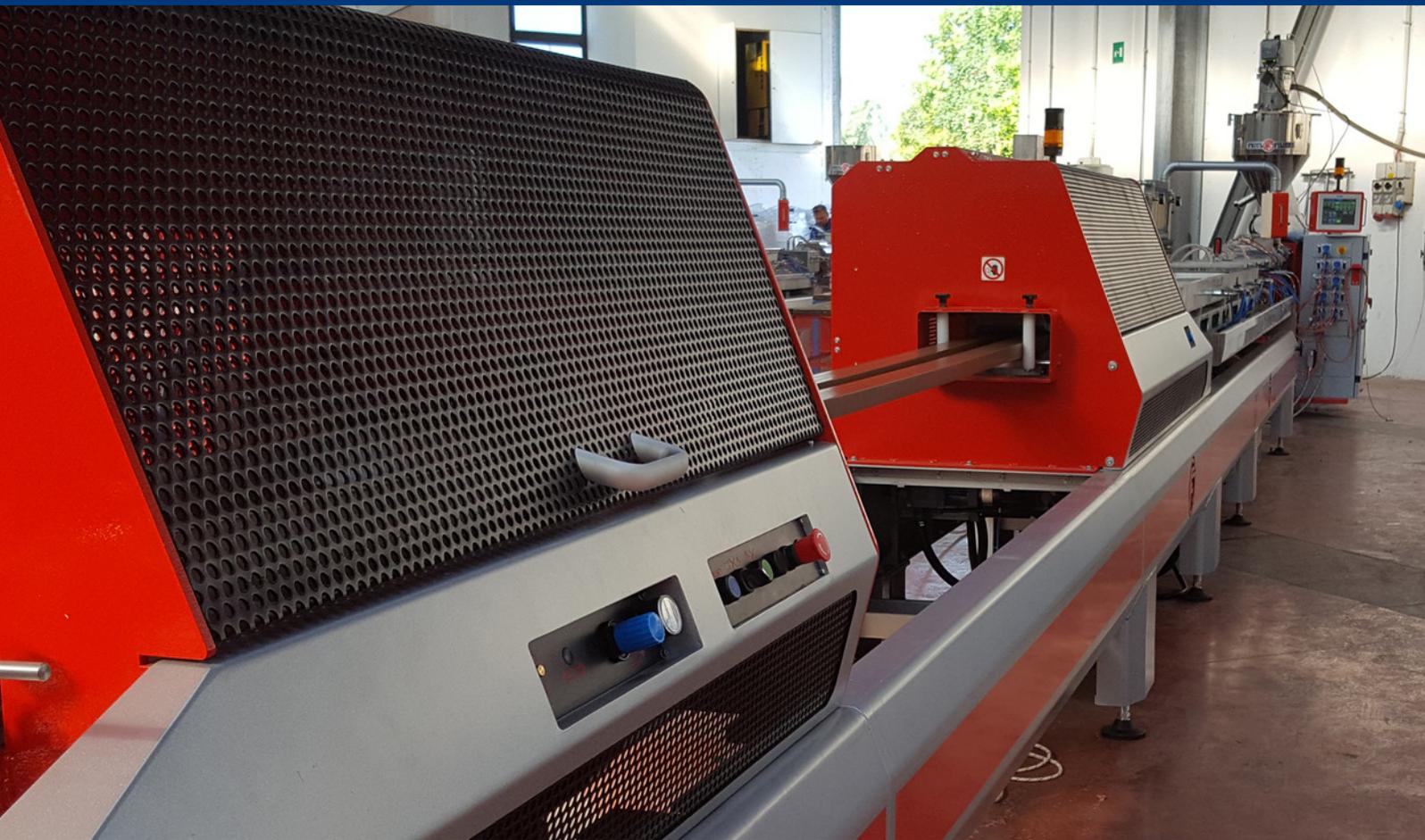


# COMPLETE PLANT FOR THE EXTRUSION OF COMPOSITE TERRACE SYSTEM

TURN-KEY SYSTEMS

#RESYSTA  
#FRIULFILIARE





Customers have access to decades of experience and flexibility; a “yes, we can” approach that reflects the ongoing belief in R&D. The company holds several European and international patents and customers look to it for projects characterised by the use of complex materials or the section of the product they require.

<EVERY SYSTEM IS A PROTOTYPE>

From the conception to the delivery of the system, complete with machines and dies, all custom built. “Taking care of the customer and the project, for which we act as the sole partner, remains our main concern,” stresses Valdi Artico, Chairman and CEO.

“Our passion for research is what leads us and determines the ambitious goals which we set for ourselves. This means we are motivated partners when undertaking projects for manufacturing special profiles and pipes which require a specific study and a made-to-measure technological solution.

Starting with the customer’s idea, after a preliminary feasibility study, we take care of the combination of materials and process knowhow to obtain the best possible performance in terms of production capacity and quality.”

Friul Filiere Spa was founded almost forty years ago as a manufacturer of dies for the extrusion of plastic material. The company now sells complete, turn-key systems all over the world to anyone looking for high-quality performance when manufacturing pipes and profiles, from technological extrusion lines, fully customized and guaranteed 100% Made in Italy

Luna Artico, the Sales Manager, adds more details to the profile of a Friul Filiere customer: “We design systems and dies for profiles and pipes used in a wide variety of industries. This year alone, we have worked for companies in telecommunications and industrial, irrigation, garden machinery, conveyor belt, lighting, and window systems, in addition to the building and furnishing industry”.

<ONE MATERIAL ENDLESS POSSIBILITIES>

“Friul Filiere now presents one of its latest products for the decking sector, which it approaches, as always, with a completely new solution aimed at producing a terrace system with a guaranteed performance”, explains Celeste Artico, who is in charge of the company’s technical supervision.

Starting by material: Resysta.

is a unique material with bipolar properties.

A complex procedure (PTRH-technology) enables us to treat the rice husk in a way that (for the first time) provides for a process taking place between a natural fibre and a polymer.

As a result, the positive properties of the silicates contained in the rice husk are reflected in the compound. Owing to the bipolarity of the material, its surface cross-links with water but water can hardly penetrate it. Furthermore, Resysta is easy to shred and pulverize for recycling and can be introduced to production without an intermediate step.

“This is not WPC. It’s a composite material obtained from a mixture of PVC and rice husks (from waste) which, when extruded on Friul Filiere systems, allow the customer to achieve excellent production performances and high quality profiles.”

From the combination of Tom material with our technology you get a profile:

**WATER RESISTANCE:**

Since Resysta hardly absorbs any water, it can neither splinter, crack nor swell – it is exactly these properties that make it an extremely durable material.

**WORKABLE LIKE WOOD:**

Resysta can be glued, sanded, milled, drilled, sawed and colored.



Dubai, Middle East, 2015



Florida, USA, 2015



**UV RESISTANCE:**

Resysta is extremely resistant against UV radiation.

**SUSTAINABILITY:**

Resysta mainly consists of rice husk – a by-product of rice production.

**RECYCLABLE:**

Resysta can be pulverised and new Resysta products continuously be processed out of it.



<COMPLETE INSTALLATION FOR  
COMPOSITE TERRACE PROFILES>

The system, designed and created for a European customer, consists of a twin-screw extruder, downstream Evolution, and auxiliary machines, all fitted with dedicated equipment, for composite materials such as Resysta (PVC + rice husk).



The complete terrace system guarantees:

- HIGH PERFORMANCE PLANT
- LONG LIFE TOOLINGS
- TAILOR MADE SOLUTION



### <OMEGA TWIN-SCREW EXTRUDER>

An Omega R63 twin-screw extruder, combining energy savings and high production capacity (180 kg/h), thanks to a low absorption electrical system.

In order to ensure excellent plasticisation of the material, we have opted to use thermostatic screws which are hollow inside and connected to an oil control unit to manage and maintain a controlled and constant temperature.

Thanks to the insertion of a degassing system as well, it is possible eliminate the moisture that the hygroscopic material tends to reabsorb, despite being dried beforehand.

To guarantee durability, the screws and cylinder are treated with tungsten carbide which hardens the surface, making it highly resistant to abrasion as the material passes through.

A Friul Filiere proprietary software that, not only manages the machinery, but also the overall line, makes it possible to program operations by storing the specific formulas with the relative extrusion parameters. Monitoring all stages of the process and storing historical production data and any faults are part of the management system via a remote support service, which allows Friul Filiere to intervene in real time, in any part of the world to solve problems, if necessary.





#### <DOWNSTREAM OMEGA EVOLUTION>

Patented by Friul Filiere, with a monobloc frame and state-of-the-art solutions for the electrical management of the intuitive system and above all, a focus on energy saving. The decision to replace traditional vacuum pumps with innovative SPECK pumps, which allow a significant reduction in consumption, reflect this concept. They are what make it possible to use electricity based on real vacuum requirements in the different phases of the extrusion process.



#### <DIES AND CALIBRATORS>

The dies and calibration system are special and designed for optimum performance in the extrusion of the innovative composite material featured in the project. Obtained from a combination of rice husks and PVC, the material is the answer to all the most common problems related to traditional decking systems. Thanks to the equipment on the dual output, the superior production capacity of the twinscrew extruder can be fully exploited. Friul Filiere focuses on the quality and durability of all its equipment, so as usual, has taken great care over the finishes of the dies and calibrators with a special treatment to harden the steel.

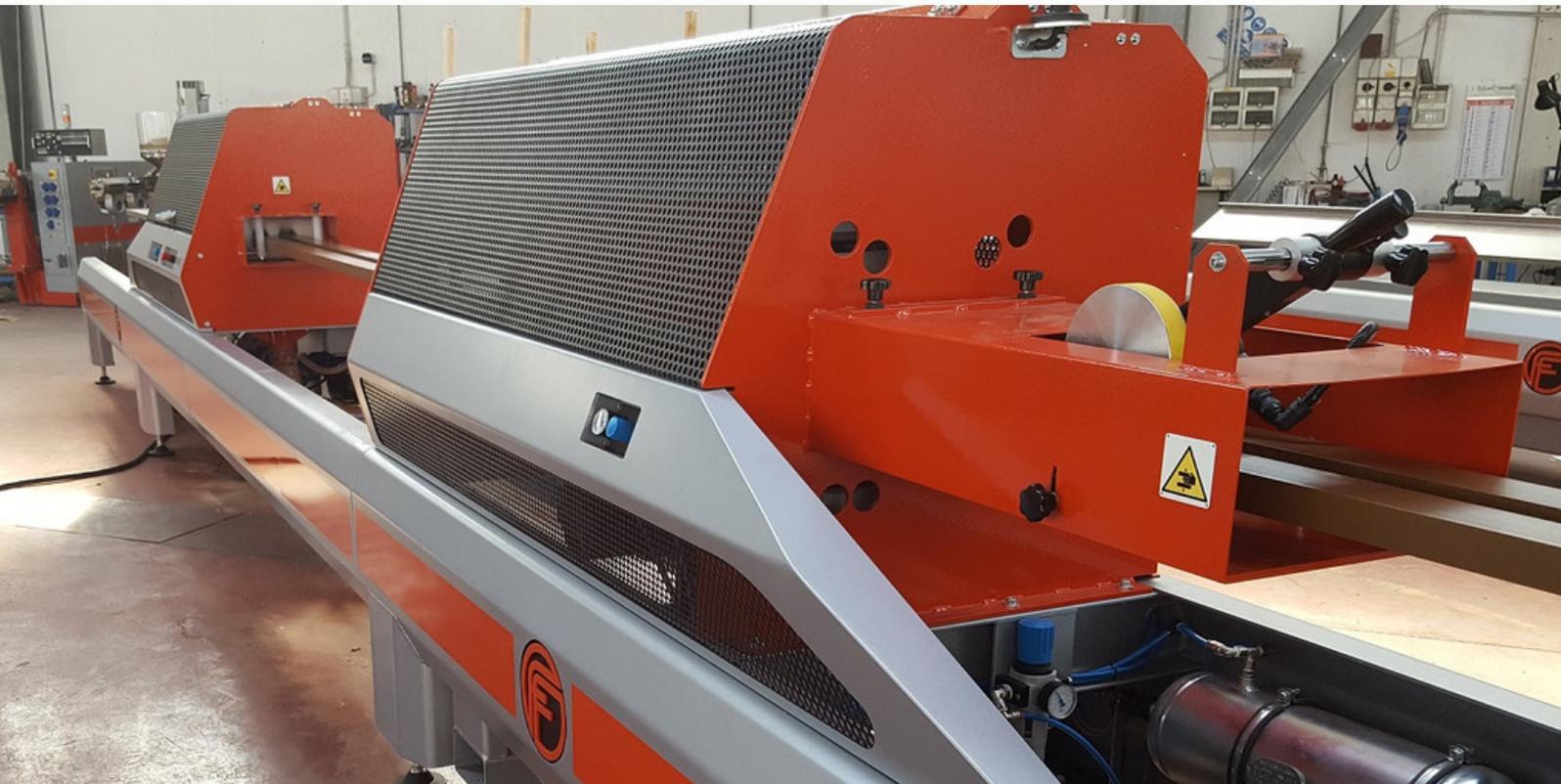
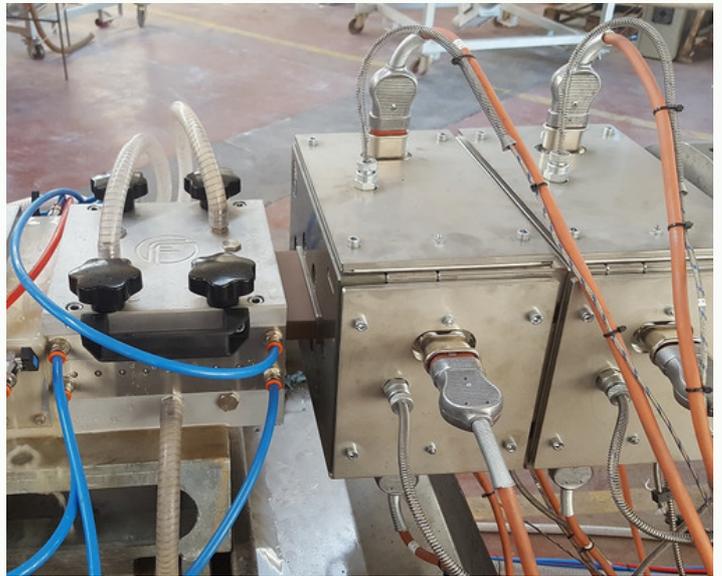


#### <AUXILIARY MACHINERY>

To obtain the desired finishes on profiles, auxiliary machines have been installed in line (positioned between the calibrating tables and the conveyor), such as embossers fitted with motorised rollers and thermostat; brushing machines synchronised with the conveyor and the other units, which guarantee a surface wood effect that is resistant to scratches and footfall, in addition to being non-slip.

#### <ONE TECHNOLOGY, ENDLESS POSSIBILITIES>

This is a system which has made it possible to achieve production performance and ideal quality in a composite material for decking systems. This is, however, just one example because the characteristics of this material make it ideal for a host of other uses, including garden furniture, facades, pool edges and fences. It is water resistant, practically identical to wood in appearance and in the feeling of warmth that it conveys, but with superior physical-mechanical characteristics, heat stability and chemical resistance. It does not splinter and is not subject to damage by insects. It does not warp if it comes into contact with water and it is anti-slip. It is resistant to atmospheric agents and does not require any special maintenance. It is natural and 100% recyclable.



**Resysta**<sup>®</sup>  
THE BETTER WOOD



FRIUL FILIERE IS...

...Passion for research and technological tailor-made solutions looking to the future.

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Friul Filiere S.p.A.  
Via Polvaries, 21  
33030 - Buia (UD) - Italy  
T. +39.0432.961811  
F. +39.0432.962591  
[friulfiliere@friulfiliere.it](mailto:friulfiliere@friulfiliere.it)  
[www.friulfiliere.it](http://www.friulfiliere.it)