



VULGANUS®

# FREEZING

SOLUTIONS FOR INDUSTRIAL  
CHILLING AND ICELESS  
FREEZING

# Frozen bakery products are economical and always fresh

Frozen bakery products have many advantages. Production is much more flexible than for fresh products, while production costs are lower thanks to bigger runs with economical production times.

**Deliveries and stocks can be handled in larger volumes**, thus reducing logistics costs for both producer and consumer. **Consumers always get fresh products** as baked goods can be prepared from freezer to oven in exactly the right quantity, which also significantly reduces waste.

**The Vulganus Arctic Spiral and Vulganus Iceless** are made for freezing bakery

products hygienically, efficiently, and economically. The products are frozen quickly using fully enclosed air circulation.

These solutions are particularly suitable for large volumes and continuous processes.

Take a closer look at Vulganus freezing and chilling solutions and start to plan a more economical solution for your production line.

We offer turnkey delivery from planning and design to a complete installation service. We can also provide remote analysis and control systems for efficient production.

## ARCTIC SPIRAL AND ICELESS FOR FREEZING AND CHILLING

- Optimized air circulation for efficient freezing
- Minimized evaporation and weight loss
- Rapid process ensures hygiene and quality
- Suitable for dough, raw frozen, and pre-baked products





# Arctic Spiral

## FOR EFFICIENT INDUSTRIAL FREEZING AND CHILLING

The Vulganus Arctic Spiral is a hygienic, continuous-spiral solution for chilling and freezing. The products are chilled or frozen quickly and efficiently using fully enclosed air circulation. The solution is highly hygienic and the rapid process limits the growth of bacteria. Fast processing also minimizes evaporation and weight loss, leading to improved productivity.



- Open structures for easy washing
- Fiberglass or stainless steel flooring
- Durable, long-lasting construction and materials
- Efficient evaporator for chilling or freezing
- High capacity
- Pressure wall always included
- For continuous production
- Optimized air circulation improves freezing

## HIGHLY HYGIENIC

- Open structures for easy cleaning
- Inclined surfaces
- Glass grain-blasted surfaces
- Stainless steel structure
- No oiling required on sliding surfaces



## KEY FEATURES

- Radius: 1.7 or 2.2 m
- Friction-driven spiral cage
- Max. usable belt width: 1320 mm
- Belt type chosen according to end product
- High-density drum plastics
- Available accessories: Iceless pressure channel, Vulganus Washing System, Vulganus Infoline remote control system



# Air Cooler

AIR-COOLER SOLUTIONS REQUIRE HIGHLY ACCURATE CASE-BY-CASE PLANNING FOR DIFFERENT PRODUCTS AND CIRCUMSTANCES.



## FACTORS INFLUENCING THE CHOICE OF AIR COOLER

- Preferred refrigerant
- Processing time
- Air circulation system
- Preferred air cooler defrosting system

## FACTORS TO CONSIDER DURING SPECIFICATION

- Sufficient capacity to chill or freeze products to the desired temperature within the planned time
- The air velocity chosen for the product can be achieved with the product surface area
- The size of the air cooler is suitable for the size of the spiral system

## CONTINUOUS OPERATION

Production doesn't need to be interrupted while the air coolers are defrosted - one air cooler can be defrosted while the others continue to operate.



## DEFROSTING OF AIR COOLERS

Efficient defrosting of air coolers is important to ensure a stable production process with no unplanned breaks. continue to operate.



Defrosting with air



Electric defrosting



Defrosting with hot gas



Defrosting with water



A combination of methods for very quick defrosting

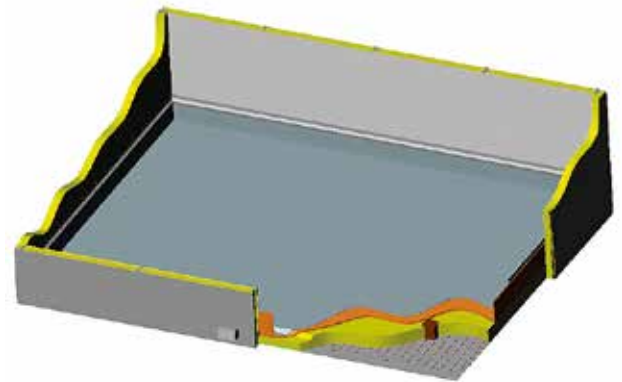
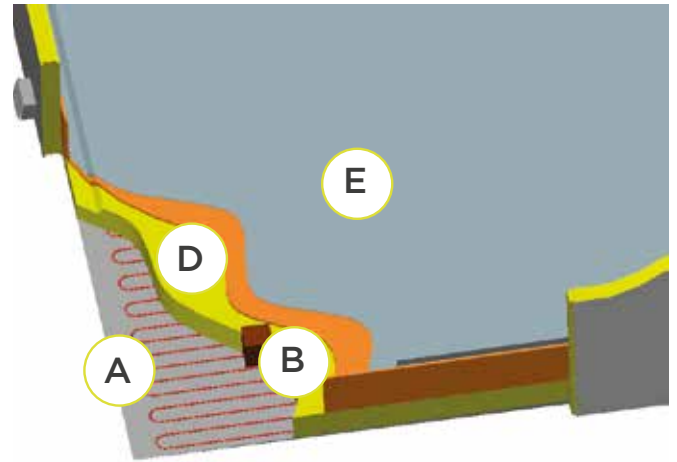
## INSULATED ENCLOSURE

The insulated enclosure consists of floor, wall, and ceiling elements.

### A STANDARD ENCLOSURE INCLUDES

Two doors with heated frames.

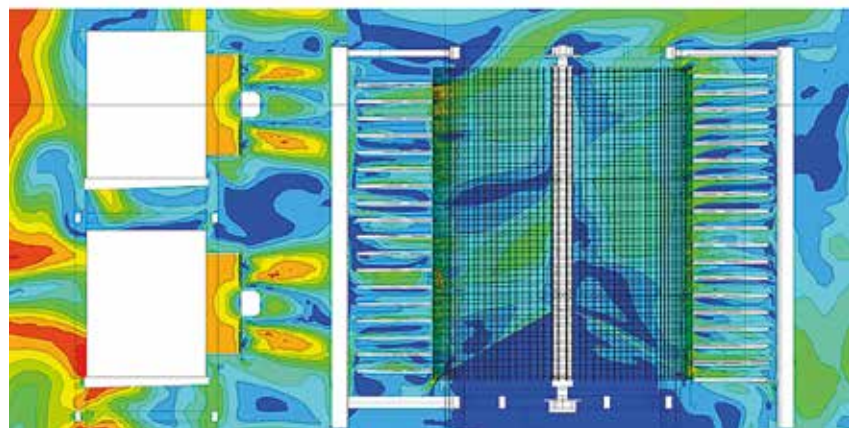
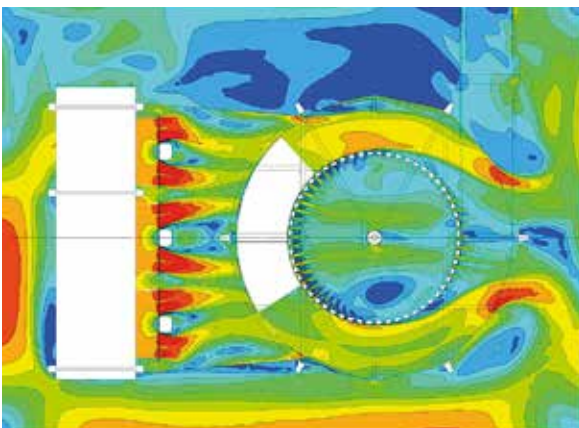
- A** Electric floor heating to prevent frost damage
- B** Supports on the floor at load points to ensure stability
- C** Powder-coated or stainless steel surface
- D** Polyurethane insulation elements, normally 100-120 mm thick
- E** Floor coating is typically fiberglass or stainless steel. Energy-efficient LED lightning



Inner walls are stainless steel.

The enclosures are designed to be rigid and durable, yet easy to wash.

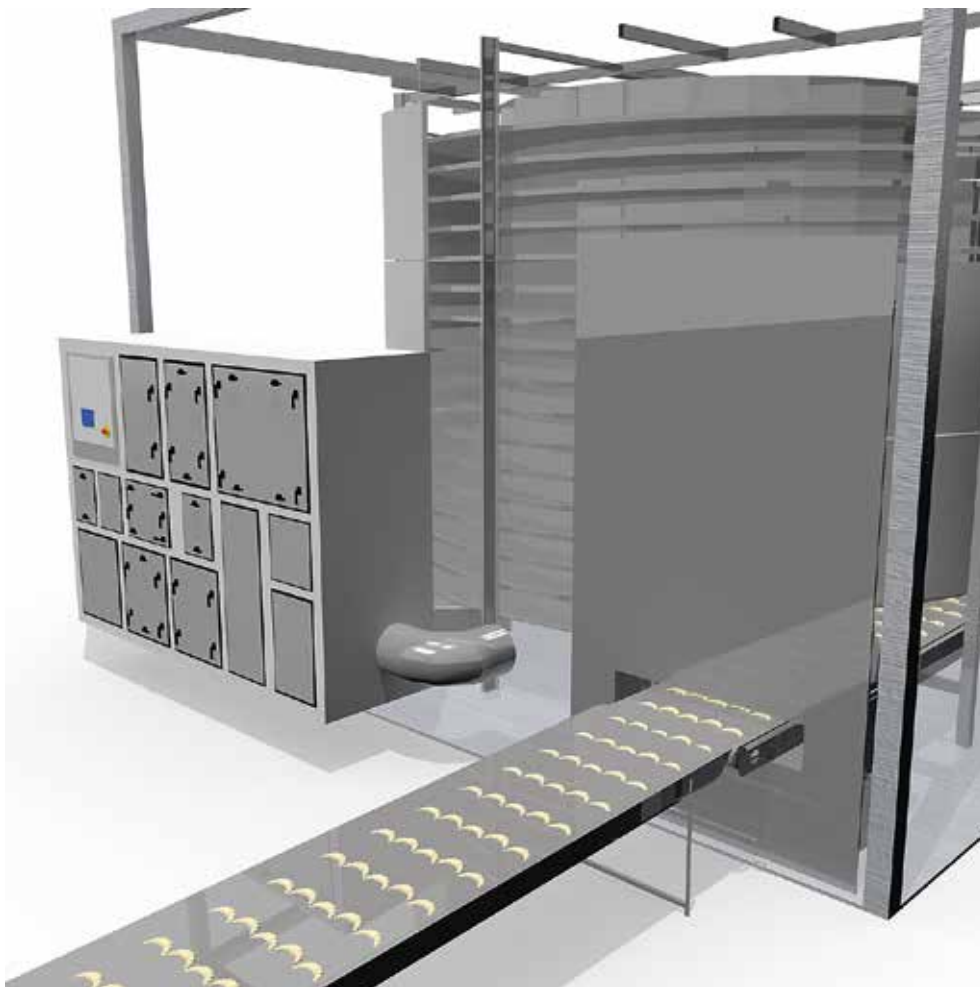
### Air circulation in a Vulganus Arctic line spiral system



# Iceless

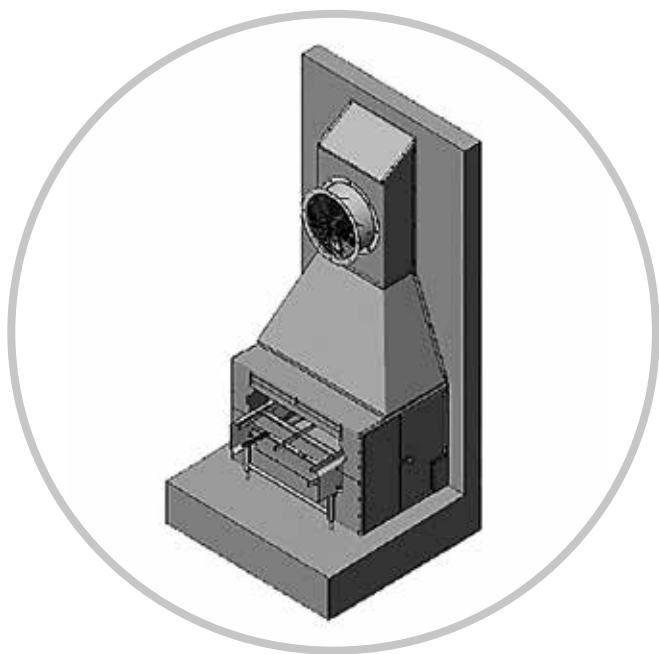
## ICE-PREVENTION SOLUTION FOR FREEZING SYSTEMS

The Vulganus Iceless solution reduces ice buildup by preventing ice from forming during the freezing process, ensuring ice-free air coolers, belts, process rooms, and frame structures.



- Individually designed modular system
- No defrosting required
- Ice-free air coolers, belts, process rooms, and frame structures
- Easy to connect to both new and existing freezing and cooling lines
- Reduces energy consumption and operating costs
- Quick and easy installation





## PRESSURE WALL

- Mandatory in iceless systems
- Prevents humidity at openings
- Iceless system can be upgraded with additional pressure control for opening areas
- Also available as a standalone system

## EFFECTIVE HUMIDITY PROTECTION

- Most of the humidity comes from the openings, some from the product
- The system's two-stage drying process effectively dries the air and pressurizes the enclosure and openings, preventing outside humidity from reaching the interior
- The system extends running periods between melting cycles

## **PROCESS KNOWLEDGE AND CONSULTATION**

We have over 100 years of experience in raw materials for baking, recipes, R&D, and production processes. Today, we also have expertise in several food solutions. Our experts are happy to support customers with their process-improvement needs.

## **INSTALLATION AND COMMISSIONING**

As soon as the new machinery is installed in the customer's premises, our commissioning team arrives to complete the delivery. We provide advice on using the new equipment and perform the first product test runs together with the customer. The customer also receives a detailed user manual.

## **PLANNING AND LAYOUT DESIGN**

Every project starts with a careful study of the customer's current situation. We help to plan process improvements and product runs, and our development department designs the new process from scratch.

## **VULGANUS WASHING SYSTEM**

The Vulganus Washing System is a forerunner in hygiene. The product family has various options: Belt Washer, Ultrasonic Belt Washer, CIP Washing System, and Fixed Brush. Washing system products reduce energy usage and shorten cleaning times.



## **INFOLINE REMOTE CONTROL AND ANALYSIS**

The Infoline system can be delivered with new equipment. It can either be operated by the customer's own team, or the customer can give us access to their production analysis systems for easier maintenance. The Infoline system consists of production trends, alarms, and event lists, including values such as starts and stops, set values, and recipe and operator changes.

## **SERVICE AND SPARE PARTS**

Our service team takes excellent care of our customers' equipment. As specialists in the whole baking process, we can help our customers with every aspect of their operations. We supply original spare parts to ensure safe, smooth production runs and reliable operation.







# VULGANUS®

Vulganus has been a leading player in the delivery of tailored production lines, integrated spiral systems, clean rooms, and conveyors for over forty years, with over 400 projects successfully completed around the world. Vulganus solutions are designed and built for hygiene.

Vulganus is known for its high quality, customer-oriented solutions and high-quality service, along with its ability to understand and meet customer needs and build long-term customer relationships.