



The impact of our engineering extends into every aspect of everyday life. Find out how IPCO's products and systems have probably touched your life today.

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# ——IPCO STEEL BELTS AND PROCESS SYSTEMS AT THE HEART OF EVERYDAY LIFE

Our name, IPCO, reflects our position as a world-leader in the design and manufacture of high performance industrial process systems.

Throughout our history we have worked with innovative companies to develop solutions that deliver a competitive edge.

In 1901 we produced the world's first steel belt and the inherent properties of this conveying medium – flatness, durability, thermal transfer and ease of cleaning – opened the door to the development of a world of new industrial processes.

Today there are literally thousands of different products – foods, chemicals, construction materials, automotive parts and many, many more – that owe their existence in part at least to an IPCO product or system.

Our steel belts have been used in wind tunnels to test the aerodynamics of Formula One cars;

there are sea waters that are cleaner thanks to the use of our oil skimmers; and in the 1920s, we designed a magazine sorting solution based on a steel belt studded with fiber pins.

Our conveying equipment has been used to carry everything from car parts, parcels and iron ore to soap, cycle saddles and even people (our Movator system transported its first passengers at Châtelet Métro station, Paris in 1964).

However, it is for industrial processes such as pressing, cooling, forming, freezing, casting and laminating that we are best known. And the extraordinary scope of these applications means it's unlikely that any one of us goes a day without coming into contact with a product that was processed, in some form or another, on IPCO equipment.

From food to flooring, from cars to construction, IPCO – the industrial process solutions company – is at the heart of everything. Join the IPCO world.



# IPCO on the road

## Ultra-low sulphur fuel

The global move to ultra-low sulphur fuels means that refineries now have to deal with millions of tons of liquid sulphur extracted from refined petroleum products and natural gas. This is more easily handled, transported and reprocessed in solid form and the world's most widely used sulphur solidification system is IPCO's Rotoform.

## Automotive body parts

Composite materials can be found throughout modern vehicles, from dashboards, headliners, acoustic insulation, and trunk liners to bodywork parts, underbody and wheel arches. The same goes for RVs (ceilings, floors), trucks (side skirts, wind deflectors), and trailers (walls, roofs). All benefit from the exceptional strength-to-weight characteristics of composite materials produced using our scattering and double belt press systems.

## Paintwork

The paints traditionally used on cars and other vehicles rely on resin technology to achieve high levels of corrosion protection. These resins are processed on our Rotoform system. Today there

is a trend towards more environmentally-friendly powder coatings ... produced on IPCO extrusion and cooling systems.

## Seals and gaskets

Synthetic rubbers have excellent resistance to oils, fuels and solvents, making them ideal for a range of automotive applications. And the rubber is processed and cured on Rotocure presses equipped with IPCO steel belts.

## Body styling

The shape of a vehicle not only determines its aesthetic appeal but also helps define its fuel efficiency. The aerodynamics of body design can be assessed in air tunnels equipped with rolling roads based on IPCO steel belts.

## AdBlue

Diesel Exhaust Fluid (DEF), commonly known as AdBlue, uses a technical grade urea that helps neutralize the exhaust gases produced by diesel engines and contribute to a cleaner environment. The granulation of urea products is a major application for our Rotoform process.

Molten sulphur has to be converted into a solid form for easier handling – IPCO's Rotoform is the world's most widely used premium quality sulphur pastillation process.





#### **Rubber tires**

Road tires owe their hardwearing, long-lasting qualities to chemical additives that delay the ageing process, and these are processed on IPCO Rotoform lines.

#### **Electric vehicle (EV) batteries**

The use of nickel in EV batteries delivers high energy density and storage capacity at an attractive cost. And one of the processes used in the production of nickel is sintering, where nickel powder is conveyed through a furnace on an IPCO steel belt.

#### **Activated carbon filters**

Activated carbon is used in ventilation systems to capture undesirable organic compounds, odors and other pollutants from the air before it enters the vehicle (be it a car, bus or truck). Granules or particles of carbon can be incorporated into the filter using an IPCO scattering unit.



Rotocure presses use IPCO steel belts to deliver the combination of pressure and heat needed to vulcanize and cure rubber sheet and other rubber products.

# IPCO in the office

## **Carbon-negative carpet tiles**

One American customer uses IPCO ScatterPro and ThermoPress systems to produce a carpet tile backing that incorporates such a high concentration of recycled tiles and scrap from in-house processes that they actually reduce the amount of CO2 in the atmosphere.

## **Cell/mobile phone**

Many smartphones owe their sleek, light design to the use fiber reinforced plastic casings. These materials are formed through a combination of high pressure and temperature followed by controlled cooling on an IPCO double belt press system.

## **PVC window frames**

Legislation has prohibited the use of ecologically unfriendly stabilisers containing lead and cadmium traditionally used in the manufacture PVC materials. They are now being replaced by a synthetic, environmentally friendlier material called Hydrotalcite, formed into pastilles on a Rotoform system.

## **Office workstation**

Standard desks, sit/stand desks, multi-user configurations ... whatever the style, the chances are that beneath the veneer it's made from MDF produced on a double belt press equipped with IPCO steel belts.





The fine tolerances of flatness and thickness required in optical film is achieved by casting liquid product on a polished IPCO steel belt then passing it through an IPCO Venturi dryer.



#### Computers and notebooks

Producing the film that forms the top layer of an LCD display requires manufacturing technology capable of accuracy measured in microns. A combination of IPCO's Venturi dryer system and super-mirror polished steel belts delivers precisely that.

#### Mailing envelopes

The strip that seals envelopes is a thermoplastic adhesive, the components of which are granulated from a hot melt on a Rotoform system.

#### Documents and brochures

While business has largely moved online, paperwork remains at the heart of many commercial activities, from quotes and contracts to stationery and promotional literature. And the paper itself is produced on super-wide IPCO steel belts. And the ink? Yes, there's IPCO involvement here too: resins used in printing ink are solidified using Rotoform technology.



High quality IPCO steel belts can be produced in widths of up to 10 m and are used by the paper industry for the manufacture of premium quality coated/uncoated paper.

# IPCO around the home



## Consumer packaging

The 6-pack of beer you brought home last night ... the Ultra HD TV in your living room ... the soft drinks in your fridge. The packaging for all of these and more could have been carried through a high speed digital press on a perforated IPCO steel belt.

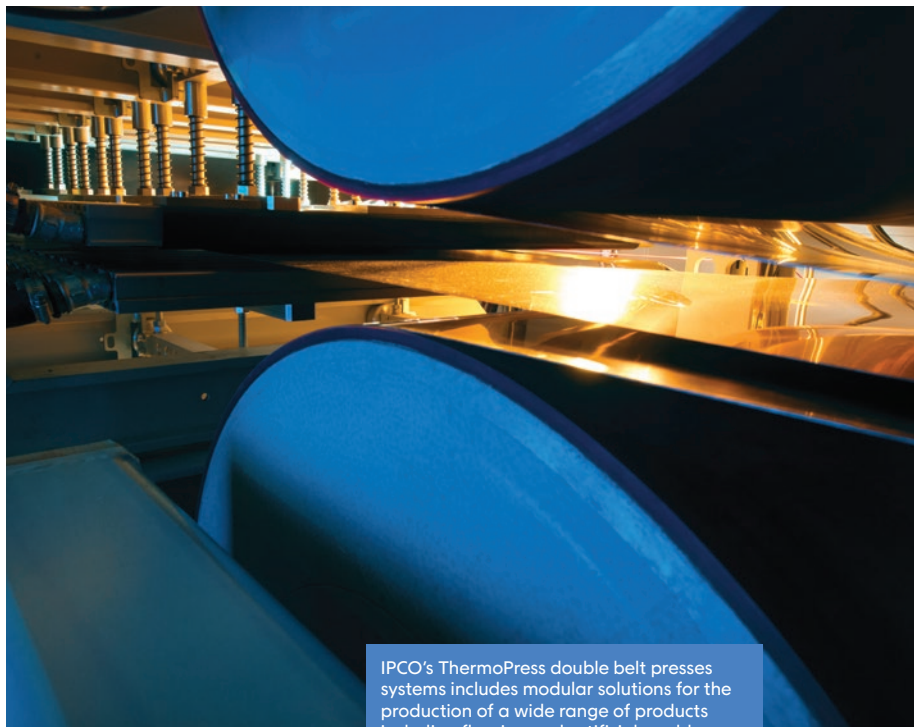
## Kitchen units

The basic structure of the carcass that forms the units? MDF, formed on a press based on IPCO steel belts. And the cool wood-effect finish? Furniture board printed on a high speed digital press based on an IPCO steel belt conveyor.

## Wallpaper

Have you ever wondered how mica, glass beads, glitter flakes and other decorative materials are applied to wallpapers? The answer could be with an IPCO scattering system.





IPCO's ThermoPress double belt presses systems includes modular solutions for the production of a wide range of products including flooring and artificial marble.

#### Artificial marble

Artificial marble – a mix of quartz particles, pigments and acrylic resin – is used for floor tiling, vanity suites and other hard-wearing items. It is produced in sheet form on an IPCO system consisting of a series of in-line processes: heating, calibrating, cooling and cutting.

#### Flooring

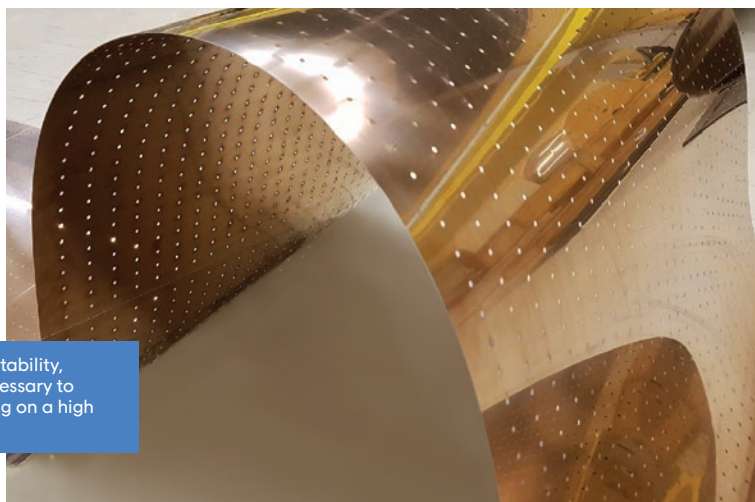
The hard-wearing nature of a laminate flooring surface is often due to a scattering of aluminum oxide, applied by an IPCO ScatterPro system. IPCO press and scattering systems are also used in the product of resilient flooring products such as LVT/SPC/WPC.

#### Green energy

It's likely that at least some of the electricity powering the lights, TV, appliances and pretty much everything else in your home or office has a link to IPCO. Why? Because the blades on wind turbines are formed from composite materials that can be produced on our systems.

#### Li-ion batteries

Lithium batteries are found in everything from phones and laptops to vehicles and solar power storage. A key component is the polymer membrane that keeps the two electrodes apart – and this is cast on a super-smooth, polished IPCO steel belt.



IPCO steel belts provide the stability, flatness and straightness necessary to achieve high precision printing on a high speed digital printing press.

# IPCO on the table

## Strawberry granola

Strawberries add appealing color and delicious taste to a bowl of breakfast granola and are just one of a range of fruits that are gently processed on IPCO drying systems. Other sensitive products requiring special handling include blueberries, pineapple and mango.

## Instant coffee

Is there a more welcoming smell than that first cup of coffee of the day? If it's instant, it's very possible that it was produced on IPCO equipment. Coffee beans are ground into a slurry that is frozen on an IPCO steel belt-based freezer system then crushed and vacuum dried to form granules.

## Frozen shrimps

IPCO steel belts and chilled air equipment are widely used in freezer systems for processing shrimps, scallops and other seafood, as well as meat, chicken pieces, burger patties and more.

## Tomatoes

Tomato sorting requires hand grading and a conveyor belt capable of coping with the citric and malic acids naturally present in the product. We have supplied hundreds of belts for this application, all in a special, corrosion-resistant IPCO steel grade.

## Real-butter cookies

American style cookies use real butter – and often chocolate chips too – so must be baked on a surface that won't allow fat to drip into the oven. A solid IPCO steel belt meets this need perfectly, and delivers the desired crisp / chewy base at the same time.

## Meat

No part of the food industry operates under stricter standards of hygiene than meat processing. The cleanability of IPCO stainless steel belt conveyors has long made them the solution of choice for quality-conscious processors.

## Decorative chocolate

Ever wondered how fancy chocolate shavings, spiral rolls, mouldings and other decorative features are made? We are a trusted supplier of forming systems to many of the best known names in chocolate processing and production.

## Chocolate chips

Our forming systems are used across the chocolate industry in the manufacture of chocolate chips, chunks and blocks as an 'ingredient' product to be used further along the food production line. Brownies, cookies and ice cream are just some examples.



The bakery industry is one of IPCO's largest markets, with solid and perforated steel belts used to transport biscuits, cookies and many other products through bake ovens.





### **Beer**

As part of the production process, beer is often filtered through sheer nitrocellulose filter membranes manufactured to strict hygiene standards using IPCO's Venturi drying and film casting technology.

### **Candy / confectionery**

Think of any type of confectionery product – hard melt candy (aka boiled sweets), caramel, gummy products, fruit-flavored jellies – and there's every possibility that, at some point in the production process, it was cooled and solidified on an IPCO steel belt.



IPCO is a major supplier of forming and moulding equipment to the chocolate industry, with systems for the production of chips, chunks, drops, and decorative products.

# IPCO in construction



## Solar panels

Solar electricity panels are used to convert the sun's energy into green electricity. The cells themselves use film cast using an IPCO Venturi dryer. And they are soldered together on a PTFE-coated perforated IPCO steel belt.

## Geotextiles

Geotextiles are used in construction and civil engineering to reinforce, protect or separate soil and other materials for ground stabilisation purposes. They are also used for filtration and drainage, allowing water to escape while retaining fine soil particles. And they can be produced on IPCO presses.



IPCO is one of the world's leading manufacturers of steel belts used in the production of wood-based panel products such as particle board, MDF, OSB, and coated boards.

#### Timber construction

Plywood and OSB are commonly used materials for flooring and walls in timber frame construction; both are produced on presses using IPCO steel belts.

#### Watertight roofing

Bitumen provides a watertight, weatherproof roof coating, and is melted in pots or boilers on-site. We have developed an innovative automatic block forming and packaging system that converts molten bitumen into regularly sized, shrinkwrapped packs designed to go straight into the melting vessel.

#### Acoustic ceiling panels

Ceiling tiles can be found in offices, hospitals, showrooms, schools, cafes and just about every other environment imaginable. Our systems are used to produce tiles with high levels sound absorption, reducing noise transmission and optimizing acoustics.

#### Wall panels

Modern construction is making increasing use of composite products for many aspects of a building to take advantage of their excellent strength-to-weight ratio as well as other qualities. Wall panels are just one more example of where you'll find composite materials – produced on IPCO systems – in homes and offices.



#### Aluminum cladding

Aluminum is light, corrosion resistant and completely recyclable, and can be formed into aesthetically appealing geometric and curved cladding panels. And it can be produced in strip form on systems that use of IPCO steel belts capable of operating in an environment where temperatures reach 700 °C / 1300 °F.

#### Thermal insulation

Thermal insulating sheet is used to reduce heat loss and maximise the energy efficiency of a building. And again, it's a material that can be produced on IPCO systems, in this case a ThermoPress PTFE and steel belt press.

IPCO double belt press systems can be used for the production of construction industry products ranging from flooring and walls panel to facades, roofing and thermal insulation.



# IPCO for hygiene and beauty



## Shampoo

Many shampoo and conditioner products contain an additive – a cationic surfactant – that helps deliver soft, glossy, shiny results. This cosmetic ingredient is processed and formed on our Rotoform systems.

## Washing powder/laundry detergent

Washing powder contains alkane sulphonate, a detergent often added in the form of micro pastilles measuring just 0.8 mm in diameter, produced using IPCO Rotoform technology.

## Toothpaste

One of the main ingredients of toothpaste is sorbitol, used partly for flavor but also to keep the toothpaste moist. And how is sorbitol produced? In dimensionally stable pastilles formed on an IPCO Rotoform pastillation system.

## Shoe polish

The waxes in shoe polish not only bring a shine to the leather but also add a layer of protection. The pastillation of these 'montan' waxes is one of the most common Rotoform applications in the chemical industry.

## Personal hygiene/diapers

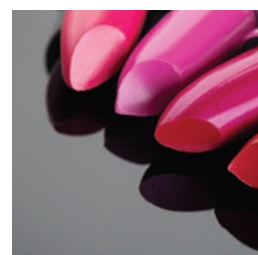
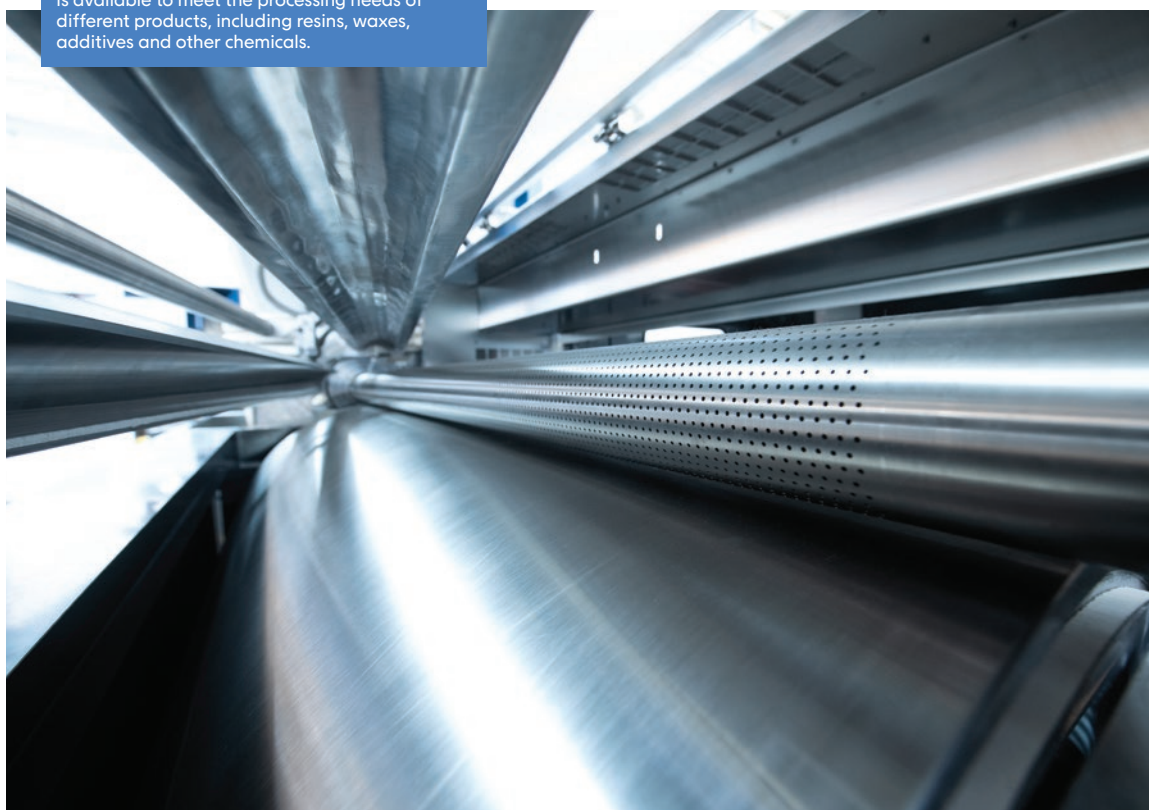
A typical application for our ScatterPro systems is the depositing of Super Absorbent Powder (SAP) onto a nonwoven material, a key stage in the production of feminine products and disposable diapers.

## Lipstick

Personal beauty and pharmaceutical products have to be processed in accordance with strict guidelines often known as 'Good Manufacturing Practice' (GMP). IPCO Rotoform systems can be designed for full GMP-compliance and are used for granulating components of lipstick and pharmaceutical products.



An entire family of Rotoform pastillation systems is available to meet the processing needs of different products, including resins, waxes, additives and other chemicals.



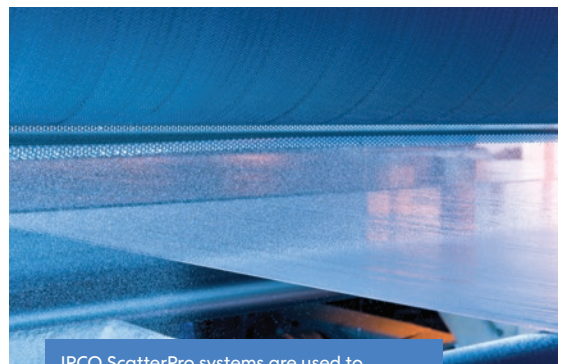


#### **Make-up pads**

Cosmetic pads are made by scattering a powdered materials – including some maybe surprising ingredients such as finely ground hazelnut or coconut shells – onto a nonwoven substrate ... using an IPCO scattering unit.

#### **Nail varnish/polish**

Nail varnish is resin-based and delivers its strong, bright, long-lasting color thanks to the use of pigments; these are produced in pastille form – on a Rotoform line – and dissolved in the resin.



IPCO ScatterPro systems are used to distribute powders, granules and other materials onto a substrate, and have applications across many sectors including the cosmetics industry.



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