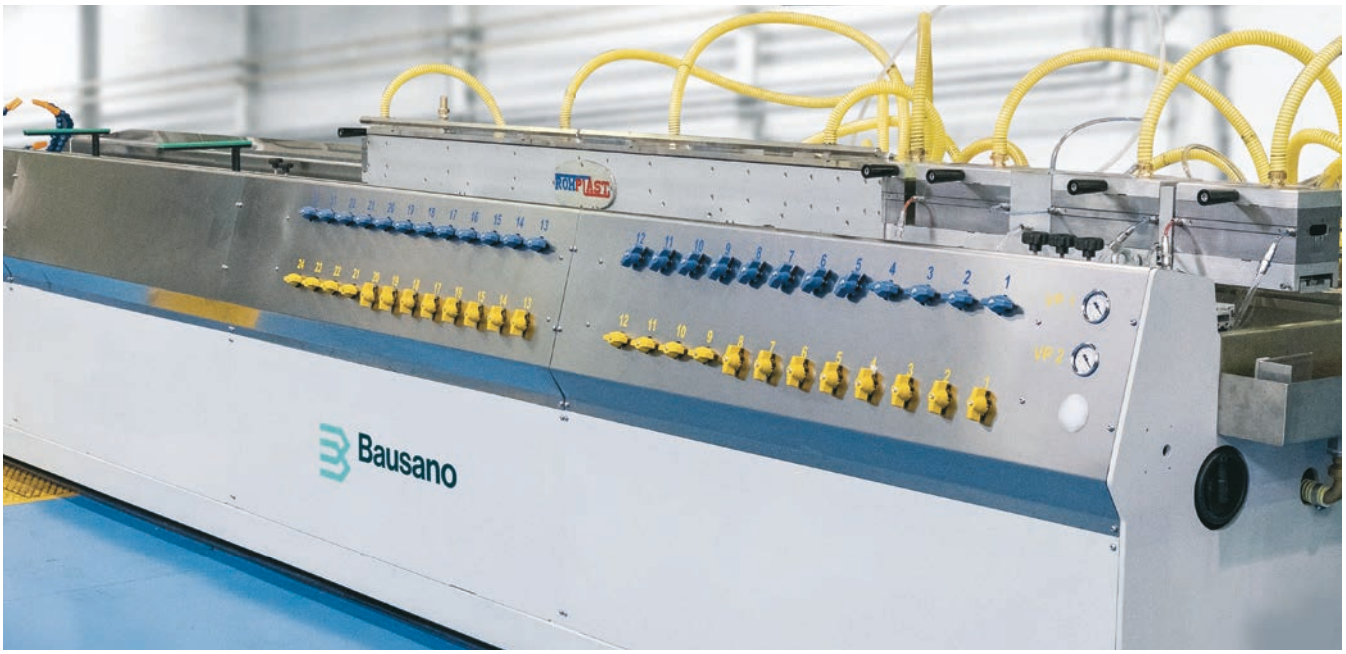
Profile die head



Bausano's profile die heads are engineered to shape a wide variety of thermoplastic materials into precise, application-specific sections. Developed in collaboration with trusted tooling partners, each solution is tailored to meet the mechanical and aesthetic requirements of rigid or foam PVC, soft PVC, ABS, PC and WPC formulations. The combination of the die head with a dedicated cooling system ensures optimal profile definition and dimensional stability during extrusion.

Customised design, consistent performance
The die sets are manufactured from high-chromium stainless steel and can be configured with single or multiple outputs, depending on production goals. Each project starts either from customer-provided technical drawings or from in-house designs developed in close cooperation with the client. This integrated approach ensures that functional requirements and process constraints are met with accuracy. Reliable and easy to integrate, Bausano tooling systems support high-precision, repeatable production across a wide range of profile applications.

Calibration and cooling bench



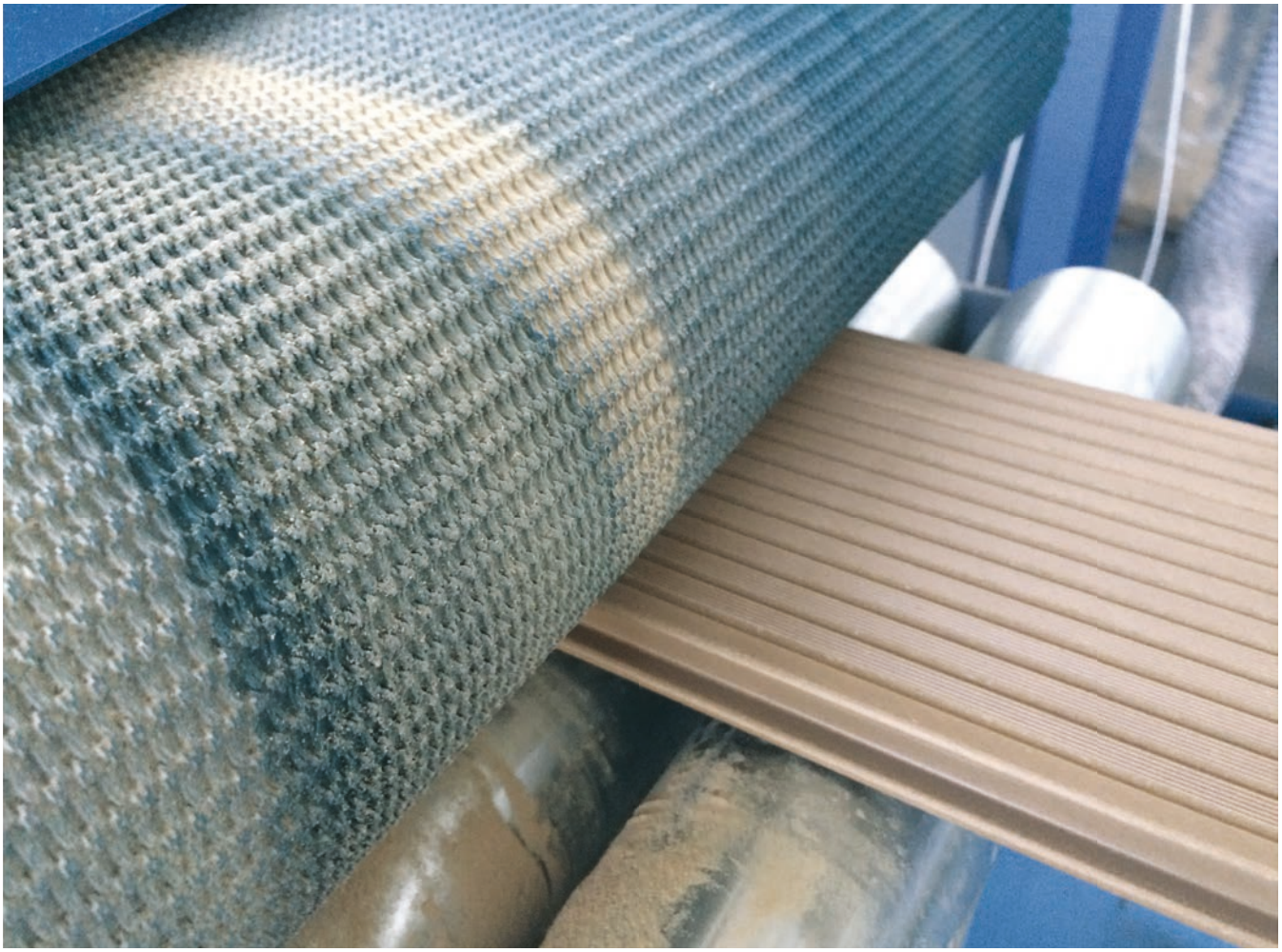
Calibration systems for dimensional precision
Bausano's calibration tools are machined from stainless steel to guarantee durability, especially when working with filled or abrasive materials. The internal geometry is shaped to match the final profile and polished to minimise drag during extrusion. Integrated cooling channels ensure a controlled water flow, which stabilises the product as it exits the die. Vacuum lines positioned within the tool help the extruded material adhere uniformly to the calibrator surface, ensuring proper shaping and dimensional accuracy. These systems are particularly effective when extruding wide or complex profiles at high speeds, where precision and thermal control are essential.

Modular cooling benches with closed-loop circuits
Cooling is a critical phase in profile extrusion. Bausano's modular cooling benches are engineered for efficiency, flexibility and fast changeovers. The structure includes stainless steel tanks with gravity discharge, polyamide guide rails, and an aluminium calibrator beam, all mounted on self-lubricating guides with motorised longitudinal motion. Integrated liquid ring vacuum pumps and closed-loop water systems ensure constant temperature and reduce energy waste.
The design allows quick replacement of preset calibration modules without full disassembly, minimising downtime. All key adjustments – vertical, lateral and longitudinal – are mechanical, enabling precise calibrator alignment and stable vacuum conditions throughout the process.

WPC profiles surface treatment

Brushing units for surface enhancement
Brushing is a finishing technique applied to WPC profiles to achieve a natural wood-like texture. Using wire brushes – mounted either inline or as standalone modules – this process creates a controlled roughness on the surface of decking boards, fencing panels or structural lumbers. The result is an enhanced visual appearance, improving the tactile quality and bringing the final product closer to the aesthetic of traditional wood. Thanks to its simplicity and low operational cost, brushing is an efficient solution for manufacturers looking to deliver finished WPC profiles with immediate usability and market-ready appeal. Bausano integrates brushing units into its downstream solutions to ensure perfect synchronisation with the extrusion line and reduce post-processing needs.

Sanding systems for functional finishes
Sanding is another essential step in the downstream phase, particularly when specific adhesion or surface preparation is required. This process exposes the inner material structure, improving bonding performance for coatings or co-extruded layers. Sanding also contributes to a more authentic, natural finish by subtly revealing the composite's internal grain. Machines are available in different working widths, depending on the dimensions of the WPC profile. With adjustable intensity and feed rate, sanding units can be configured for various production goals – from surface texturing to precise preparation for further treatment. In Bausano's downstream offering, sanding systems are designed for integration, efficiency and repeatability.



Key Advantages of Embossing Systems for WPC Profiles

1
Authentic wood grain and texture.

2
Embossing added downstream without changes to the line.

3
Various roller designs create diverse textures.

4
Rollers are interchangeable for fast updates.

5
No surface treatment needed post-extrusion.

6
Low operating costs and easy scalability.

Precision and flexibility in every detail
Bausano's embossing units are engineered for high thermal stability and consistent pressure control, essential for achieving uniform texture across long profiles or wide sections.
The system integrates seamlessly with the extrusion line, supporting both standard and customised patterns with minimal maintenance.

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Extrusion instinct

Bausano, international company founded in Italy in 1946, is a leader in developing high-tech industrial solutions for plastic processing.

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