Our ThermoPress range is a modular portfolio of double belt press systems that enables multiple process stages – including polymerization, curing and cooling – to be incorporated into one continuous and highly efficient production process.

ipco.com

THE WORLD OF THERMOPRESS SYSTEMS

IPCO – A GLOBAL PROCESS SOLUTIONS COMPANY

We are a globally active engineering group offering industrial processing solutions across a wide range of market sectors, from chemicals, oil & gas, automotive and construction to flooring, food and pharmaceuticals.

We are also a world leader in the manufacture of solid and perforated steel belts used for improving productivity and quality in the processing of products as diverse as wood-based panels, film, floorings, advanced composites and more.

We operate through a global network of sales and service offices, combining an in-depth understanding of materials processing with unparalleled technical know-how to deliver high productivity process solutions.

Our business concept is based on product innovation, technological leadership and close, long-term customer relationships, and our goal is to be the world's #1 industrial process partner in each of the markets we serve.

Your partner in Composite Solutions
Our Composite Solutions division designs, manufactures and installs systems for the production of a wide range of composite materials used across industries as diverse as automotive, aerospace, flooring, construction, non-wovens, textiles and many others.

These include press systems used for impregnation, lamination and consolidation – we are the world's only double belt press manufacturer capable of providing solutions based on PTFE and/or steel belts – and we also supply a full range of upstream/downstream equipment including precision scattering systems.

Our Composite Solutions division is based at purpose-built premises in Göppingen, near Stuttgart, Germany, a center of excellence where we are able to showcase the world's most extensive range of double belt presses and precision scattering machines under one roof.

IPCO ThermoPress and ScatterPro systems

Our portfolio includes the ThermoPress range of double belt presses – a modular system that enables multiple stages to be incorporated into a single efficient process – and our ScatterPro family of precision scattering systems.

Typical applications for these systems are:

Pressing

- Calibrating the thickness of a material.
- Increasing the density of a material.
- Removing/reducing trapped air.
- Increasing mechanical strength/stiffness.

Lamination

- Consolidating several sheets together (these can be of similar or different thicknesses).
- Consolidating pre-laminated sheets onto a core (honeycomb, metallic etc.).

Impregnation

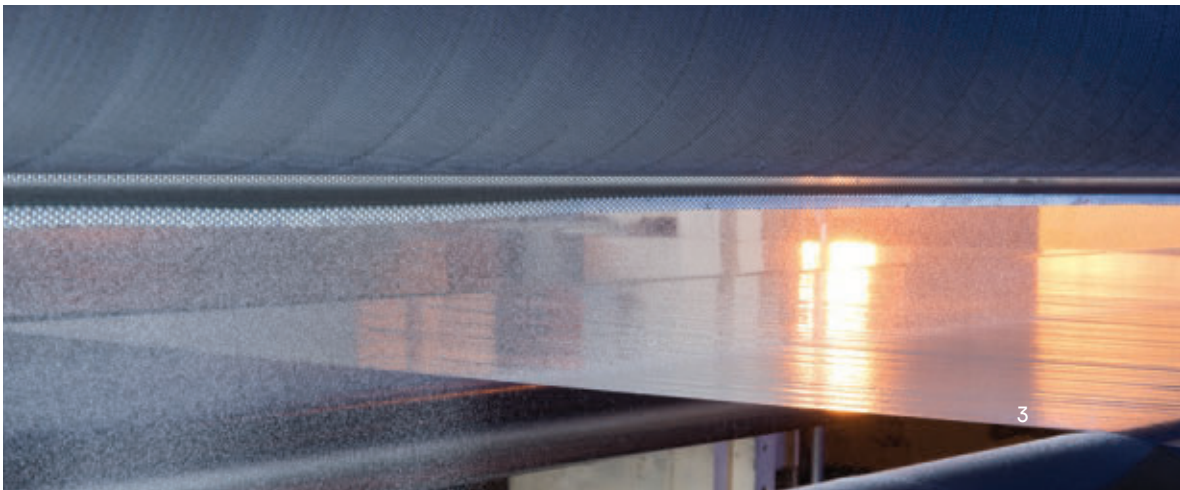
- Impregnating fibers with a resin (thermo-plastic or thermoset).
- Applying resin (powder, film or liquid) onto a non-woven or felt.
- Consolidating wetted fibers into a final fiber composite material (pressure ensures better wet-out of the fibers).

Cooling

- Tempering and cooling of various products.

Scattering

- Scattering powder, granular or fibrous products onto a carrier material.



The world of ThermoPress: modular design for multi-stage solutions

Our modular approach to system design means we can combine different types of processes into one continuous production system.

This multi-stage approach, incorporating controlled polymerization, curing and cooling in a single system, enables the development of a multitude of highly efficient, environmentally friendly process solutions.

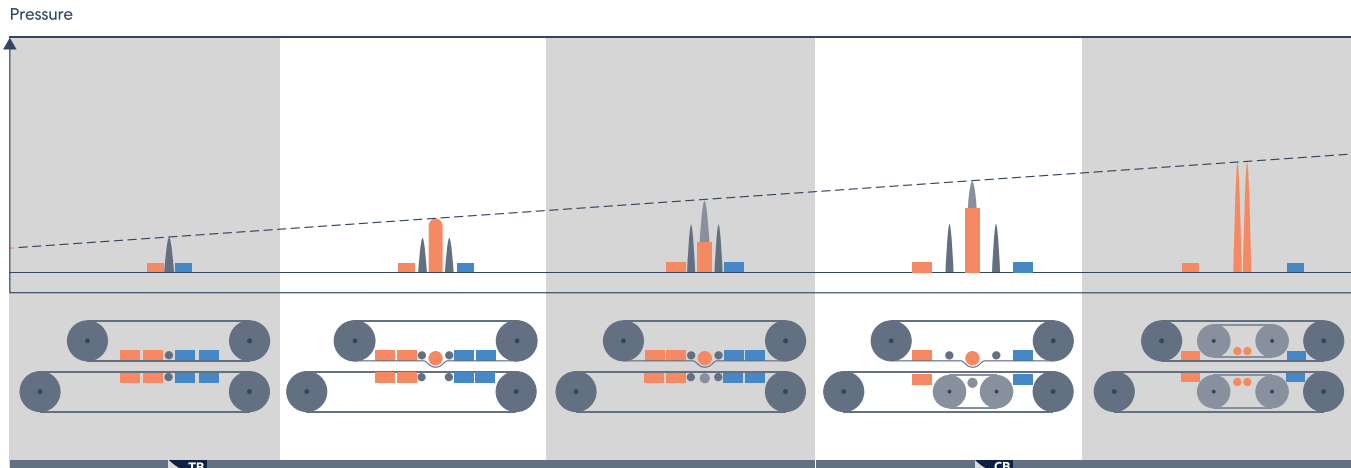
Every aspect of an IPCO press system is designed to maximize the quality of end product. For example, the horizontal process sequence means there is no deflection of the product, eliminating the risk of tension developing within the material.

We offer three main types of ThermoPress double belt press system:

ThermoPress TB
These low-pressure systems are based on PTFE belts and are used for the continuous consolidation and compacting of two or more materials.

ThermoPress CB
CombiBelt presses combine the advantages of PTFE belts with the high-pressure performance of steel belt modules.

ThermoPress SB
These presses feature steel belts throughout to deliver high pressure and temperature.



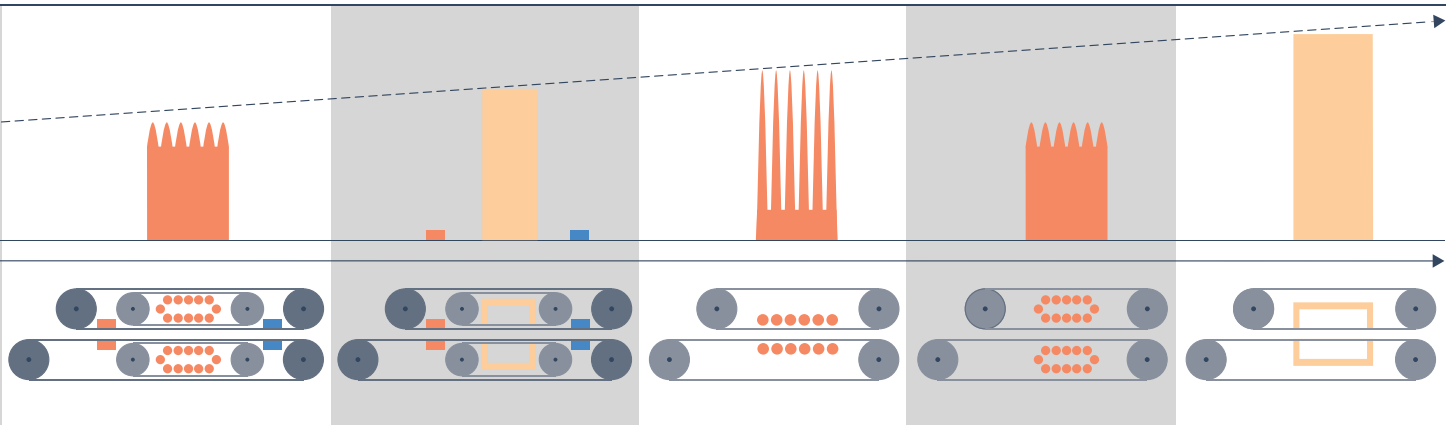
Assess your product on our systems
We have a full range of ThermoPress systems available for customer product development, R&D, prototyping and process testing at our Productivity Center in Germany.

Advantages of IPCO double belt presses include:

- Flexibility in processing different kind of materials and/or products on the same system.
- Excellent control of individual process parameters.
- Efficiency of a continuous process.
- Outstanding system versatility.
- Constant quality.
- High degree of automation.
- High capacity system design.
- Proven performance of IPCO steel belts.
- Remote control service.

Turnkey capability for complete peace of mind
With decades of experience in providing industrial process solutions to customers throughout the world, we are able to offer a complete turnkey service.

This means you can trust on us to support you at every stage of the process, all the way from consultancy and product development, through project engineering and manufacture, to installation, commissioning and ongoing service.



		ThermoPress SB		
CombiBelt (hybrid) Double belt press with PTFE belts and additional isochoric steel belt press module.	**CombiBelt (hybrid)** Double belt press with PTFE belts and additional isobaric steel belt press module.	**Double steel belt press** Isochoric steel belt press with fixed rollers.	**Double steel belt press** Isochoric steel belt press with circulating rollers.	**Double steel belt press** High pressure isobaric steel belt press.
		≤ 400 °C		≤ 220 °C
10 bar	20 bar	80 N/mm	10 bar	30 bar

ThermoPress TB – low pressure technology with PTFE belts

This press series features PTFE-coated belts and counter-pressure elements. Capable of incorporating several process stages in one continuous system, these presses are suitable for a wide range of applications.

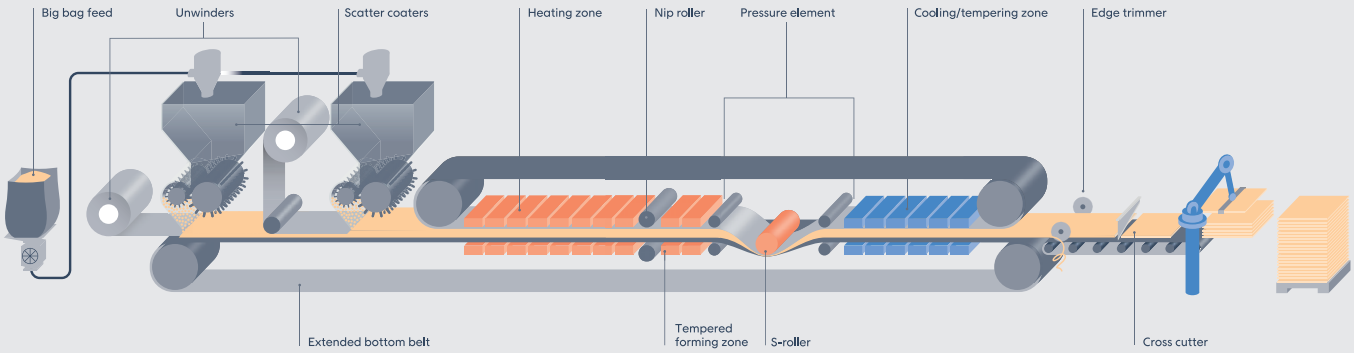
Key benefits are speed of output, accurate control of temperature and pressure, and a lack of mechanical stress in materials that ensures a high quality end product.

The ThermoPress TB series ranges from the low-pressure double belt laminator to models that make use of additional pressure applying elements: nip rollers, S-rollers and counter-pressure rollers.

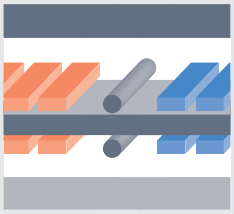
As a turnkey supplier we are in a position to design and supply a full package of material handling, feeding and downstream equipment.

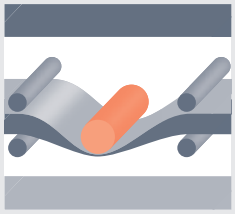
So, whatever your requirement, talk to us first and we will work with you to deliver the precise solutions for your production process.

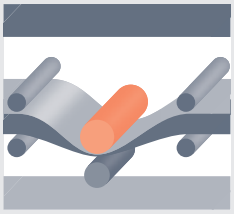
ThermoPress TB: this example incorporates nip rollers in the heating zone and S-roller pressure element.



A choice of three pressure modules is available for the ThermoPress TB system (all modules can be retrofitted to existing systems).

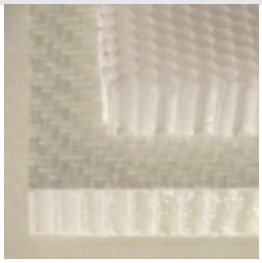


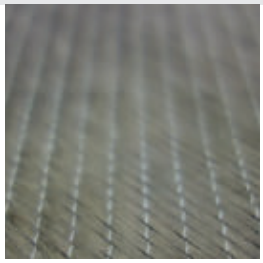


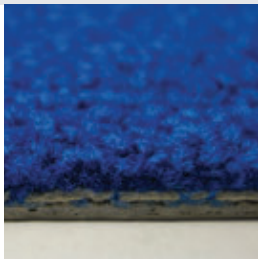


	Double belt laminator with nip rollers		**Nip rollers and S-roller***	**Nip rollers, S-roller and counter-pressure roller**
	Nip rollers/standard	Nip rollers plus advanced heating/cooling	S-roller plus heating/cooling	Counter-pressure roller in combination with S-roller only plus heating/cooling
Max. pressure	7.2 N/mm	85 N/mm	0.5 bar	140 N/mm
Width (up to)	3 300 mm	3 300 mm	3 300 mm	3 300 mm
Driven	Bottom roll	Yes	Yes	Yes
Temp. adjusted	-	20–260 °C	20–260 °C	20–260 °C
Medium	-	Water, resp. oil	Water, resp. oil	Water, resp. oil
			Patent granted	*Patent granted*

* S-roller installation also available with honeycomb support table for highest quality standards in the processing of multi-layer composites.







Typical applications: multi-layered materials, carbon fibers, honeycomb, carpet backing, fiber and plastic recycling, automotive body parts, technical textiles, non-wovens, natural or glass fibers, composites (fiber or metal), sandwich sheets, organo sheets, carbon.

ThermoPress CB – CombiBelt technology combining PTFE and steel belts

These innovative presses feature dual PTFE and steel belt technologies to deliver the best of both worlds: high pressure where it's needed coupled with investment costs significantly lower than for an all-steel belt press.

PTFE belts transport the product the entire length of the system, from feeding/unwinding, through the heating zone and ultimately to the cooling zone. However, as high pressure is required in the forming zone – between heating and cooling – steel belts are integrated into this section and apply pressure through the PTFE-coated belts.

This hybrid approach allows a pressure of up to 20 bar (depending on the type of press module used) to be delivered to the product, enabling successful processing of all product types, even thick or hard-to-process materials.

Extended working life

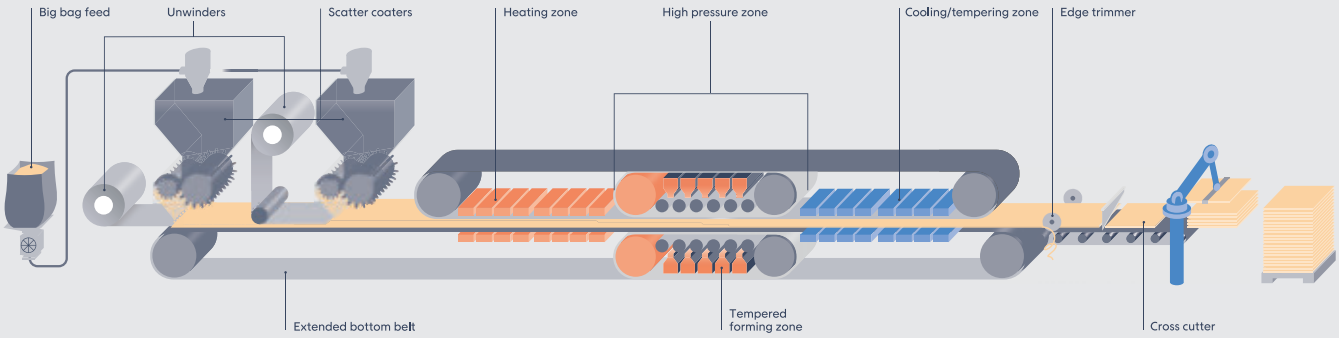
The combination of these technologies allows the application of high surface pressures onto PTFE belts, without adversely affecting belt tension or operational life.

We have unparalleled experience in the design and manufacture of steel belt-based double belt systems and this has led to the development of three distinct types of press, any of which can by incorporated into a CombiBelt line.

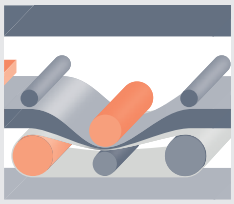
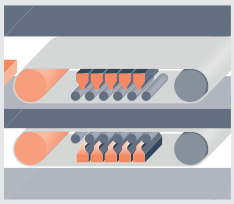
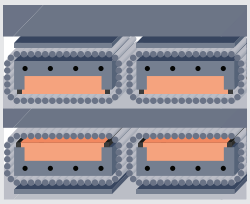
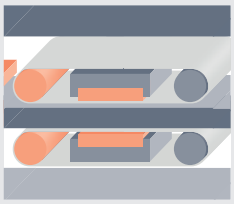
The IPCO ThermoPress CB series offers the combined advantages of PTFE and steel:

- High-pressure modules within a PTFE belt press.
- Low tension stress on PTFE belts.
- Steel belt operates in one constant temperature zone (no reheating necessary).
- Easy removal of processed material from PTFE belts.
- Energy efficient operation.

ThermoPress CB: this example includes an isochoric steel belt press module in the high-pressure zone.

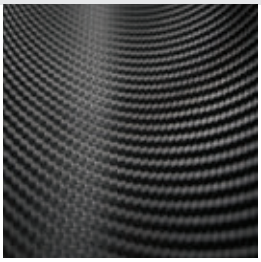


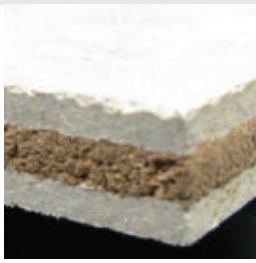
We offer four pressure module options for the ThermoPress CB system (all modules can be retrofitted to existing systems).

	PTFE belts and additional isobaric counter-pressure belt	**PTFE belts and additional isochoric steel belt press module**	**Isochoric steel belt press with circulating rollers**	**PTFE belts and additional isobaric steel belt press module**
	Counter-pressure belt and counter-pressure roller	Steel belt press module plus heating, cooling and tempering	Circulating Roller Module (CRM) plus heating, cooling and tempering	Steel belt press module plus heating, cooling and tempering
Max. pressure	7 bar + 140 N/mm	50 N/mm	10 bar	20 bar
Width (up to)	3 300 mm	3 000 mm	3 000 mm	2 200 mm
Driven	Yes	Yes	Yes	Yes
Temp. adjusted	20–260 °C	20–260 °C	20–260 °C	20–220 °C
Medium	Oil	Air	Oil	Oil
	Patent granted	*Patent granted*	*Patent granted*	*Patent granted*







Typical applications: a wide range of flooring types incl. homogeneous,, heterogeneous, LVT, SPC, WPC, textile, PVC-free, safety flooring and VCT. Also thin films, insulating panels, carbon, side skirts, trailers, wood plastic composites.

ThermoPress SB – high-pressure systems based on IPCO steel belts

Our double belt press systems are the first choice for the production of high quality thermoset/thermoplastic composite materials, where the ability to heat and cool under pressure, in one continuous process, ensures easy and reliable production of a uniform product.

Our modular design approach enables controlled heating, reaction, pressing, cooling and tempering to be incorporated into a single system, resulting in highly efficient process solutions. We also provide all necessary controls such as edge guiding and tension control to ensure both efficient press operation and optimum product quality.

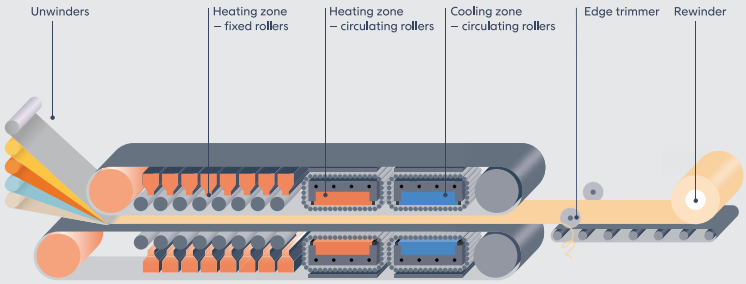
Throughput rates depend on a range of factors including fabric/resin type and press process. Our expertise in both steel belts and press engineering means that high quality composite materials – including non-wovens and fabrics – can be processed in widths up to 3 000 mm.

Key benefits of the ThermoPress SB series include:

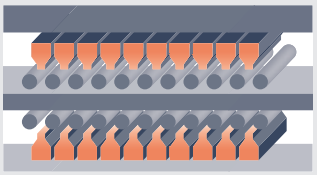
- Flat, hard and smooth surface for a high quality finish.
- High thermal conductivity for efficient, controlled processing.
- Strong and durable for maximum productivity.
- Anti-corrosion and wear resistant properties for long belt lifetime.

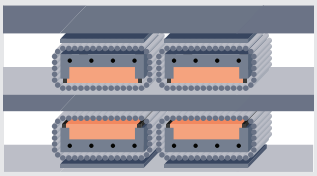
SB

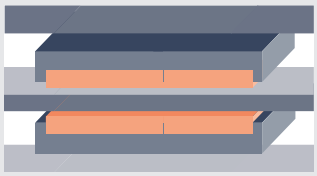
ThermoPress SB: this example includes different isochoric heating and cooling zone modules.



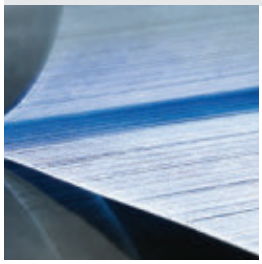
We offer three pressure module options for the ThermoPress SB system (all modules can be retrofitted to existing systems).

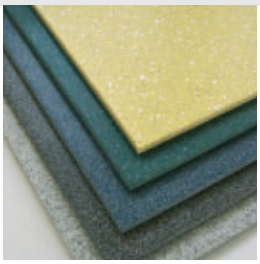


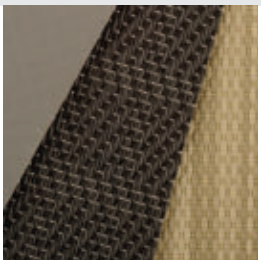


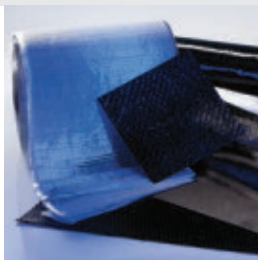


	Isochoric steel belt press with fixed rollers	**Isochoric steel belt press with circulating rollers**	**High pressure isobaric steel belt press**
	Fixed Roller Module (FRM) plus heating, cooling and tempering	Circulating Roller Module (CRM) plus heating, cooling and tempering	Pressure Module (Isobaric) plus heating, cooling and tempering
Max. pressure	80 N/mm	10 bar	30 bar
Width (up to)	3 000 mm	3 000 mm	2 200 mm
Driven	No	Yes	No
Temp. adjusted	up to 400 °C	up to 400 °C	up to 220 °C
Medium	Air	Oil/Electric	Oil







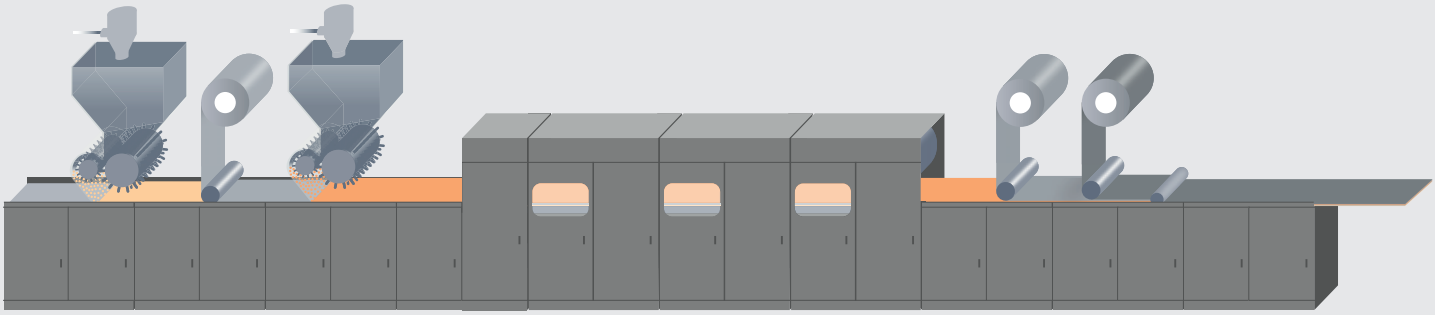


Typical applications: pre-preg, carbon, cladding, high temperature composites, artificial stone, fiberboard.

Modular solutions for a wide range of construction products

Products manufactured on IPCO ThermoPress systems range from the decorative to the practical and can be found throughout residential, commercial, industrial and public buildings.

Typical ThermoPress system: this example incorporates two scattering units and three unwinders.



Flooring
Homogeneous
Heterogeneous
LVT/SPC/WPC
Textile
PVC-free
Safety flooring
VCT

Ceiling
Acoustic panel

Wall
Interior insulation
Wallpaper
Door panel

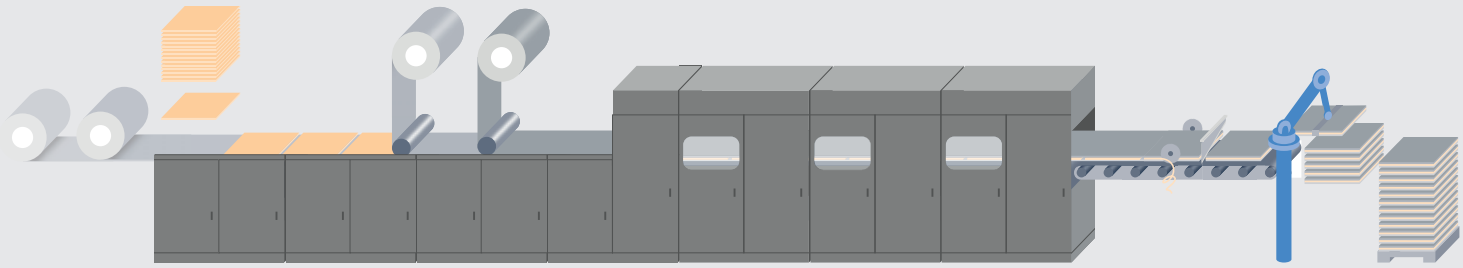
Interior surfaces
Solid surface for kitchen tabletop
Kitchen sink
Sanitary
Laboratory

Outdoor products
Cladding
Concrete form
Decking
Facade system
Insulation material
Roofing

Composite products for the transportation industry

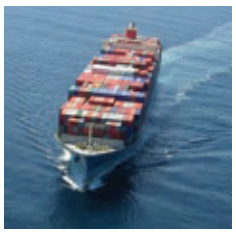
Composite products manufactured on IPCO ThermoPress systems can be found across the world of transportation: on the road, rail or sea, or in the air.

Modular ThermoPress system with two unwinders and downstream stacking unit.



Automotive exterior
Bodywork parts
Organo sheet
Underbody
Wheel arch

Automotive interior
Acoustic insulation
Door panel
Headliner
Trunk liner
Parcel shelf
Heavy layer



Container
Sea container
Air container
Composite container

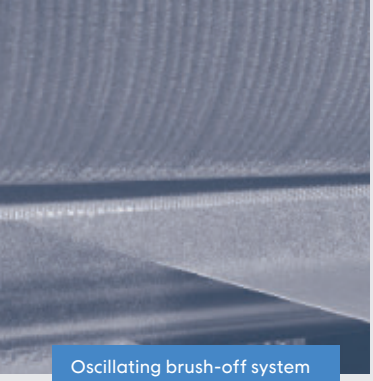
Truck/trailer interior and exterior
Side skirts
Trailer wall
Wind deflector
Door panel

RVs/motorhomes
Interior/exterior
Ceiling
Floor wall

ScatterPro – stand-alone systems or integrated into our press lines

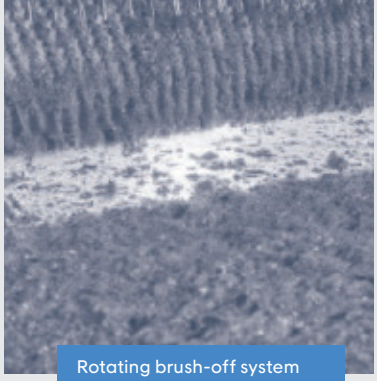
As the world leader in precision scattering technology and manufacturer of the most extensive range in the industry, we offer proven and efficient technologies for most scattering applications.

Our systems are used for the accurate scattering of powder, granulate and fibers as well as glitter, flakes, chips, sand, carbon black, glass, corundum, sesame, spices and more.

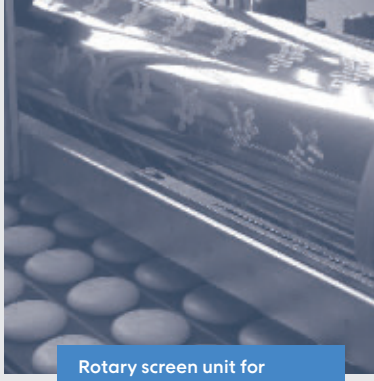


Oscillating brush-off system for powder

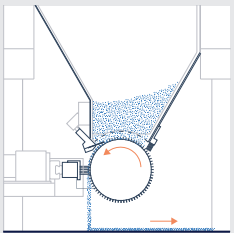
Rotating brush-off system for granules

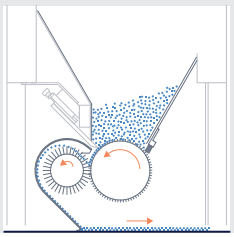


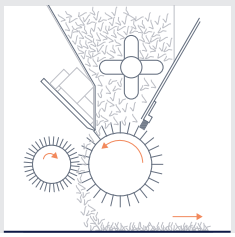
Rotating brush-off system for fibers

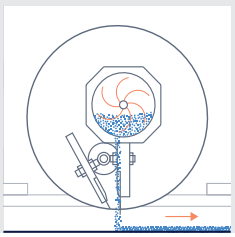


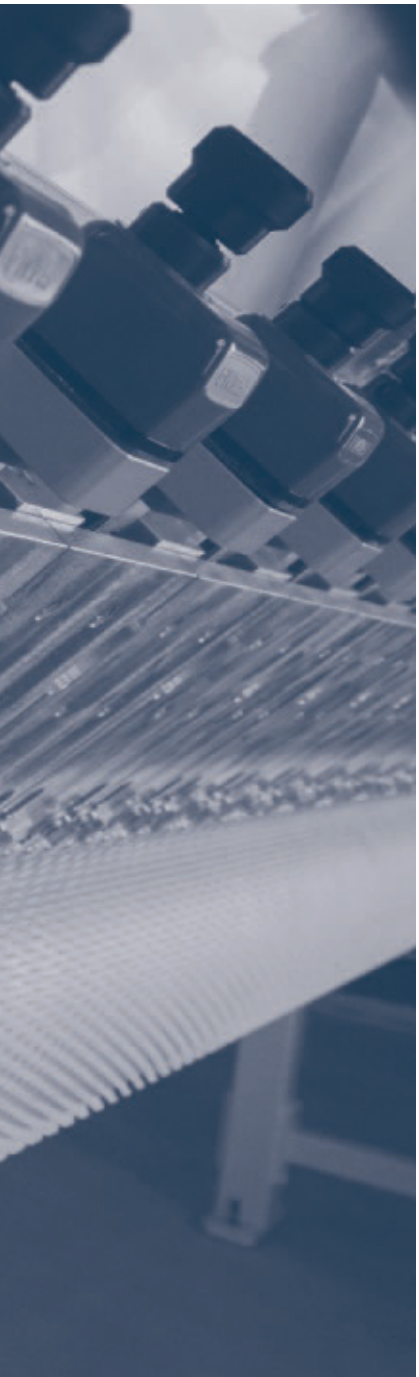
Rotary screen unit for grains and flakes



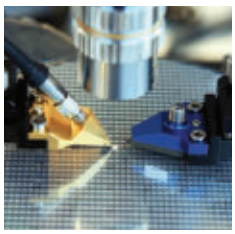








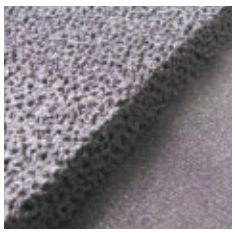
Floorings
Overlay papers
Cushion vinyls
Rubber tiles
Safety flooring



Electronics
Smart chips
Current collectors (rail)
Electrical insulation

Food
Burger buns
Cookies
Cup cakes

Pharma/Cosmetics/Hygiene
Diapers
Make-up pads
Tissues



Technical textiles
Protective fabrics
Filters/pollution filter
Geo textiles
Glass fibers

For further information, download our ScatterPro brochure at ipco.com.

Casting units – efficient production processes for solid surfaces

Our in-depth expertise in the design and manufacture of sheet production systems enables us to combine multiple stages – polymerizing, curing and cooling – into a single, efficient and continuous process.

We pioneered the development of steel belt production lines for both acrylic and polyester resin applications and continue to lead the way in the design of single and double belt systems for the production of acrylic or polyester resin-based solid surfaces.

Other applications include an almost unlimited range of compounds including polymer concrete, mineral casting and others, combined with binders such as vinyl ester, phenolic resin etc.

The inherent qualities of a steel belt – strong, durable and highly resistant to wear and corrosion – deliver a long operational life for an excellent return on investment, while the flat, hard and smooth surface ensures a high quality finish.

Systems are available in the form of single or double belt units to meet different process needs.

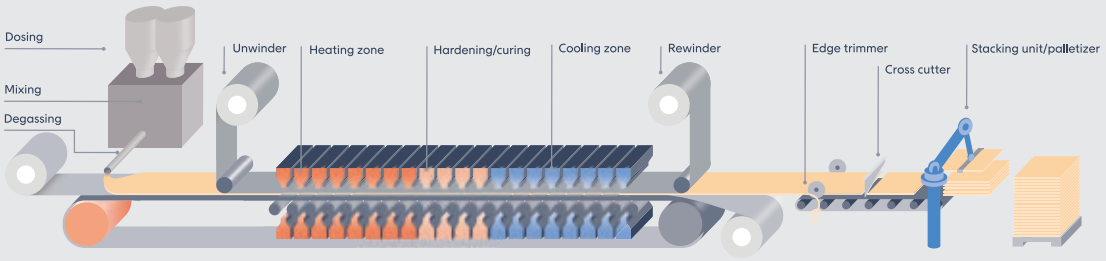
Single belt units

- Versatile – variable product thickness.
- Economical continuous production.
- Protection films required for certain resins.

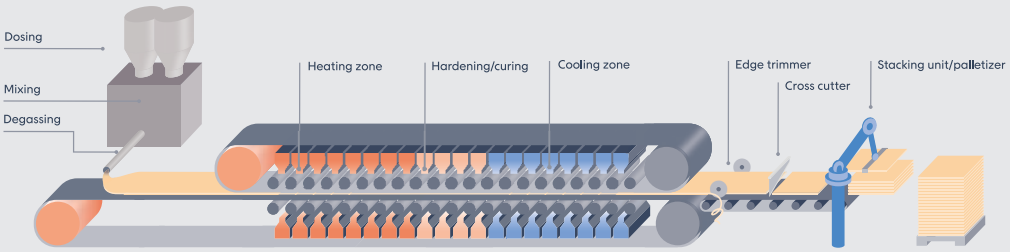
Double belt units

- Versatile – adjustable product width.
- Narrow thickness tolerance.
- Smooth, high quality product surface.
- Highly efficient with symmetric heating and cooling.
- Minimal release of solvents for environmental protection.

Single belt system



Double belt system



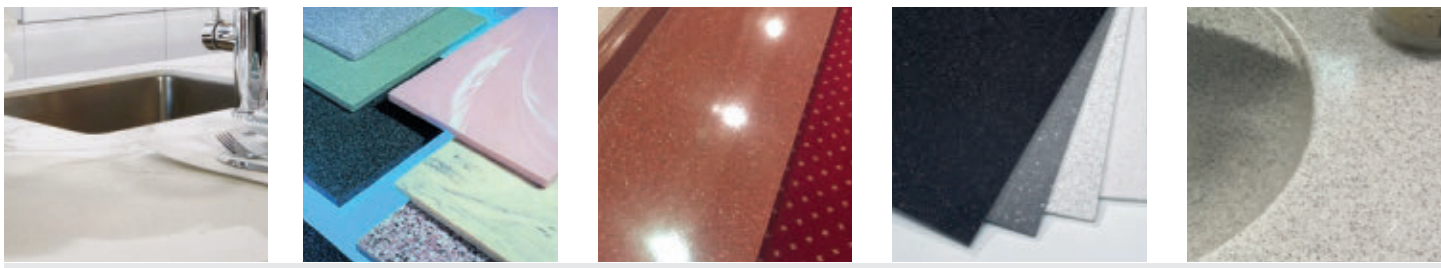
Design flexibility to meet specific performance parameters

Our efficient, easy-to-manage casting line systems can be used to process a wide range of resin-based products.

The performance and success of our casting solutions are the result of decades of experience in this field, together with the close partnerships we have established with leading names across the chemical and casting equipment industries in North America, Europe, Asia and the Middle East.

The benefits of single/double belt-based sheet casting systems include:

- Efficiency of continuous production.
- Precise film/sheet thickness compared to single mould production.
- High clarity and low stress in the formed product.
- Thick slab products are possible.
- Multiple process zones on the same machine.
- Complete polymerization.



End-to-end sheet casting solutions for artificial marble.

THE WORLD OF THERMOPRESS SYSTEMS

07-2023