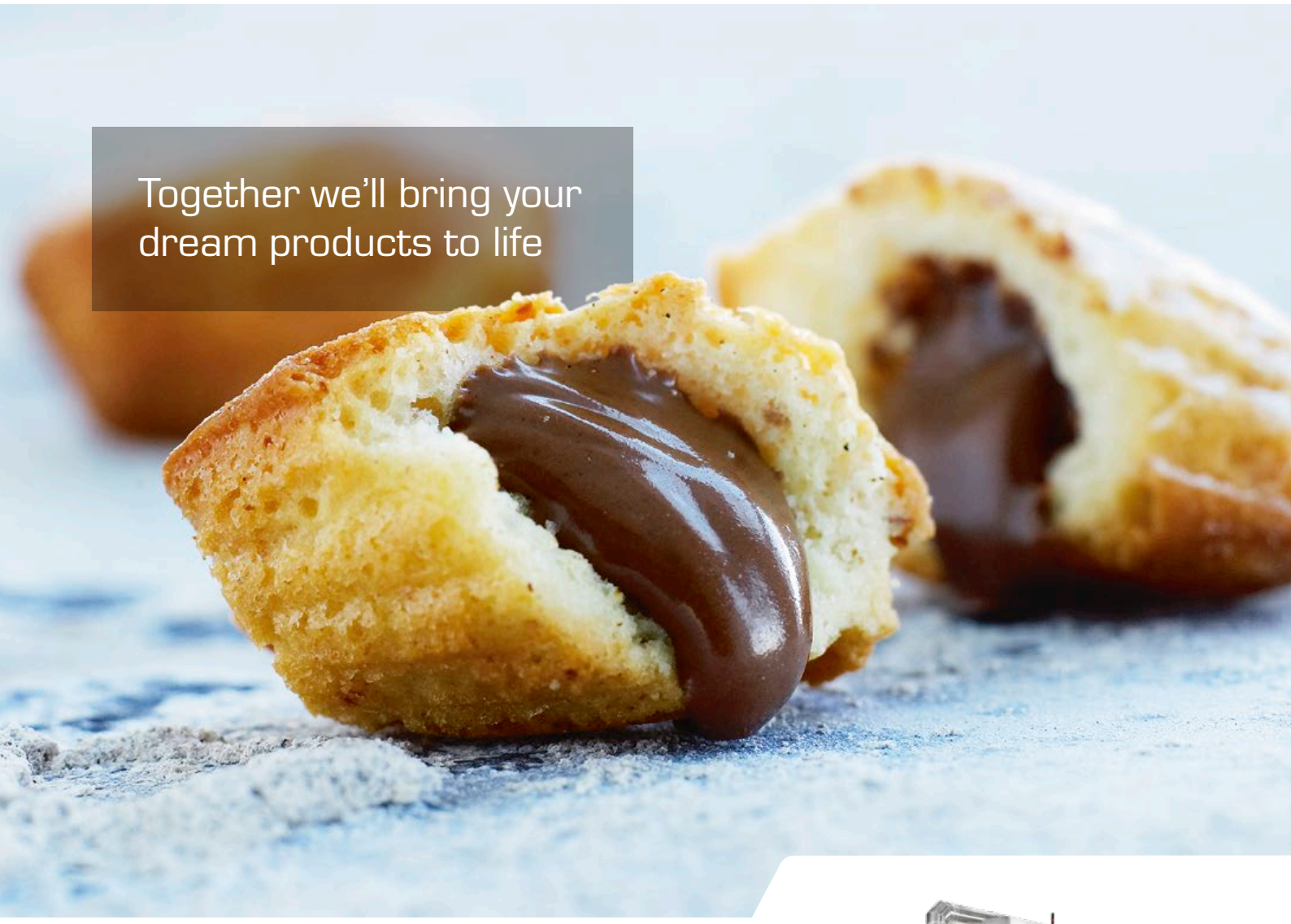
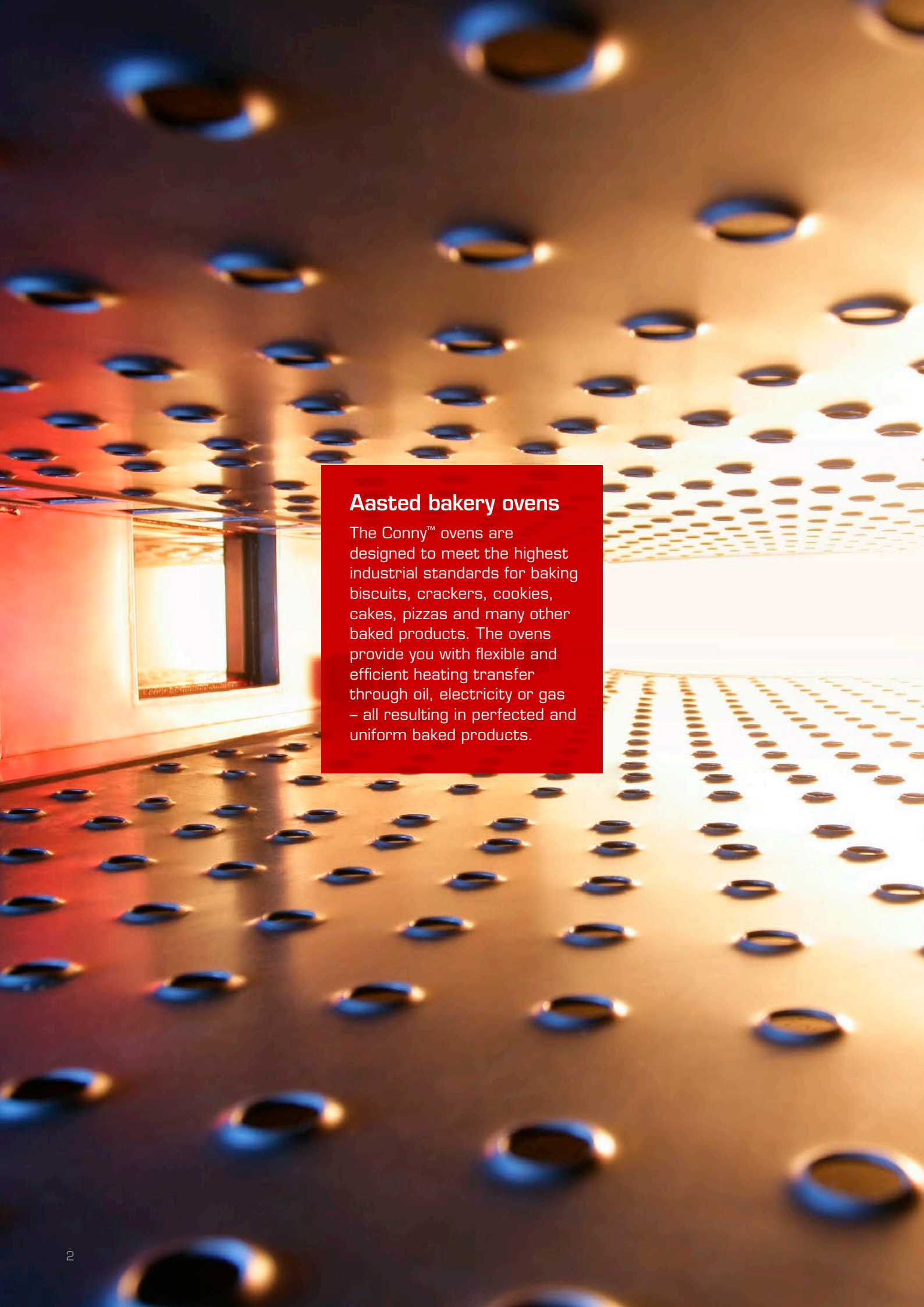
Conny™ ovens

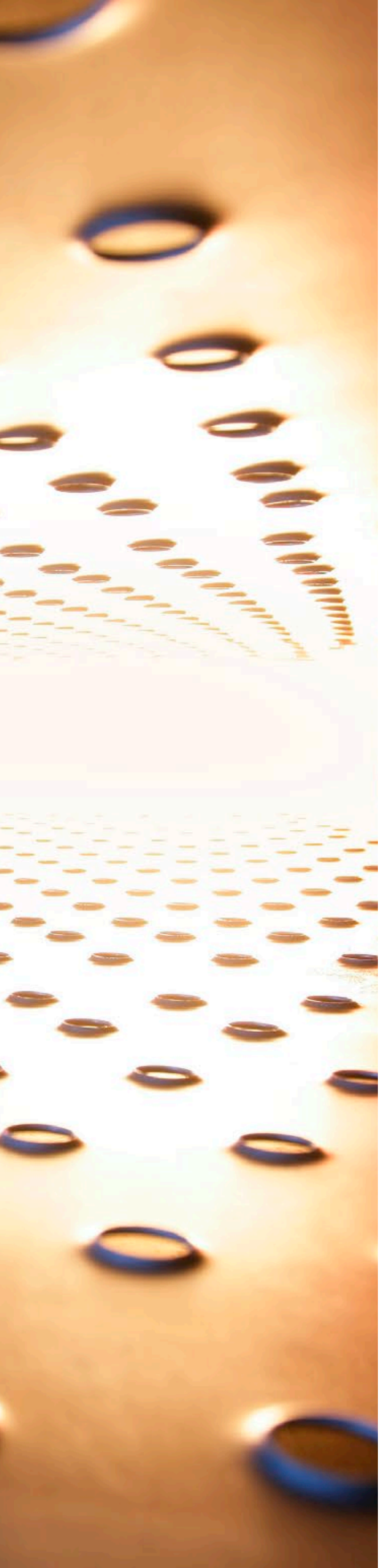


Welcome to our world



Aasted bakery ovens

The Conny™ ovens are designed to meet the highest industrial standards for baking biscuits, crackers, cookies, cakes, pizzas and many other baked products. The ovens provide you with flexible and efficient heating transfer through oil, electricity or gas – all resulting in perfected and uniform baked products.



Directly Gas Fired ovens

The Conny™ DGF oven is preferred for several products such as hard biscuits and crackers as well as several biscuit types. The Conny™ DGF oven provides you a uniform and perfect baking process, fast heating, high temperature and low energy consumption.

Convection ovens

The Conny™ convection oven bakes everything from biscuits, cookies, muffins to pizzas and much more. Engineered to provide you uniform and perfect baking, fast heating and minimum energy consumption.

Conny™ ovens

For more than 100 years Aasted has produced a major part of the world's biggest production lines for confectionery. In fact – we invented and successfully constructed – the world's first continuously running chocolate moulding line.

Today, we are also building some of the biggest and most sophisticated bakery production lines. When choosing a baking solution from Aasted, you will get a tailor made solution taking advantage of both our innovative thinking and our solid engineering skills.

Aasted is capable of offering a large portfolio of upstream and downstream equipment and hereby taking responsibility of a considerable part of the end product quality.

During the last decade we have used our competences and engineering skills to design a new innovative series of bakery tunnel ovens – we call it Conny™ bakery ovens. Depending on the application, we can offer:

- Indirect forced convection ovens (IFC ovens)
- Directly heated ovens (DGF ovens)
- High temperature ovens, possible with stone belt conveyors and stone interior
- Electrically heated ovens with both convection and radiation heating.

We welcome you to the world of Aasted bakery lines.

Design

All of our ovens are premanufactured and supplied in 2 m modules. All ovens are preassembled and tested in our factory prior to shipment to ensure a fast and smooth installation on site. Cables are typically wired on open ladders in line with modern food safety standards.

The hot inner lining of the oven is floating on the oven base frame preventing stress and tension when heating and cooling of the oven. The inner lining/the baking chamber is insulated from the outer cladding and structure by carefully packed stone wool plates and bats. This way thermal loss is minimized to the surroundings.

A state of the art electrical controls system is controlling the thermal process ensuring low energy consumption and clear communication to the operators about the operational conditions of the oven.

Materials and cleaning features

The oven interior like ducts, inner lining and louvers are made of special corrosion resistant steel called CorTen. The outer cladding is typically made of enameled steel or stainless steel. Vapor hoods, feet and inlet hoods are made of glass blast stainless steel.

Each oven module is provided with minimum one large hinged cleaning door to provide access to the oven interior for cleaning and maintenance.

Optional features

- The oven can be supplied in all stainless steel inside with sloped bottom and drains for wash-down cleaning
- Steam injection system for improved baking properties, possibly with automatic humidity control system
- Direct and indirect heat recovery for optimization of the energy consumption.

HMI built into control panel of oven.
HMI on pivoting bracket is also available.

Electrically heated convection oven.

Wire mesh oven drive station.

Production of baked granola bars.

Conny™ Directly Gas Fired ovens (band widths – 800 to 1,500 mm)

Some products are preferably baked in directly heated ovens. Typical applications are pizza, hard biscuits, artisanal Arab bread, snack and crackers.

The main advantages of the DGF ovens are:

- High capacity through high installed power per square meter
- Very humid baking atmosphere providing high transfer rate of heat
- Flexible baking profile through easy burner management via control system

How it works

In the DGF oven a number of individual gas burners are placed directly in the oven chamber over and below the oven band, with the burner control system placed on the side of the oven. There is a central distribution system for both gas and air for each oven zone. The air supply is provided by a high pressure fan with speed control.

The gas supply is operated by a zero gas pressure system that ensures the correct mixture between gas and air. Each burner has an injector that mixes the air

and gas in the right ratio which ensures the correct temperature control of each oven zone. A flame detection system ensures that no gas is provided to the gas burner without a flame. If you prefer an electric heated baking room, the DGF is available with electric burners instead of gas.

Extraction of the oven air

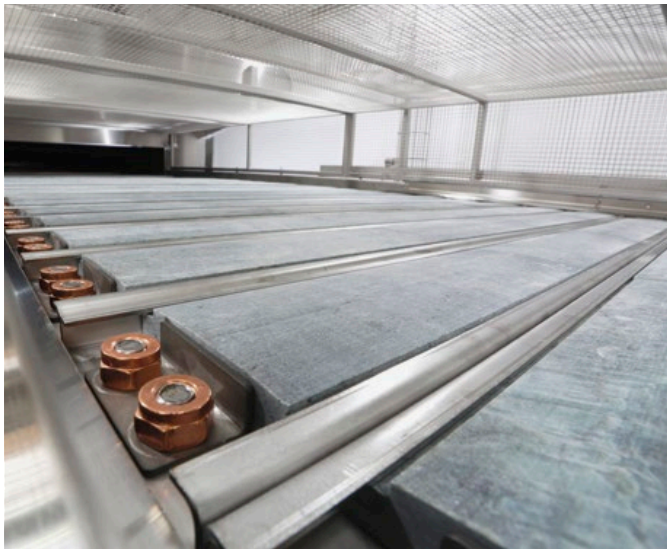
Each of the oven zones are provided with a sophisticated air extraction system that ensures both the right oven climate, but also the balancing of the temperature across the width of the oven.

Hybrid ovens

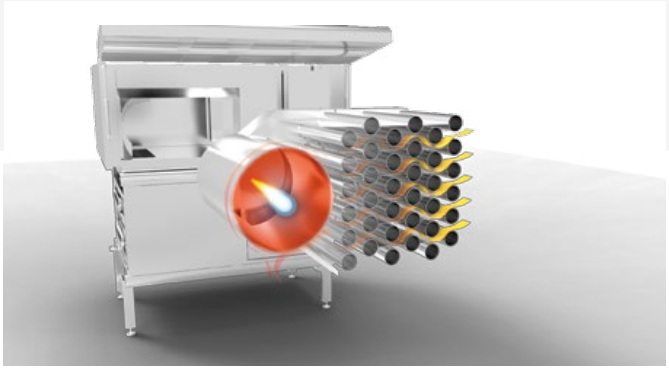
In some cases it makes sense to offer a combination of a directly heated oven and an indirectly heated convection oven – the so called hybrid ovens. In this case ex. the first half or the first third of the oven length is build as a DGF oven and the remaining part is an IFC oven. In this case the oven solution takes advantage of the higher temperature and higher humidity in the initial part of the baking and takes advantage of the better drying capabilities of the IFC oven in the last part of the baking process. The ideal configuration is depending on the specific product and application.

Large access doors to service oven interior and conveyor.

Oven transfer conveyor.



Stone belt conveyor



Heavyduty and high efficient heat exchanger

Conny™ convection ovens (band widths – 800 to 4,000 mm)

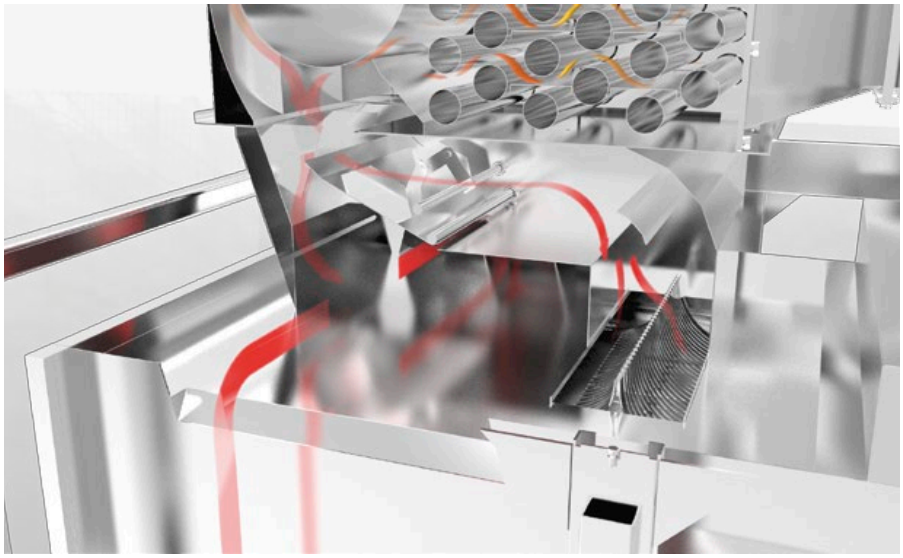
The Conny IFC oven is the most diverse and flexible oven in our oven program. The oven can bake cookies, biscuits, cakes, sponge dough, pizza, pies and many more products.
The main advantages of the Conny IFC oven is:

- Short baking time due to efficient heat transfer
- Very uniform bake, even colour and constant residual humidity
- Fast heating up of the oven and fast changeover of oven settings
- Lower temperature in oven due to convection and hereby lower energy consumption
- Easy and unambiguous control parameters
- Full control of humidity profile in oven
- Good capability of drying products as well.

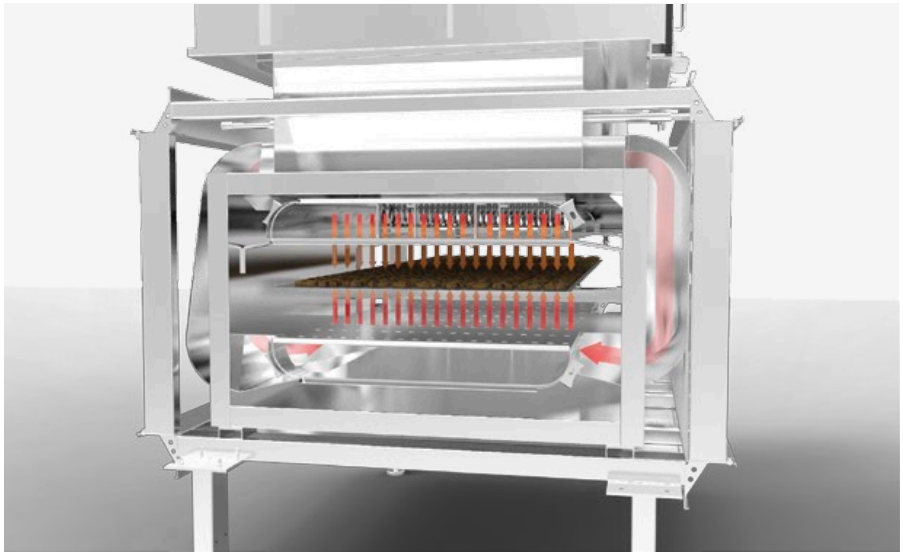
How does it work?

The heating source can be oil, bottled gas, natural gas or electricity. The combustion of the gas or oil heats up the inside of the heat exchanger. A large recirculation fan blows the air around the heat exchanger and hereby transfers the heat to the oven chamber. The main part of the heat is transferred through the surface of the combustion chamber and the rest is transferred in a counter flow process over the tube bundles of the heat exchanger. The principle has several advantages:

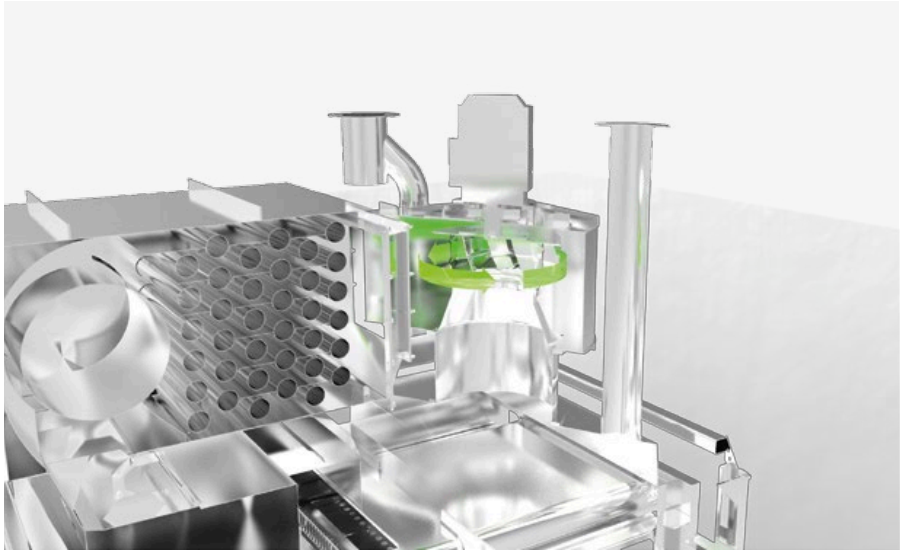
- High efficiency by transferring the heat with high turbulence in a counter flow principle
- Easy temperature control with just one temperature sensor
- No contact between products and combustions gasses
- Easy removal of combustions gasses through the stacks.



Louver guides e.g. 50% top and 50% bottom heat.



Balanced top and bottom heating in the chamber.



Recirculation fan takes fresh air into air flow and removes humidity.

Hot air distribution and humidity control

A servo driven louver guides the air to either the top or the bottom of the oven chamber.

The louver guides the air either to the top plenum in the oven chamber or the bottom plenum – or a combination of both to facilitate a balancing between top and bottom heat. All settings of the louver can be stored in the recipe control system of the oven.

The pressure difference between the suction side and the pressure side of the recirculation fan is used to take fresh (dry) air into the air flow and to remove the humid air from the oven chamber. This way the humidity level in the oven chamber can be controlled by changing the position of the fresh air louvers. Optionally the oven can be supplied with a humidity sensor to control the humidity level automatically.

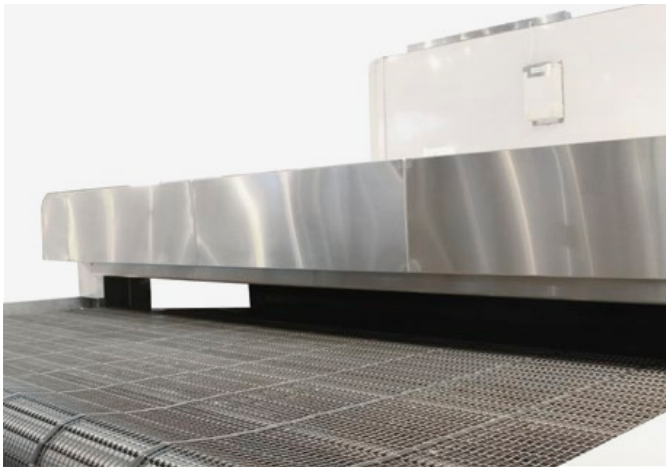
Controlling the oven profile

Each oven zone allows for full control of 3 parameters:

- Temperature
- Ratio between top and bottom air flow
- Fresh air exchange/ humidity level.

By combining the temperature, air flow and humidity in each of the individual oven zones it is possible to achieve the right baking profile – to achieve the right quality of the end product. Aasted has experienced food technologists, bakers and commissioning engineers to assist when identifying the right baking profile.

High speed transfer oven conveyor.



OGB belts for carrying of baking pans, blisters etc.

Stone belt conveyors for artisanal bread, pizza etc.

Oven conveyors

The conveyor solution depends on the product to be baked. Aasted can offer multiple solutions like solid steel belts, wire mesh steel belts, stone conveyors or special conveyors.

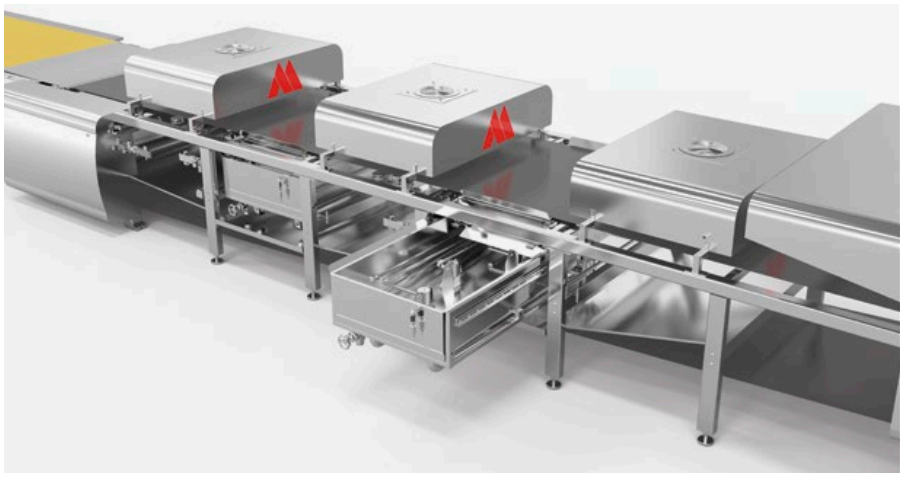
Steel belt, typically for soft cookies, biscuits, sponge dough, meringues etc. working width up to 1,500 mm or alternatively longitudinally welded belts for wider applications.

Driving and tensioning stations

- Driving station with directly connection between gear motor and drum shaft (no chain to be maintained)
- Transfer conveyor with dump facility
- Tensioning station for OGB belt with product loader
- Driving station for OGB belt with product off loader
- Driving station for light mesh conveyor.

Oven inlet with cookie depositor.

Steel band oven with hydro cooling system.



Easy access to hydro-cooling system via off-line function of the water-spray system.

Cooling systems

Wide range of cooling solutions
Aasted can offer a wide range of solutions to cool down your products.

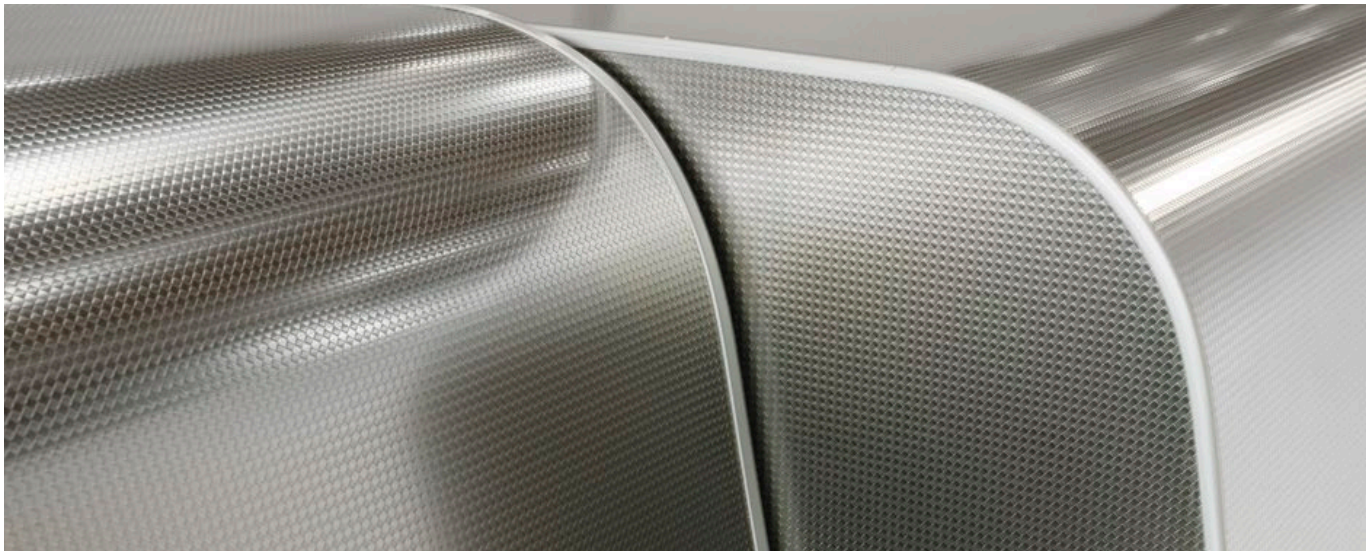
An optimal cooling process ensures that the following processing and packaging process can be done correctly.

Hydro cooling of oven steel belt
Hydro cooling of the oven steel belt is an option for special applications like ex. chocolate chip cookies or meringue products as it provides an almost instant cooling by means of chilled water sprayed onto the downside of the oven steel belt.

The main advantages of the hydro cooling system are:

- Very efficient contact cooling of the product reducing the length of the following ambient/active cooling
- Improved release from the oven belt on some types of products
- Reduced thermal load on the production environment due to the instant cooling of the oven steel belt.

Aasted has done several improvements and refined the design of the hydro cooling system to improve access to the water catch pans, quick connections to water supply, optimization of the spray nozzles etc.– resulting in a proven system with high efficiency in the cooling process.



Cooling tunnels

The range of Nielsen cooling tunnels from Aasted has set the industrial standard for years within efficient cooling of baked goods and chocolate products. The product range covers from small 420 mm wide tunnels with integrated cooling compressors to 2,600 mm wide heavy duty stainless steel tunnels in sanitary design. The scope is very extensive and covers important features like:

- Stainless steel versions in sanitary design
- Air drying units to minimize the humidity level/ remove the risk of condensation
- Use of glycol from factory circuits
- Filter systems to collect crumbs
- Contact cooling via water jacketed conveyor tables

Cooling tunnels are primarily used when floor space is restricted or when products are refined with chocolate coatings, decorations, sandwiching processes etc.

Ambient cooling conveyors

Each factory typically requires its own layout of ambient cooling conveyors. Aasted can offer complete solutions of transportation inclusive of curves, retraction facilities, switch tracks, alignment etc. Our engineers have a substantial experience in organizing factory product flow and are ready to work out a proposal for your specific applications.

Auxiliary equipment

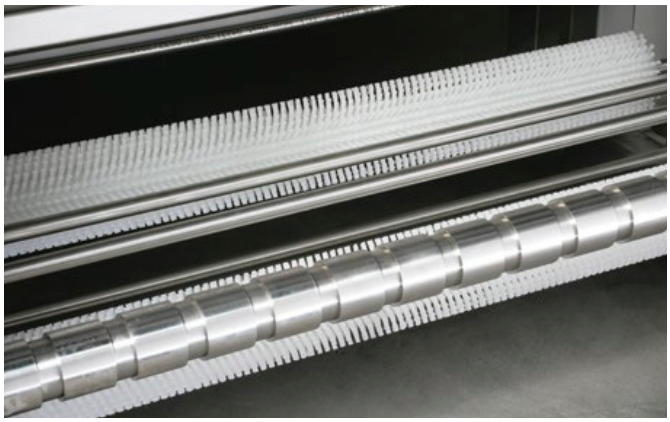
The Conny™ ovens have a wide range of auxiliary equipment. The various accessories you need depend on the product you want to produce. For instance, the feed section where unbaked products are deposited/extruded. This section can be complimented with for instance a guillotine, cup depositor etc.

Furthermore, the accessories can also be important details such as a sprinkling device, belt scraper or a transfer conveyor.

Regardless of your requirement, Aasted have the equipment you need to make your dream product come true.

- Transfer conveyor
- Inspection hatch
- Greasing unit
- Belt scraper
- Steel brush for steel band
- Air cooling system
- Water cooling system
- Cooling conveyor
- Cooling tunnel
- Sprinkling devices
- Cup dispenser
- Dough feeder
- Depositors and extruders

Hinged cleaning door.



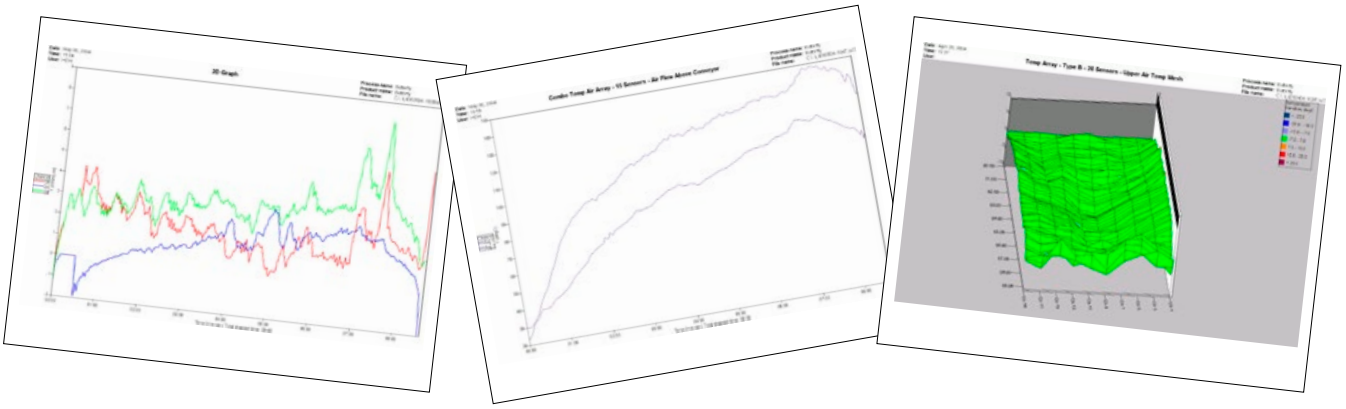
Brush for cleaning of steel band..

Greasing unit.

Optimizing the baking process

Very often a given baking process can be optimized both in terms of end product quality and in terms of energy consumption. At Aasted we have data logging equipment to assess your baking process and we can very often suggest measures to reduce the energy consumption of your baking process. Also the programmed sequences during start up and idle running of the oven can potentially reduce the energy consumption of the oven.

On a number of occasions we have been able to optimize the energy consumption of our oven system and to transfer a current baking process to a new Conny oven with significant savings in energy costs.



Data logging of baking process

Complete Conny™ oven programme

- Convection Oven – heated with gas, oil or electrical power
- Direct Gas Fired Ovens – available with electric burners instead of gas
- Hybrid DGF and Convection oven

Applications

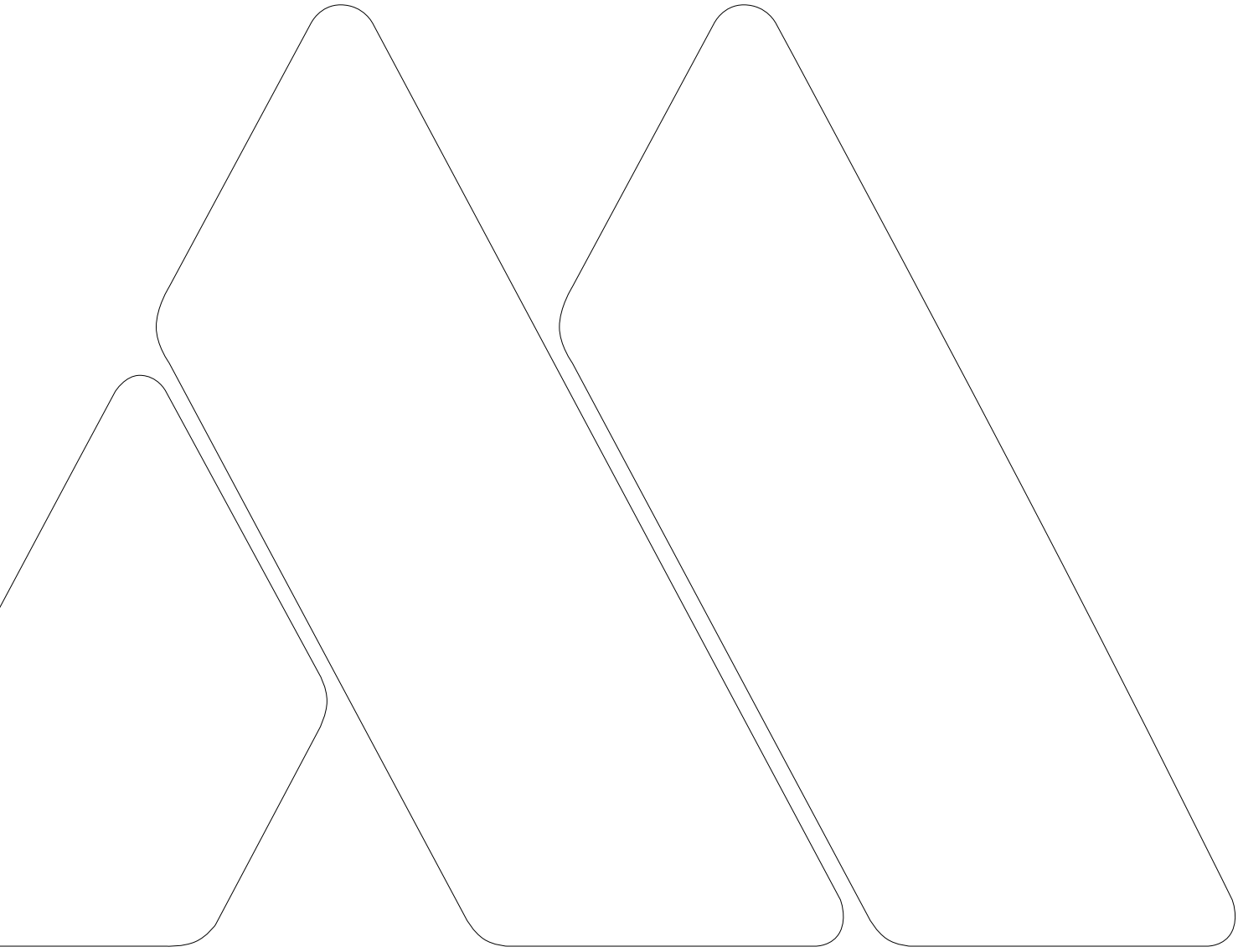
- Biscuits
- Cookies
- Cakes
- Crackers
- Sponge cakes
- Pies
- Pizza
- Flatbread
- Snacks
- Rolls

Belt types

- Stone belt
- Steel belt
- OGB belt
- Wire mesh
- Caterpillar
- Your requirement

> “Aasted was fantastic in being able to design a line that met our requirements.”

Joe Reade,
Owner and CEO
Island Bakery



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