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STEEL BELTS FOR CONTINUOUS FOOD PROCESSING

——A WORLD LEADER IN STEEL BELTS FOR THE FOOD INDUSTRY

IPCO is the world's largest supplier of solid and perforated steel belts to the food processing industry.

We manufacture belts in a range of thicknesses, widths and lengths to meet the needs different applications, and have developed a portfolio of steel grades that enables us to guarantee optimum performance for any process or product type.

Our heritage extends back well over 100 years to the production of the world's first ever steel conveyor belt and we have continued to innovate ever since, introducing game-changing belt solutions that have enhanced the productivity of bake ovens, meat cutting tables, contact freezers, chocolate conveyors, fruit dryers and more.

This experience gives us the process understanding to be able to tailor a service to each customer's needs, from belt-only supply through to close partnerships with machine builders/OEMs to ensure maximum performance and reliability.

Versatile, durable and hygienic – the ideal food processing medium

The unique qualities of solid and perforated steel conveyor belts make them the ideal medium on which to process literally hundreds of different food types.

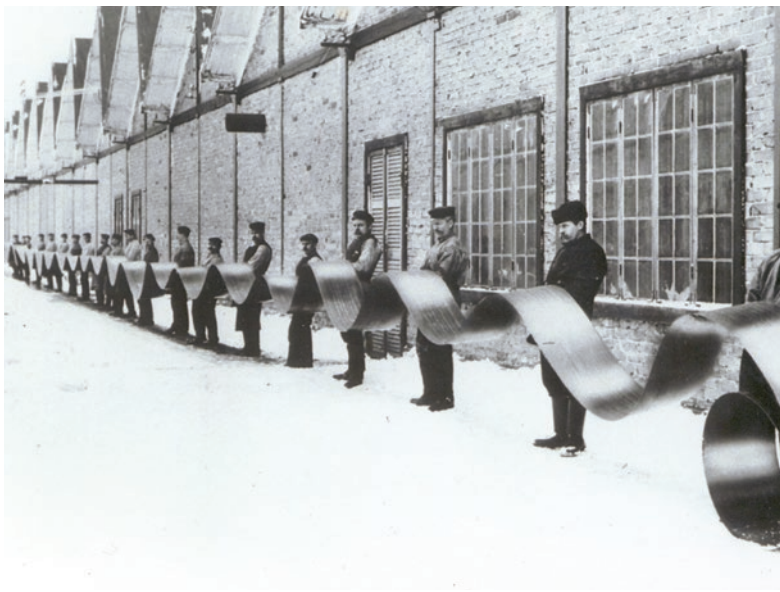
Versatile enough to be used at temperatures from as low as minus 80 °C through to extremes of 750 °C, steel belts can be found at the heart of processes as varied as freezing, baking, drying and cooking, retaining their strength and flexibility to deliver years of reliable service.

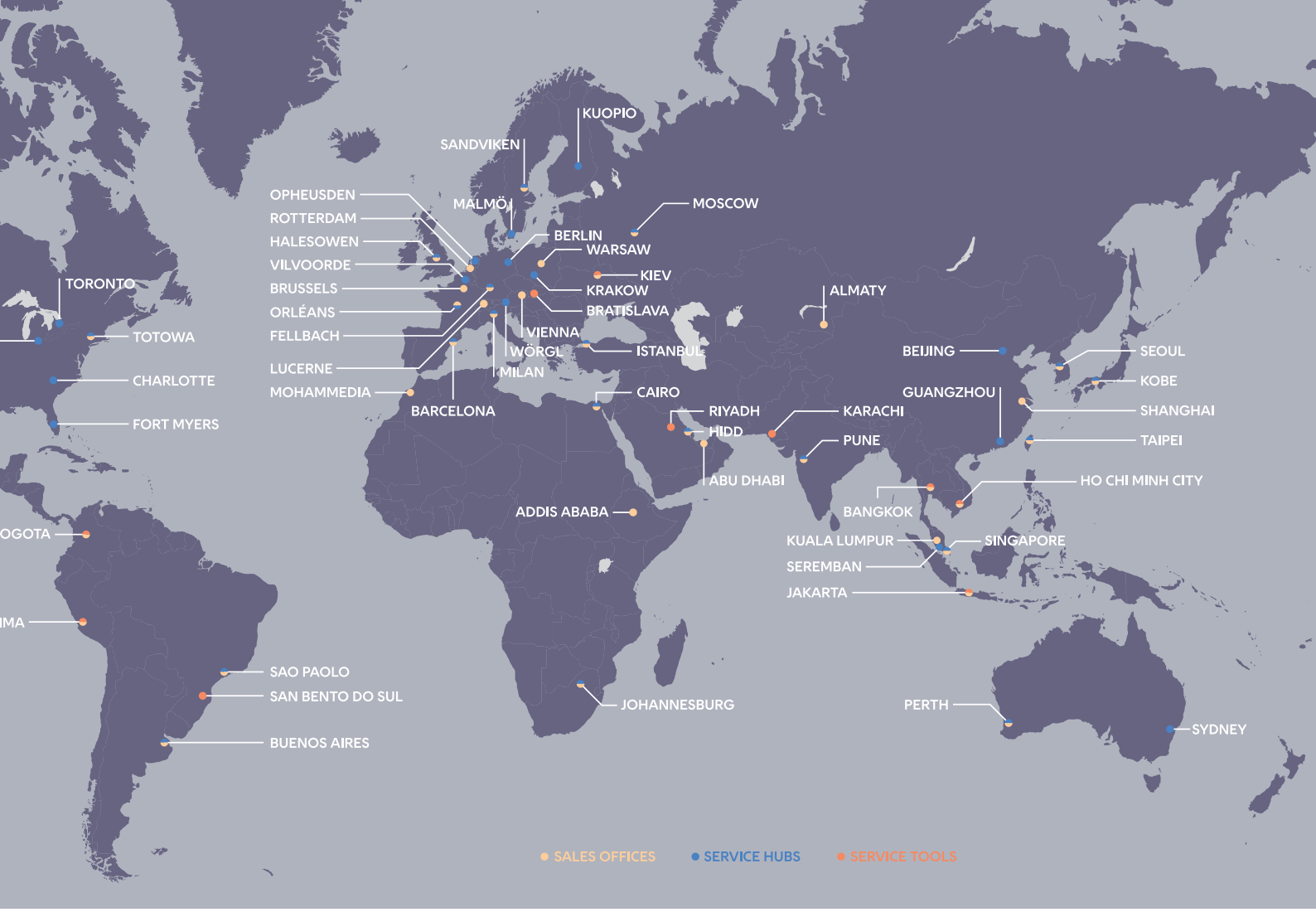
For many applications, this inherent durability is what makes a steel belt the default choice.

More resistant to damage by corrosion, abrasion or impact than any other belt type, a stainless steel belt conveyor represents outstanding long term value and delivers an excellent return on investment.

But the quality of perhaps greatest importance to the food industry is its ease of cleaning. Flat, smooth and endless, an IPCO stainless steel belt can be sanitised in whatever way is most appropriate to the operation: hot water, pressure, brushes, detergents, chemicals or any combination of these.

As well as enabling the highest standards of hygiene to be maintained at all times, this 'cleanability' also translates into more productive hours and savings of up to 30% in water, detergents and chemicals compared with other belt types.





Global sales and service network
Choose IPCO as your belt supplier and you benefit from a technical service organization that covers the world and is geared up to delivering a prompt response wherever and whenever it's needed.

Our engineers have a wealth of experience so whatever your requirement – advice, a new installation, an upgrade to an existing facility or simply a replacement belt – we can help.

- Worldwide service capability
- New installations and belt replacements
- Upgrades from wire mesh to solid or perforated belts
- Consultancy on all aspects of process design
- Preventative checks and recommendations

We have developed a portfolio of steel grades that enables us to guarantee optimum performance for any process or product type

IPCO steel belts – what's your application?

Baking

The unique benefits of a steel bake oven belt lie in its physical form. Flat, smooth and stable, IPCO bake oven belts offer a combination of qualities that ensure efficient, reliable operation and outstanding bake quality.

Much of this is due to the excellent heat transfer and thermal conductivity of the belt, but its stability is also key: a steel belt stays flat as it passes through the intense heat of the oven, resulting in a consistent bake.

A flat, smooth surface also ensures clean and easy discharge of the baked product.

Good tension and tracking characteristics – and resistance to stretching too – result in low maintenance requirements and levels of durability that mean a working life of 20+ years is far from unusual.

Belts in widths from 800 mm to 3500 mm make it possible to achieve significant improvements in productivity

One oven – multiple product types
Another major benefit of solid and perforated steel bake oven belts is their versatility: they can be used for products as diverse as biscuits, brownies, crackers, pastries, energy bars, part-baked bread, sponges, all-butter cookies, pizza bases and more. This factor alone has convinced a number of major bakeries to upgrade from mesh belts, enabling them to broaden their ranges and enter new markets.

Our ability to produce belts in widths from 800 mm to 3500 mm also makes it possible to achieve significant improvements in productivity without increasing line length and having to invest in factory extensions or new facilities.

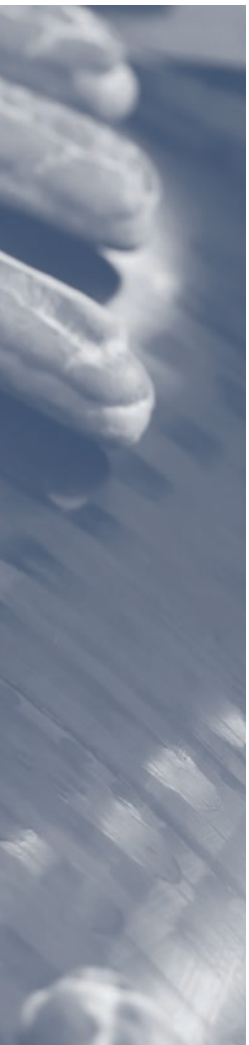
Energy efficient for reduced carbon footprint
An additional benefit of upgrading is that solid steel belts are lighter than wire mesh – perforated steel belts lighter still – so cost up to 30% less to heat. As much of 25% of an oven's energy consumption is needed to heat the belt, so these savings can be considerable.

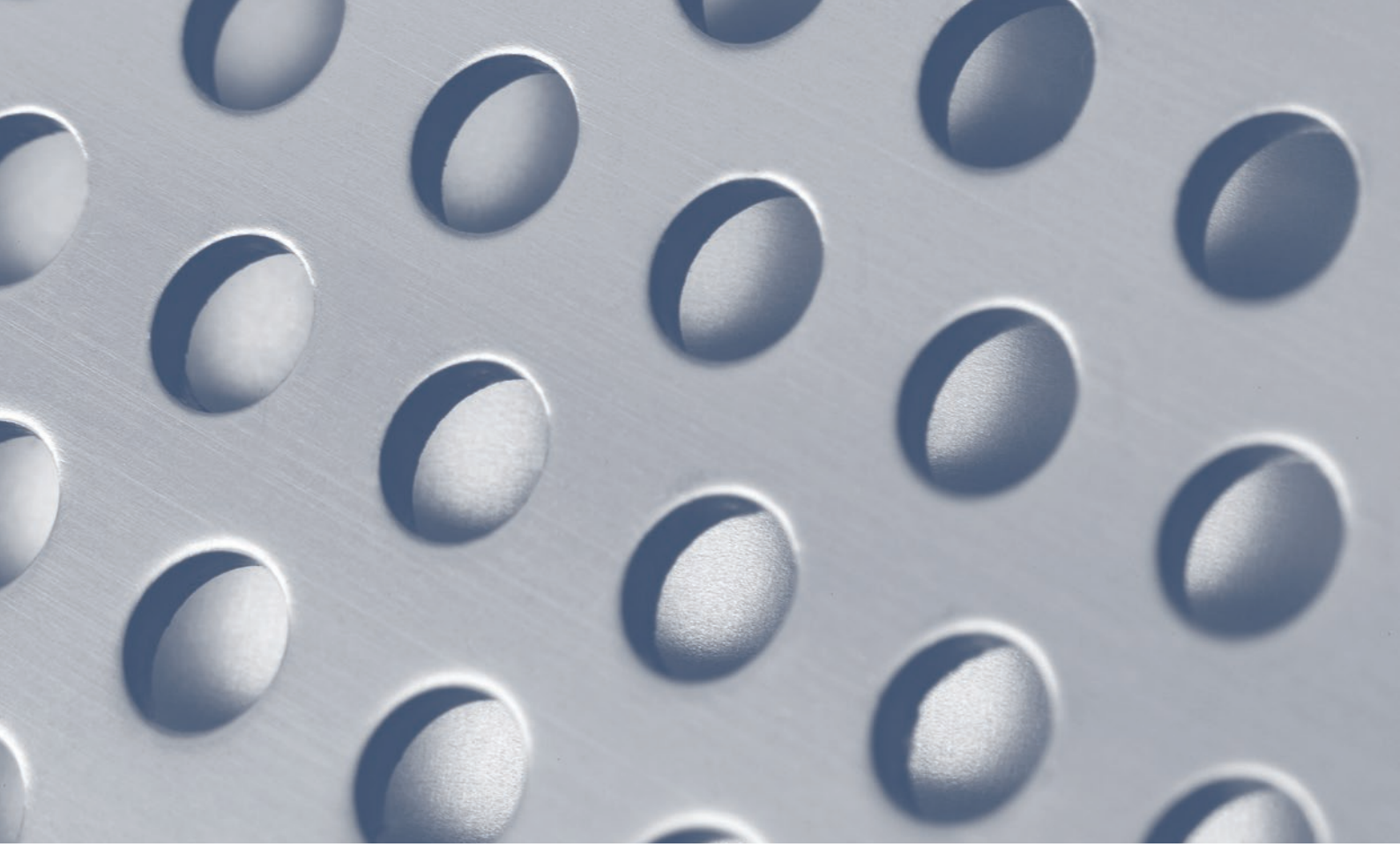
Bake-drying

IPCO steel belts are often employed in continuous bake-drying systems used for the production of extruded pet snacks and other products. The smoothness of the steel belt enables easy discharge of the dried product, while cleaning facilities can be built into the return strand of the belt to ensure maximum hygiene on each cycle.

Casting

The flat, even surface of a steel belt makes it suited to casting applications in which a product melt or slurry is delivered onto the belt in an even thickness for processing. Depending on the nature of the product or process, retaining strips can be applied to the belt edges.





Conditioning

Our steel belts can be used in combination with zoned cooling systems to deliver effective multi-stage conditioning for chocolate and other products.

Conveying

Conveying is at the heart of all continuous food processing systems and our experience in delivering the most appropriate solutions is unsurpassed. This expertise extends to ambient conveying where products simply need to be moved from A to B.

Of course, some products don't need the strength, hygiene or corrosion-resistance of a stainless steel belt but for those applications that do, we can provide whatever level of support you're looking for.

We can supply belt only or a comprehensive range of conveyor components including drums, compact belt tracking devices, belt and drum cleaners, safety scrapers, belt edge detectors, cast iron skid bars and graphite skid bars.

We can also supply complete, standalone conveyor units that represent best practice in terms of hygienic food conveying. These feature stainless steel framework that allows easy access for cleaning, with no hard-to-reach places in which dirt and bacteria could otherwise collect. The framework is also designed to minimize the risk of water pooling after cleaning, reducing the possibility of bacterial growth.

Cooling

Steel belt cooling systems are widely used for solidifying food melts and pastes into a form suitable for easy handling, packaging or subsequent reprocessing.

Applications include chocolate, gum base, gelatine, hard melt candy, nougat, liquorice,

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nut brittle, cooked/steamed vegetables and more. IPCO steel belts are also used in zoned conditioning systems for slab and bar casting applications such as caramel and sugar mass.

As well as manufacturing steel belts for third party cooling lines, we are also able to supply a full range of feeding, cooling and associated control equipment.

Drying

IPCO perforated steel belts are the ideal conveying medium for multi-stage dryers used to dehydrate fruit and vegetables. These systems enable controlled dehydration by the flow of air through the product and belt, with fast throughput and low operating costs.

The use of multi-stage drying units allows time/temperature curves to be optimised for products as diverse as potatoes, carrots, apples, orange peel, celery, garlic and tomatoes. Systems are also available for sensitive products such as cut strawberries, blueberries, pineapple, mango and more.

As with all food processes, hygiene is critical and the use of stainless steel belts with their ease of cleaning enables significant reductions in bacteria, yeast and mould counts compared with other belt types.

Finishing

The versatile qualities of a stainless steel belt make it the ideal surface on which to carry out continuous finishing operations on baked products, such as cutting, folding, layering and chocolate enrobing.

Freezing

The superb conductivity of a steel belt combined with its excellent mechanical properties at low temperatures makes it an exceptionally efficient medium on which to freeze a range of products, including instant coffee.

After roasting, the coffee is milled, turned into a slurry and deposited onto a continuously running steel belt that travels through the freezer. The frozen material is then broken up, milled and dried, leaving behind pure coffee extract.

The hard, flat, smooth surface of a steel belt ensures easy product release at the end of the freezer, while also making it easy and economical to clean, enabling the highest standards of hygiene to be maintained.

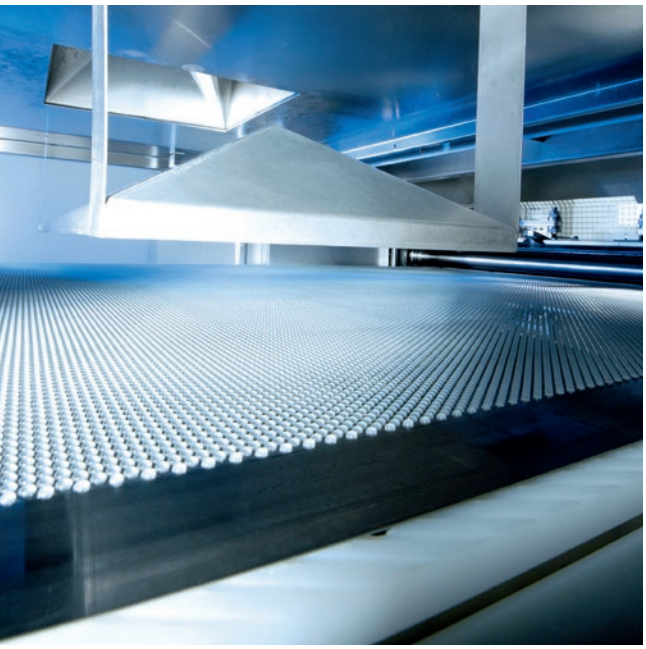
Other products frequently frozen on IPCO steel belts include seafood, meat, plain and breaded hamburger patties, chicken pieces and minced meat for baby food.

As with cooling lines, we can either work with OEMs or supply complete systems for the production and distribution of chilled air (evaporators, impingement boxes, ammonia group valves).

GMP/FDA Compliant Production

Stainless steel belts are inherently hygienic and can therefore be used in systems requiring compliance with the highest standards. We can also support OEMs with the design of conveying and processing systems to satisfy the standards necessary for FDA compliance and Good Manufacturing Practice (GMP) operations.

For straightforward conveying operations, we can offer our own food grade conveyor unit, specifically designed for food handling and processing. This features a stainless steel framework that allows easy access for cleaning. All bearings are food approved and lubricated for life with food-approved lubricating grease. The motor is food-approved and has IP66 protection.



Meat processing

IPCO steel belts provide a flat, smooth, hard and inert conveying medium that can be quickly and easily cleaned and sanitized. This makes them ideally suited to hygiene critical processes such as deboning, cutting, sorting and conveying operations.

Efficient cleaning enables high standards of hygiene to be maintained. Research by Finnish food laboratory VTT Expert Services Ltd has confirmed the superior cleanability of stainless steel compared with other conveyor materials.

Ease of cleaning offers other benefits too. Low water consumption and reduced use of cleaning chemicals or detergents means savings of up to 30% and less environmental impact, while faster cleaning results in less downtime.

Our engineers can advise on upgrade paths or optimum process layouts, and the company's worldwide technical support network means that installations and commissioning can be carried out quickly and efficiently.

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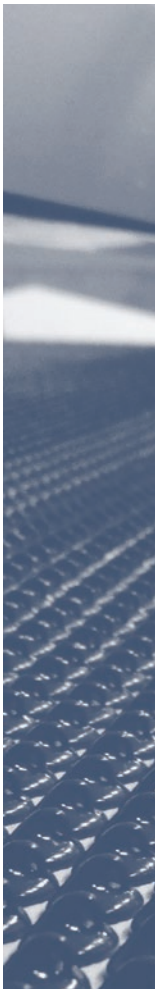


Printing

While not strictly a food application, IPCO steel belts are used in the production of food packaging, specifically high speed digital print lines.

Key benefits of a steel belt conveyor in this highly demanding application include its stability – unlike other belt materials it will not stretch or vibrate in operation – and the assurance of manufacturing accuracy to the finest tolerances, guaranteeing a consistent distance between the print head and packaging material.

Pastillation

Our steel belts are used extensively in the chocolate industry for pastillation and other forming processes.

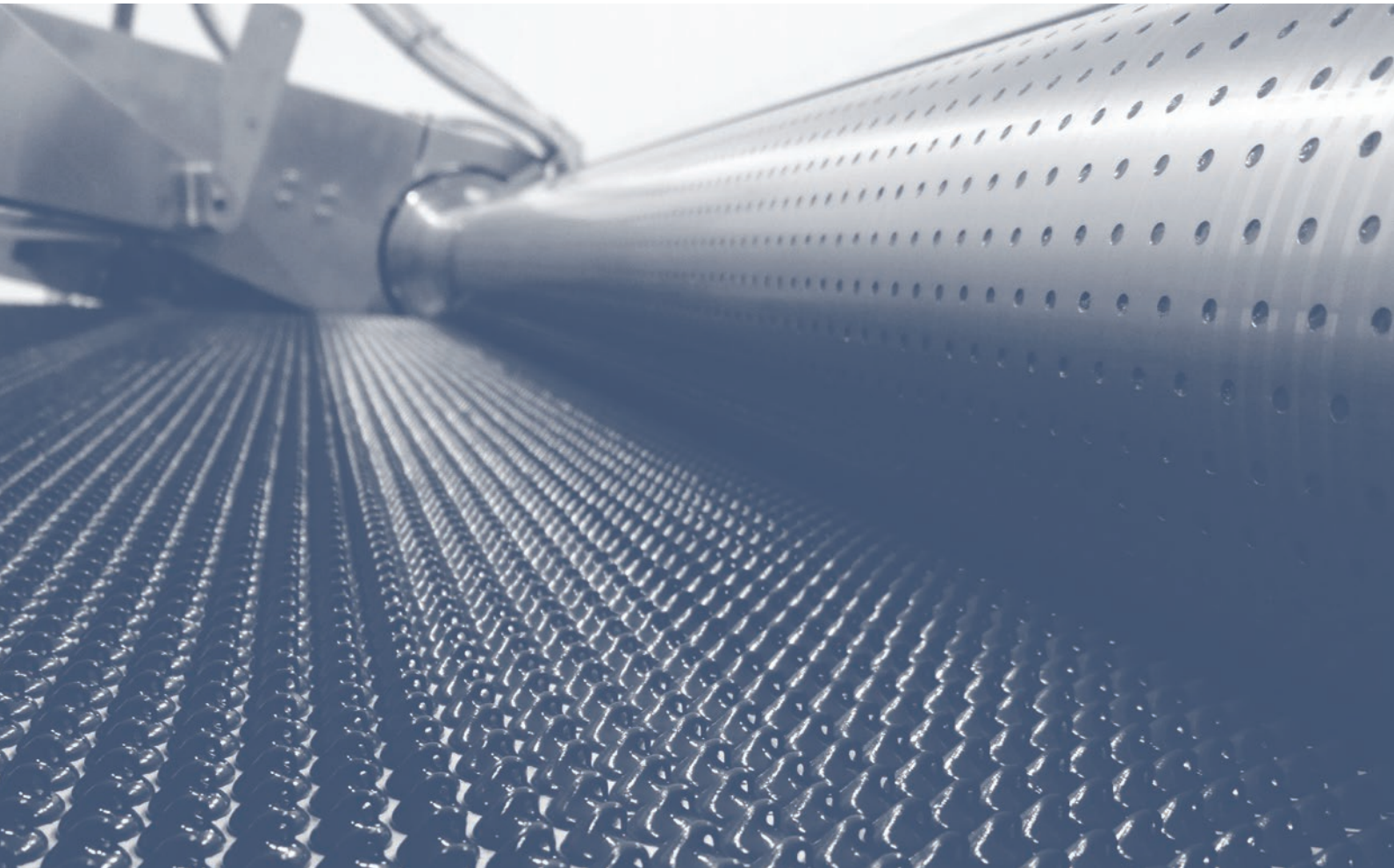
The outstanding thermal qualities of the steel belt enable controlled and efficient cooling and solidification of the melt, resulting in a consistent, high quality end product in a form ideal for easy handling, bagging, dosing, mixing and remelting.

The chocolate is deposited onto a continuously running steel belt and the heat of the drops is transferred to cooling air blown onto the product and also to the belt itself. A short cooling time means that very little oxygen can penetrate the product.

Sorting

We have supplied hundreds of steel belts for use in tomato sorting tables (also known as merry-go-rounds) and tomato selecting tables.

The citric and malic acids in tomatoes place particular demands on conveyor materials but our ability to supply steel belts grades offering exceptional corrosion resistance means we can deliver durable solutions for tomato processing. In addition, ease of cleaning ensures the lowest post-wash bacteria levels of any conveyor material and also helps reduce costs through savings in water and detergents.



Steam cooking

Another important application for IPCO steel belts is steam cooking, a process that combines heat and high humidity to create an environment in which a stainless steel conveyor is the only realistic solution.

This ability to carry out cooking in a continuous process means that throughput rates are significantly greater than could ever be achieved with batch processing. It also results in constant temperature and humidity, unlike batch processes where there is an unavoidable change in conditions every time a door is opened or a process switched off.

Stripforming

We supply steel belts for slab and bar casting applications such as caramel and sugar mass. Again, we can work with end users or OEMs, and supply feed devices, retainer strips and cutting/breaking solutions to suit different product types.

Thin film casting/drying

High quality steel belt engineering technologies have opened the door to a growing market: thin film casting. The use of a precision engineered steel belt in conjunction with special sheet casting and drying systems enables liquid or pasty products (slurry) to be converted into extremely thin films of precise thicknesses.

Applications for this technology include edible films, sweeteners and next generation tobacco products. Similar systems, based on IPCO super-mirror-polished steel belts manufactured to extremely fine tolerances, are used for the production of high quality plastic films and foils.

What's your application?

Additives	Cooling
Agar agar	Drying
Apples	Drying
Apricots	Drying
Baby food	Freezing
Banana	Drying
Bell pepper	Drying
Biscuits	Baking
Berries	Drying
Bread (part baked)	Baking
Brownies	Baking
Cabbage	Drying
Candied fruit	Drying
Caramel	Cooling
Carrots	Drying
Carrots, cooked	Cooling
Celery	Drying
Chicken	Freezing
Chili	Drying
Choc ice	Freezing
Chocolate	Cooling, Forming
Choux pastry	Baking
Cocoa mass	Conveying
Coffee	Freezing
Cookies	Baking
Crackers	Baking
Custard	Cooling
Emulsifiers	Cooling
Energy bars	Baking
Fish fillets	Freezing

Flapjack	Baking
Fruit	Drying
Garlic	Drying
Gelatine	Cooling
Granola bars	Baking
Grapes	Drying
Gum base	Cooling
Hamburgers	Freezing
Hard melt candy	Cooling
Liquorice	Cooling
Macaroons	Baking
Mango	Drying
Meat	Conveying
Meat, minced	Cooking, Drying
Meringue	Baking
Nougat	Cooling
Nut brittle	Cooling
Nuts	Drying, Roasting
Onion	Drying
Orange peel	Drying
Pastries	Baking
Patisserie	Baking
Peppers	Drying
Pet food	Drying
Pineapple	Drying
Pizza bases	Baking
Potato	Drying
Prawns	Freezing
Seaweed	Drying
Seeds	Drying
Shellfish	Freezing
Shrimps	Freezing
Spinach	Drying, Freezing
Sponge cake	Baking, Finishing
Sugar	Conveying
Sugar mass, aerated	Cooling
Toffee	Cooling
Tomatoes	Drying, Sorting
Vegetables	Drying
Vegetables, cooked	Cooling, Freezing

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