



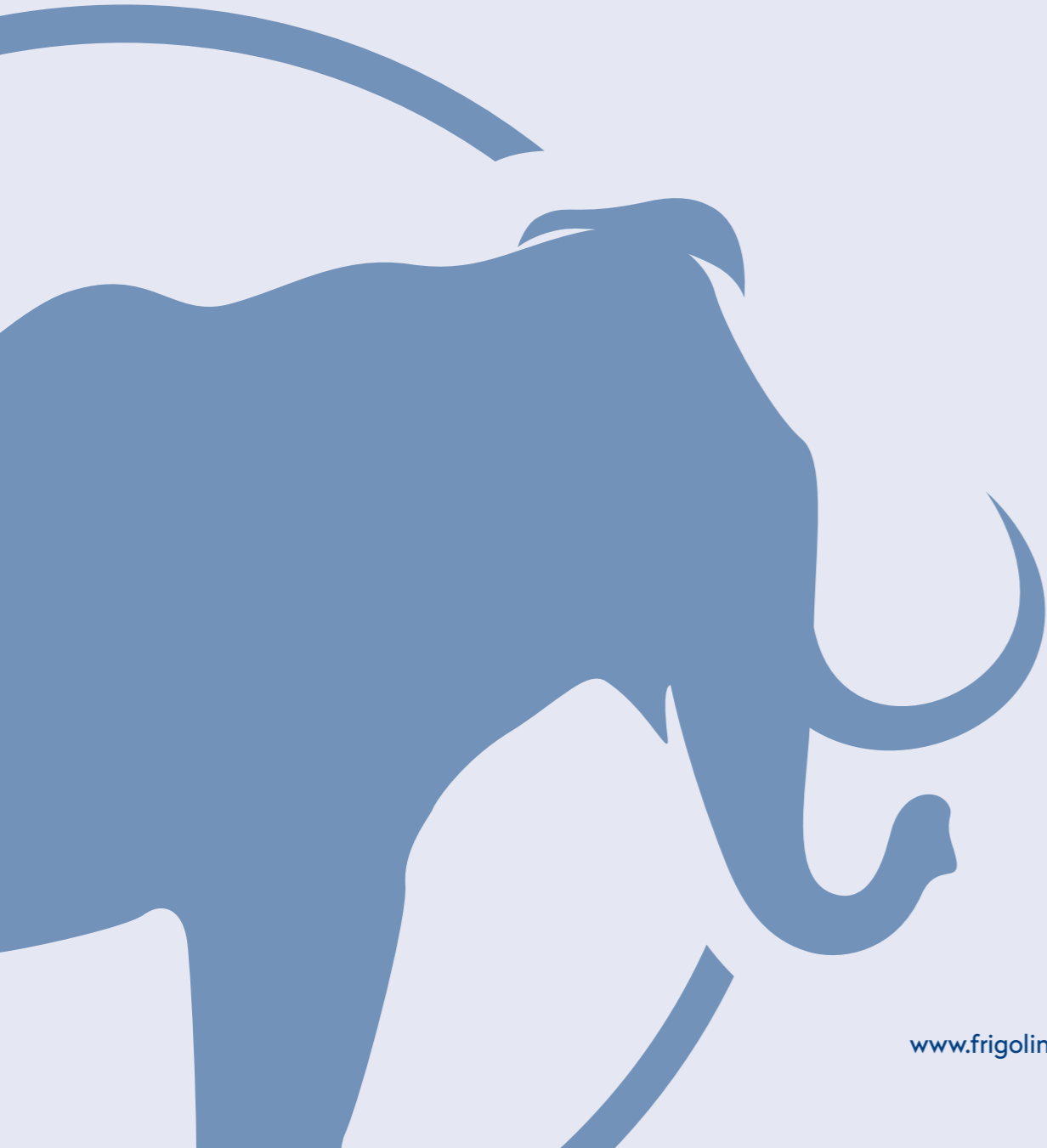
# FRIGOLINE GROUP

Industrial and Commercial Solutions

[www.frigolinegroup.com](http://www.frigolinegroup.com)



**FRIGOLINE**  
GROUP  
Coldrooms and Refrigeration



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# CONTENTS

## OUR SERVICES

- 4-5 Production and Procurement
- 6-7 Project Design
- 8-9 Turnkey Projects
- 10-11 After-Sale Services
- 12-13 Grant Consultancy
- 14-15 Installation and Commissioning

## ACTIVITY FIELDS

- 16-17 Food Industry
- 18-19 Agriculture
- 20-22 Animal Husbandry
- 23 Seafood
- 24 IQF Systems
- 25 Industrial Kitchens and Cold Room

## PRODUCTS

- 28-31 Refrigeration Units
- 32-33 Modular Cold Rooms
- 34-35 Evaporators
- 36-37 Condensers
- 38-39 Control Equipment and Automation Systems
- 40-43 Cold Room Panels
- 44-47 Cold Room Doors
- 48-49 Accessories and Mounting Profiles
  
- 50-51 References



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## WHO WE ARE?

Frigoline took its place in cooling business as a manufacturer of mechanical refrigeration units in 2012 and since then it has become one of the outstanding companies in its sector in a very short time with the help of its achievements in major projects. As a manufacturer company of refrigeration units we are ready to provide technical advises and solutions with our most professional team and wide product range. Besides its key role as a manufacturer of refrigeration units in Turkey, Frigoline specializes in the commitment of cold room projects, refrigerated warehouses and any kind of cold storages in any sizes.

Frigoline provides a wide range of solutions by developing R&D based products in the fields of temperature controlled storages.

## OUR VISION

Improving our company and forming its structure to an innovative leading model in refrigerated storage technologies by building a distribution network and maximizing after sale support in both domestic and international market.

## OUR MISSION

Providing high-value added, innovative, environment friendly and high energy efficient products and solutions to all customers both in local and international market by adapting ourself to constant developing and changing industry-specific requirements.

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## OUR SERVICES



### Production and Procurement

**Production and procurement process of all equipment and components related to cold storage is conducted by fully taking into consideration of required capacity, energy efficiency and high quality.**

We have been providing service with wide product range such as refrigeration machinery units and equipment, cold storage panels, insulation doors, mounting accessories, modular cold rooms, remote control systems, humidification systems, ventilation systems, cold storage lighting systems,





## Project Design

**Our first aim in project design is to understand clients' requirements and to provide aesthetic solutions that can make cost effective difference.**

Getting the design of a project right is critical to gaining a successful planning consent and avoiding unnecessary delay and costs.

Frigoline can support you through all stages of your project from initial design concept, through the planning process and concluding with the technical input of the Cold Storage requirements. At the core of our work stages are your budget and project aspirations. Making sure both elements align is vital, we achieve this by cost modeling your project at each stage of work.



## Turnkey Solutions

Frigoline provides turnkey solutions by designing the project, production and procurement, installation and the commissioning process in a maximum efficient way both in the domestic and international market.



## After-Sale Support



### Experienced Team

As a manufacturer company of mechanical refrigeration units we are ready to provide technical advises and solutions with our most professional team.



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### After-Sale Support

One of the reasons of Frigoline's success is that the technical service support aftermath of a sale. Frigoline aims at a long time relationship with all our customers throughout the life cycle of the product selected. This includes the provision of high-quality spare parts, warranties for replacement in case of damage or defect product, scheduled maintenance, technical support by phone etc. always in a manner by focusing on customers' priorities.



### Quality Control

Frigoline Ltd. uses the ISO 9001 standard in all business processes within R&D, sales, marketing, manufacturing and with continuous monitoring and optimization of business processes and manufacturing methods.



## Grant Consultancy

Frigoline brings institutional solutions to your projects in the scope of **Development Agencies, Agricultural Grants, European Fundings&Grants** standards.



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## Installation and Commissioning

Installation and commissioning is an important process of putting the machinery units into service in mechanical refrigeration. In our services and projects, this process is carried out carefully using the suitable procedure in order to obtain the machinery unit's durability and reliability for its entire life cycle. Different kind of tests are conducted on the entire machinery units and the system is delivered to the user without any problem.

## ACTIVITY FIELD



Food

### Food Distribution Centers



Temperature sensitive products need to be treated well as they are preserved or move through the supply chain this is especially important for the food distribution centers and food&beverage warehouses. If food quality is compromised by exposure to inappropriate conditions during storage or transport then the food wholesalers or consumers may suffer unpleasant consequences.



## Agriculture

### Fruit & Vegetable Storages

Post-harvest fruits and vegetables are at the highest maturity or as near as possible. Once harvested, fruits and vegetables must be preserved under suitable conditions, the most important of which are temperature and humidity. Each fruit or vegetable has its own ideal set of conditions at which it will store most successfully for the maximum length of time.

Products should be received at their proper long-term storage temperature and then stored at that temperature. The relative humidity of the storage should be 85 to 95%, however, for vegetables stored at low temperatures, it should be 90 to 98%. The lowest temperature range of 0 to 2 °C should be used for the majority of the green, non-fruit vegetables and temperate fruits and melons.



### Mushroom Growing Rooms

Commercial mushroom production requires high levels of management input and skill. Each species of mushrooms require specialized treatment to produce consistent yields of high-quality, marketable mushrooms. Controlled environment rooms (temperature and humidity) are required for the efficient production of high-quality mushrooms. Computer monitoring equipment to maintain the temperature and humidity at the required levels during the production cycle is expensive but streamlines production considerably.



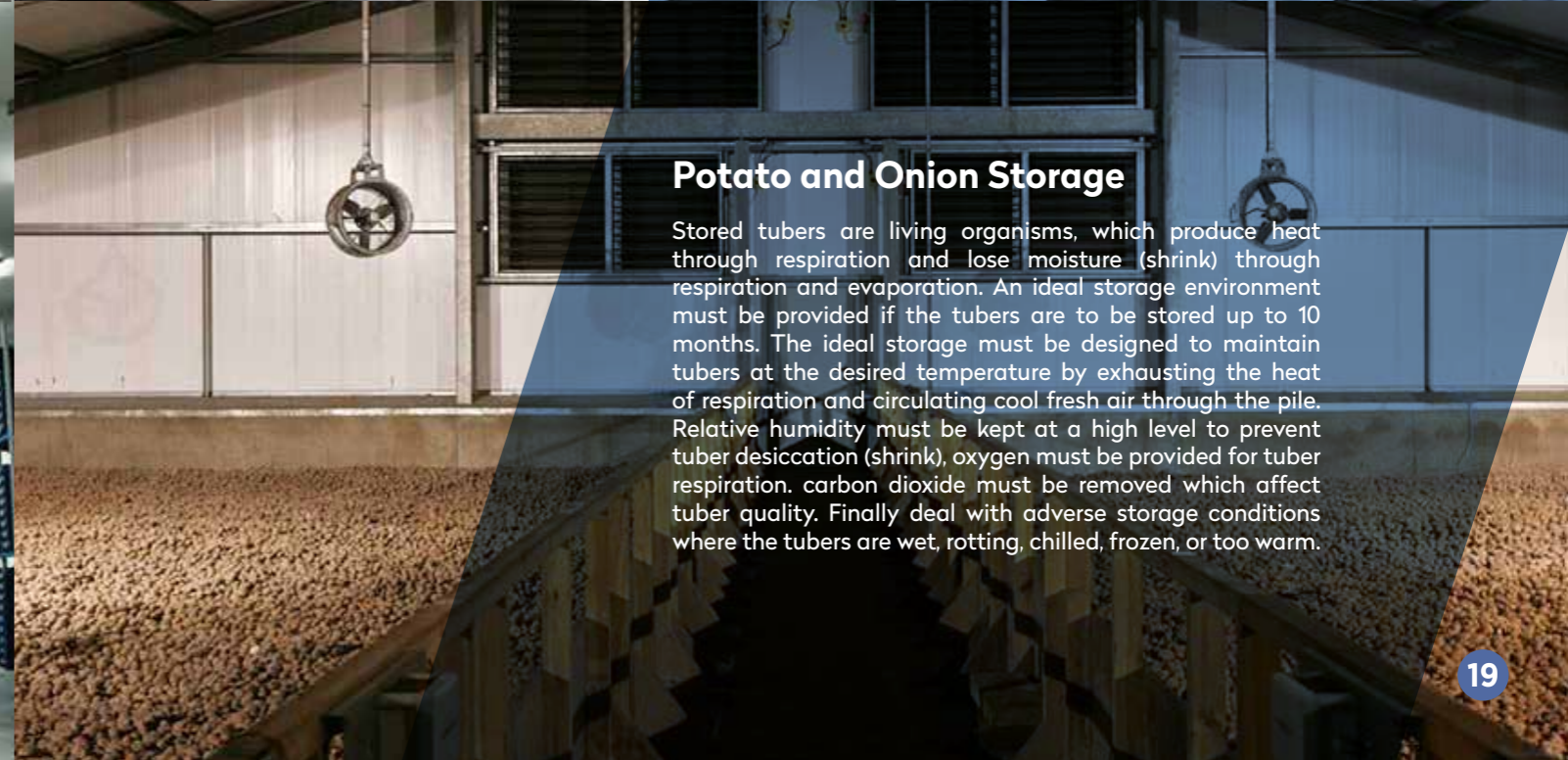
### Controlled Environment Ripening Rooms

Most distribution facilities have special ripening rooms or areas reserved for fruit ripening. Ripening rooms are used extensively for bananas and may also be used to ripen avocados, kiwifruit, mangoes, tomatoes, nectarines, peaches, plums. Pressurized or forced-air ripening rooms allow better control of ripening compared with older methods of space-stacking boxes in a warm room. The new designs force temperature-controlled air through the boxes to maintain a fairly uniform product temperature.



### Potato and Onion Storage

Stored tubers are living organisms, which produce heat through respiration and lose moisture (shrink) through respiration and evaporation. An ideal storage environment must be provided if the tubers are to be stored up to 10 months. The ideal storage must be designed to maintain tubers at the desired temperature by exhausting the heat of respiration and circulating cool fresh air through the pile. Relative humidity must be kept at a high level to prevent tuber desiccation (shrink), oxygen must be provided for tuber respiration. carbon dioxide must be removed which affect tuber quality. Finally deal with adverse storage conditions where the tubers are wet, rotting, chilled, frozen, or too warm.





### Meat Processing and Storage Plants

Temperature is a key aspect to consider in the meat processing industry. After slaughtering and cutting up the animal, the next step is to cool the meat until it is processed further. Depending on the circumstances, the meat is transported to the next processing station in either cooled or frozen form. There, the processes of mincing, cutting, smoking, simmering, and maturing (depending on whether dry sausage, boiled sausage, or cooked sausage is being produced) play differing roles.

The pH value of meat is considered to be so important because it has a major effect on the meat's quality factors. The pH value allows conclusions to be drawn on the color, softness, taste, water binding capacity, and shelf life. This is because, once the animal has been slaughtered, biochemical processes start to break down the meat which will influence the pH value. Therefore adequate refrigeration is the most important means of controlling the pH value.

### Dairy Processing and Storage Plants

Storage temperature can determine a deleterious result in dairy products. These conditions enable the growth of distinct spoilage and pathogenic microorganisms that are able to jeopardize the quality and safety of such products. Therefore cold storage of milk and dairy products, since the beginning of the production chain is highly important due to distinct characteristics of it.

Frigoline is able to design, engineer and supply complete plants, processing lines and equipment for treating raw milk and also for manufacturing, filling and packaging milk and milk-based products – from butter, ice cream, yogurt and cheese, and its derivatives.

## Poultry Processing and Storage Plants

Poultry provides an excellent medium for the growth of microorganisms. Prevention of microbial contamination involves careful regulation and monitoring of the slaughtering and processing plants. Proper handling and most importantly adequate chill or freezer storage of processed poultry products must take into consideration in each stage.

## Seafood Processing and Storage Plants

Seafood represents the most important source of protein. However, they are more perishable than many other food items. Therefore, proper handling, storage, and preparation are necessary to maintain quality and to ensure the safety of the sea products. Maintenance of the cold chain and careful handling are a fundamental part of minimizing seafood spoilage. From the quality and regulatory perspective, fresh seafood means that has been stored at 0°C and for frozen seafood, it means -18°C or colder (from the sea to the consumer). Best practices on seafood handling and the minimization of temperature fluctuations are paramount for seafood distributed under refrigeration (i.e. chilled and/or frozen) to maintain its quality and maximize its shelf-life.

## Shellfish Processing and Storage Plants



## **IQF Systems**

IQF method of freezing is special because of its ability to individually freeze all products and keep them separate from each other. The process of IQF relies on freezing the product extremely quickly in -40 ° C. Food that is frozen through slower means of freezing tend to be dry and damaged when they are defrosted. The formation of larger ice crystals damage the cell walls and reduce the quality of the food. IQF freezing, however, does not allow the process of bigger ice crystal formation to take place.



**Tunnel Freezer**



**Spiral Freezer**



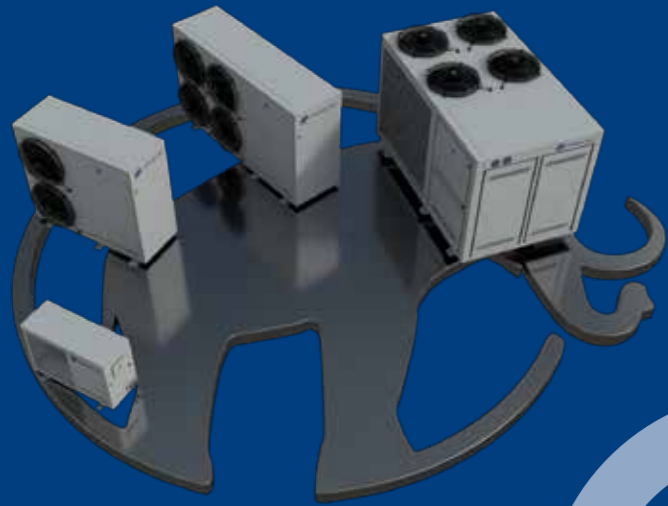
**Frozen Product Processing Plant**



## **FRIGOLINE GROUP** Coldrooms and Refrigeration



## **Industrial Kitchen and Cold Room**



✓  
INNOVATIVE  
TECHNOLOGY

✓  
HIGH QUALITY  
PRODUCTS

✓  
EASY  
ASSEMBLING

✓  
ENVIRONMENT  
FRIENDLY  
PRODUCTS



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## PRODUCTS



Central Refrigeration System



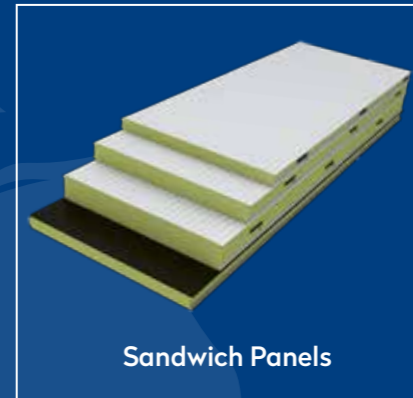
Refrigeration Units



Evaporator



Monoblock Refrigeration Units



Sandwich Panels



Insulation Doors



Modular Chiller and  
Freezer Room



Control Units



Accessories



## Industrial and Split Refrigeration Units



Frigoline is a manufacturer company of condensing units with a single compressor or with its common name split units. We design the most suitable types of machinery for your commercial and industrial refrigeration applications such as walk-in chillers or freezers, cold rooms, freezer rooms, supermarket freezers, showcases and coolers ice machines, refrigerated warehouses anything related to mechanical refrigeration.

The unique structure of our machines with silent fans and vibration absorbers feature a low sound level and reduces the vibration. Units are produced in a wide range of options depending on their application and cooling capacity. It can be equipped with hermetic, semi-hermetic or scroll compressor.



### Technical Specifications :

- ✓ Electrostatic powder coated frame
- ✓ Phase protection relay
- ✓ Contactor and thermic circuit breaker
- ✓ Thermostatic digital control board
- ✓ Crankcase heater
- ✓ High pressure switch
- ✓ Low pressure switch
- ✓ Fan Switch
- ✓ Fan speed controller (Optional)
- ✓ Liquid collector
- ✓ Dryer filter Refrigerant moisture indicator
- ✓ Circuit breaker relays
- ✓ Service valve on the liquid line
- ✓ Integrated electric control panel
- ✓ Liquid flow control solenoid valve



### Advantages :

- ✓ Compatibility with quality standards
- ✓ High-quality components
- ✓ Durable design against ambient factors
- ✓ Easy installation
- ✓ Wall or floor mountable
- ✓ Wide range of selection
- ✓ Compact unit
- ✓ Special models depending on the application
- ✓ Low sound level
- ✓ Ease of maintenance



## Central Refrigeration Units with Scroll / Semi-Hermetic / Scroll Compressors



Multiple Compressor Pack or central refrigeration units are the best solutions for industrial facilities and supermarkets which requires high refrigeration capacity. In its design condenser and compressor pack is separated from each other as two independent units. The pack can be equipped with a wide range of options, from 2 up to 5 hermetic or semi-hermetic compressors and from 2 to 8 with scroll compressors, depending on required refrigeration capacity. Multiple compressor packs are designed and manufactured on a durable frame with a vibration absorber. All components of the unit provide a harmony in order to perform a parallel operation. Energy efficiency is kept in a higher level by using hermetic, semi-hermetic and scroll or screw type compressors.



### Technical Specifications :

- ✓ Electrostatic powder coated steel chassis
- ✓ Phase protection relay
- ✓ Contactor and thermic circuit breaker
- ✓ Thermostatic digital control board
- ✓ Crankcase heater
- ✓ On/Of Compact Circuit Breaker
- ✓ Filter Drier Shell
- ✓ Liquid Collector
- ✓ Service valve on the liquid line
- ✓ Low- High Pressurestat
- ✓ Service valve on suction and pressure line
- ✓ Fan speed controller (Optional)
- ✓ Semi - Hermetic Scroll or Screw Compressor Options
- ✓ Air / Water Cooling Condenser
- ✓ Power control panel and complete automatic control equipment
- ✓ Compressor system with gradually working principle



### Advantages :

- ✓ Compatibility with quality standards
- ✓ High efficiency
- ✓ Durable design against ambient factors
- ✓ Minimum sound level
- ✓ Reliable high quality components
- ✓ Low initial investment cost
- ✓ Easy installation
- ✓ Ease of maintenance
- ✓ Product Variety
- ✓ Special models and design options



## Open Chassis Semi-Hermetic Refrigeration Units



Open chassis refrigeration units are condensing units which are suitable for industrial and commercial applications such as showcase type supermarket chillers and freezers, cold rooms, ice making machines, ice cream machines etc.

It's special structure allows it to work silently. Silent fans are used in order to have a minimum sound level. The compressor and the condenser block are mounted on a steel frame.

Industrial type refrigeration units are manufactured in wide range of options and can be specially produced depending on the application. Units are suitable for industrial plants with middle and high level refrigeration load requirements. The compact design provides an ease of installation and maintenance.



### Technical Specifications :

- ✓ Electrostatic powder coated chassis
- ✓ Thermomagnetic Circuit Breaker
- ✓ Contactor
- ✓ Crankcase heater
- ✓ Electronic Fan Speed Controller
- ✓ Liquid Collector
- ✓ Economizer
- ✓ Filter Drier
- ✓ Sight Glass with moisture indicator
- ✓ Service valve on the liquid line
- ✓ High/Low pressurestat
- ✓ Solenoid valve for the liquid flow
- ✓ Integrated control panel



### Advantages :

- ✓ Compatibility with quality standards
- ✓ High-quality equipment
- ✓ Easy installation
- ✓ Wall or floor mountable
- ✓ Wide range of selection
- ✓ Special models depending on the application
- ✓ Low sound level
- ✓ Ease of maintenance



## Monoblock Refrigeration Units



Monoblock refrigeration units integrate evaporator, condenser, compressor, electrical control units into one body. It's easy to install and compact in structure. Complete "compact" monoblock unit is designed for use in small cold rooms from 4 to 54 m<sup>3</sup>. Mounted across the cold room panel; extremely compact unit cooler for optimum use of space in the cold room.



### Technical Specifications :

- ✓ Service valve on the liquid line
- ✓ Power control panel and equipment
- ✓ Pressurestat (Low/High)
- ✓ Drier Filter



### Advantages :

- ✓ Energy saving
- ✓ Optimum use of room space
- ✓ Wall mounted monoblock condensing unit.
- ✓ Already charged with R404A refrigerant
- ✓ Total accessibility.
- ✓ Fast installation



## Modular Chiller and Freezer Rooms



Modular chillers or freezers dimensionally stable does not degrade over time, composed of materials designed to absorb odors, disallow the lurk of pests and development of fungi and molds. The modular structure allows dismantling, extension and/or relocation and reduction in other places without any deterioration of the individual components. From 80 mm to 120 mm different panel thicknesses with stainless steel options can be implemented to suit your applications.

### Assembling :

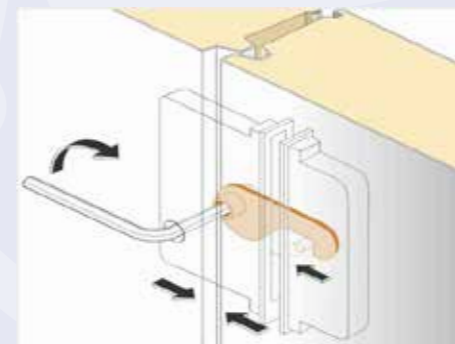
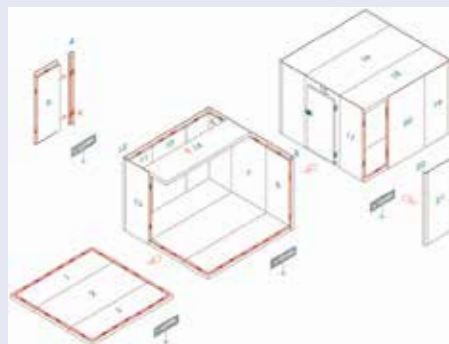
Modular cold rooms are easy to assemble and disassemble. Therefore the modular design of the cold rooms ensures that the equipment can also be easily relocated if you need to move premises. Its flexibility allows for expansion, in case of an increase in production or changes in legislation

### Panel Joints :

Male and female slip joints of the sandwich panels give an advantage of easy installation and practical solutions without needing any other fastening equipment. Beside perfectly alignment of panels prevents thermal bridge and performs maximum insulation

### Locking Details :

Cam-lock system provides an easy fitting with an only hex Allen wrench and avoids thermal bridge with perfect alignment.



1



2



3



4



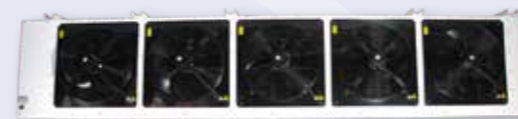
5



6



## Evaporators



Evaporators are able to respond low, medium and high refrigeration capacities in all ranges. The heat exchanger coils inside have high thermal efficiency and designed compactly. The design can vary for different kind of projects accordingly.

Outside case is made of electrostatic powder coated galvanize iron against rusting and also features a decorative appearance beside its durability. Depending on the application the outside case can be stainless steel or the inside battery can be equipped with epoxy coil on special requests. The side covers and drip tray are removable for assembling and maintenance.



### Technical Specifications :

- ✓ Different pipe wall thickness and 4-6-8-10 mm fin space
- ✓ Monophase 220V 1~ 50Hz and 3 phase 400V 3~ 50 Hz fan options
- ✓ Drainage Pan
- ✓ Stainless steel casing (optional)
- ✓ Epoxy Cover (optional)
- ✓ Fan cable heater Drainage line cable heater
- ✓ Defrosting on coil block and drip tray (Electrical Defrost)



### Coil Block :

- ✓ Fin space are designed 4-6-8-10 mm.
- ✓ Copper inlet-outlet collector
- ✓ Maximum allowable pressure 21 Bar.
- ✓ Staggered tube design
- ✓ Compliant with R404a, R134a, R407F on request R448a, R449a, R450a refrigerants.
- ✓ Refrigerant distributor



### Casing :

- ✓ Electrostatic powder coated galvanized steel RAL 9016
- ✓ Stainless steel casing depending on the application
- ✓ Demountable side covers
- ✓ Standard hinged drip tray for all designs
- ✓ Auxiliary drip tray



### Fans :

- ✓ Different fan diameters and quantity depending on the application
- ✓ Standard or low sound level maintenance-free fans
- ✓ AC or EC fan motor options on request
- ✓ Optional fan accessories (Axicool fans, FlowGrid sound lowers etc.)
- ✓ Operating range -40°C / +50°C



### Defrost :

- ✓ B1 Defrost system mounted on the coil block for 0°C / +5°C room temperatures.
- ✓ B2 Defrost system mounted on the coil block or drip tray for -34°C / 0°C room temperatures.
- ✓ Optional drainage line heater, fan diffuser heater, hot gas defrost systems, water defrost systems



Condensers are one of the most essential components in mechanical refrigeration in both industrial and commercial applications.

Condenser block with 3/8" and 1/2" diameter copper pipes can be designed horizontally and vertically depending on the application by providing the most efficient heat exchanging and keeping the efficiency in maximum level. Special kind of condenser model is available for specific projects.



## Coil Block :

- ✓ V shape, horizontal and vertical structure options
- ✓ Fin spacing is designed as 2,1 – 2,5 mm
- ✓ Copper inlet and outlet collector
- ✓ Maximum allowable operation pressure Ps=21 bar
- ✓ Staggered tube structure
- ✓ Compliant with R404a, R134a, R407F upon request
- ✓ R448a, R449a, R450a refrigerants.
- ✓ Shipped pressure inside



## Casing :

- ✓ Electrostatic prepainted galvanize iron RAL 9016
- ✓ Galvanize iron or aluminum coil block plate
- ✓ Fans are separated from each other with sheet plates.



## Fans :

- ✓ Ø300 – Ø350 – Ø400 – Ø450 – Ø500 – Ø630 – Ø800 mm/ 230V ~ 50Hz single phase 800 -1250 rpm and 400 V ~ 50 Hz three phase 650, 900 rpm fans
- ✓ Standard or low sound level maintenance free fan options
- ✓ AC and EC fan motor options upon request
- ✓ Protection class IP54, fan construction insulation material class F
- ✓ Optional fan accessories (FlowGrid sound lower etc. )



## Options :

- ✓ Optional tube wall thickness 2.1 mm – 2.5 mm fin spacing
- ✓ Please get in contact with us for the products not classified here
- ✓ Epoxy coated fins (Optional)

# INTERNET/INTRANET CONNECTION



Industrial and commercial refrigeration requires control of many different parameters to ensure that commodities are stored correctly. Temperature, humidity, pressure are needed to be under control with reliable devices that are also easy to manage. Sustainability and efficiency are important key elements in refrigeration. Therefore for every cold storage application, there need to be control systems for local control or remote monitoring accordingly.

Control system technology for refrigerated warehouses, food processing, distribution centers or walk-in chillers and freezers etc. plays an extremely important role, both for the technicians and the users.



## Control Units and Automation Systems



### Alarm

Even the application is a cold room cabinet or refrigerated warehouse, control systems must ensure complete solutions that offer strict control. It is necessary to take action at on-time in order to intervene without delay.



### Multiple Integration

The user interface is compatible with all recent web browsers. There is no need for an additional software. Beside it is fully integrated with all touchscreen technologies.



### Energy Saving

Control devices increase the efficiency and reduce energy costs and optimize the functionality of the application with the help of intelligent algorithms.



### Multiple Connection

Cold storage control equipment offers maximum connectivity accesses with USB, Ethernet, RS485, and routers connection ports.



### Food Quality

The non-stopping data record, HACCP (Hazard Analysis and Critical Control Points) reports and alarm management allow on-time intervention and guarantee the quality of the commodities and make them compatible with the standards.

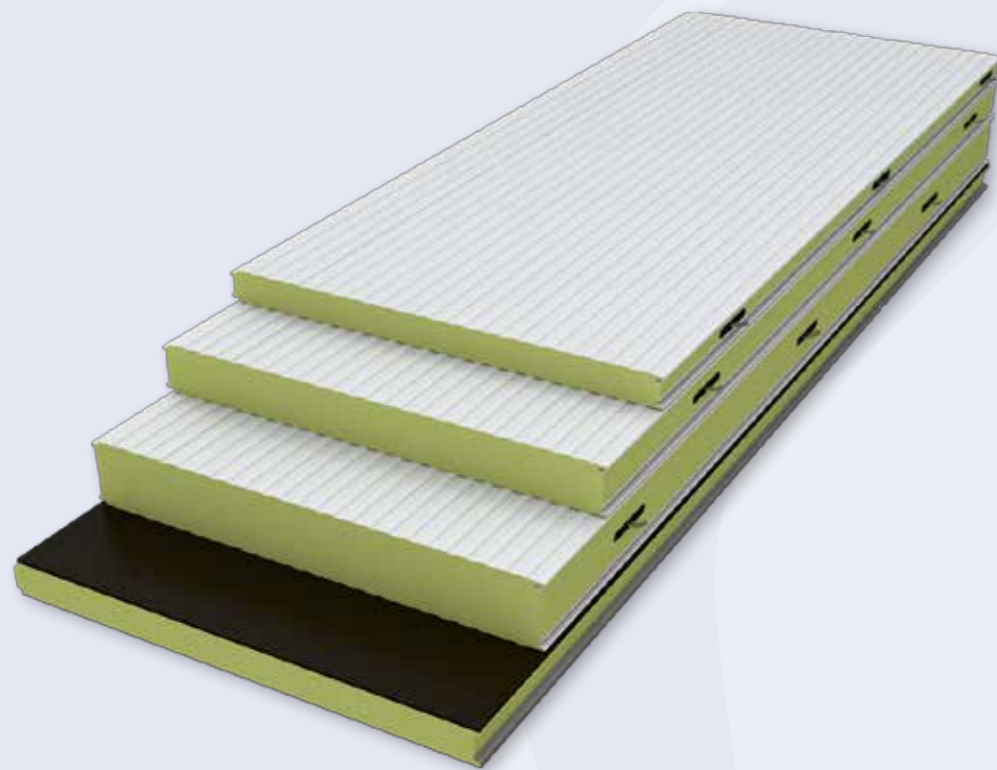


### Environment-Friendly

Effectiveness and efficiency offer environment-friendly solutions by optimizing the energy consuming reducing pollution and gas emissions at the same time.



## Cold Storage Sandwich Panels

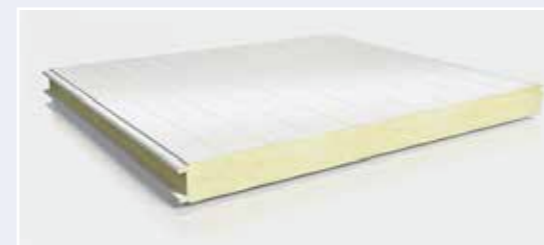
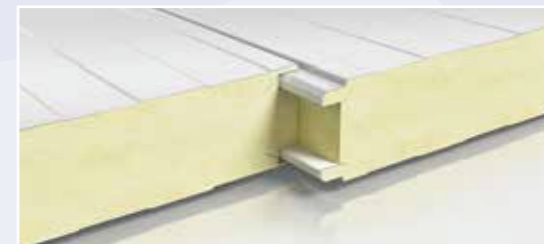


The polyurethane filled sandwich panel is the best thermal insulation solution for refrigerated storages and cold rooms. Core material polyurethane does not contain harmful components in its chemical structure. It provides an excellent thermal insulation with its low coefficient thermal conductivity. Lower thermal conductivity contributes to less energy consumption and thus it is widely applied in the cold storage industry.

Insulation panels have a monolithic sandwich structure formed by injecting a high density of rigid polyurethane foam between two cladding sheet. It can be applied in temperature controlled environments range from -40 °C to +15 °C in suitable thicknesses.



## Flat and Ribbed Surface Sandwich Panels



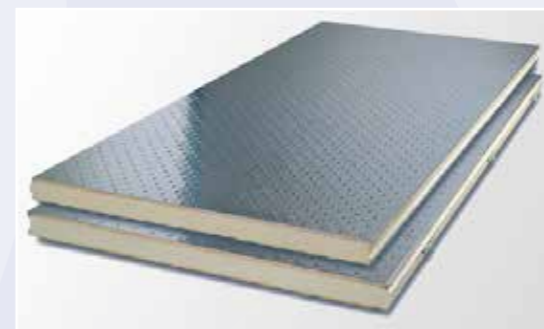
Flat surface sandwich panels are produced without giving any form to panel surface which makes it an ideal solution for hygienic applications. The locking system is available for sandwich panels from 80 mm thickness to 200 mm thickness.

Ribbed surface sandwich panels are designed to increase durability by giving a corrugated form to the galvanized sheet. The locking system is available for sandwich panels from 80 mm thickness to 200 mm thickness.

- ✓ Standard Width 1110 mm
- ✓ Thickness 50 to 200 mm
- ✓ Maximum Length 13,5 m
- ✓ Sheet Thickness 0,5 mm
- ✓ Thermal Conductivity  $\leq 0,023 \text{ W/m.K}$
- ✓ Sound Insulation 21,5 dB
- ✓ Core Material Density 40 – 42 kg/m<sup>3</sup>



## Plywood Floor Panel

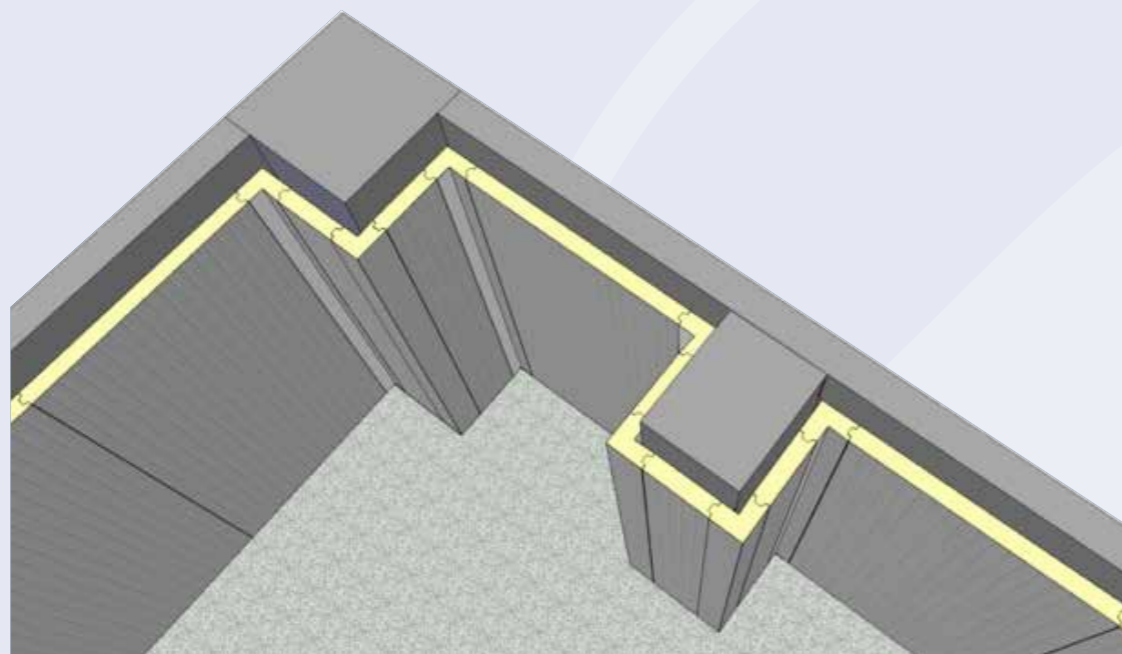


Floor panels are widely applied in the walk-in chiller and walk-in freezers. 10 mm thickness plywood cladding on the panel provides 2000 kg / m<sup>2</sup> distributed load capacity. Anti-slippery stainless steel or PVC cladding on plywood is also available depending on the application.

- ✓ Standard Width 1150 mm
- ✓ Maximum Panel Length 8 m
- ✓ Core Material Polyurethane
- ✓ Insulation Thickness 80, 100, 120, 150, 180, 200
- ✓ Core Material Density 40–42 kg/m<sup>3</sup> (Standard)
- ✓ Fire Resistance Class B s2 d0 (TS EN 13501-1)
- ✓ Cladding Material Plywood or PVC, Stainless Steel Cladding on Plywood



## Corner Panels

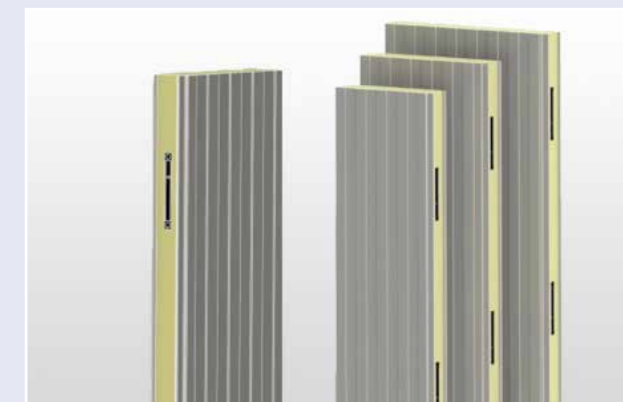


- ✓ Available Shapes L Type, Z Type, T Type, and X Type
- ✓ Thickness 80 to 200 mm
- ✓ Maximum Length 3,5 m
- ✓ Sheet Thickness 0,5 mm
- ✓ Thermal Conductivity  $\leq 0,023 \text{ W/m.K}$
- ✓ Sound Insulation 21,5 dB
- ✓ Core Material Density 40 – 42 kg/m<sup>3</sup>

Corner panels are an ideal solution for connecting panel ends in modular assemblings. It provides an ease of installation without cutting panels in order to adjust corner fittings and prevents thermal bridge between ambient temperature and inside temperature with perfect alignment. The shape varies depending on the application as L, T, Z, and X.



## Fitting Panels



- ✓ Width 300 – 400 – 500 mm
- ✓ Thickness 50 to 200 mm
- ✓ Maximum Length 13,5 m
- ✓ Sheet Thickness 0,5 mm
- ✓ Thermal Conductivity  $\leq 0,023 \text{ W/m.K}$
- ✓ Sound Insulation 21,5 dB
- ✓ Core Material Density 40 – 42 kg/m<sup>3</sup>

Pre-adjusted size fitting panels with 300, 400 and 500 mm width provide a cost-saving implementation by avoiding any waste of panels on the application. Lockable adjusted size panels perfect insulation by preventing thermal bridge.



## Cold Storage Insulation Doors



- ✓ Smooth composite surface for easy wash-down.
- ✓ Aluminum, PVC and stainless steel frame is available depending on the application.
- ✓ Door frame can be mounted on a panel or wall in any thicknesses.
- ✓ The internal supportive sheet is placed to increase durability for all the materials which are mounted on the door frame.
- ✓ The thermal bridge is prevented in aluminum or stainless steel frame applications with the help of forming a special design.
- ✓ Specific requests such as thermostat, pressure relief valve, indicator etc. implementation on the door body are possible to be conducted by cooperating with the project.
- ✓ 70 mm, 90 mm, 120 mm for cool conditioning and 90 mm, 120 mm, 150 mm thickness options are available for freezer storages to ensure the sufficient insulation.
- ✓ Door blade is filled polyurethane with the density of 40-43 kg/m<sup>3</sup>.
- ✓ Outside surface of the door blades is covered with electrostatic powder coated galvanized sheet which is cladded by PVC layer (with optional RAL pallets and pattern designs) or 0,5 mm to 1,2 mm thickness of Aisi 304 stainless steel sheet.
- ✓ The special primer layer is implemented before polyurethane injection to the inner surface of the galvanized sheet cladding the door blade in order to avoid sticking of polyurethane foam to the skin of galvanized sheet.

- ✓ Reinforcement sheets, with 2-3 mm thickness, are placed on to the inner surface, to ensure durability, of the door blades where the other accessories are mounted on.
- ✓ Viewing window, small passage doors etc can be placed on the door wing in required sizes upon request.
- ✓ Hanger materials are made of reinforced hygienic composite plastic or stainless steel.
- ✓ Single line gasket in four sides of the door is placed in cold conditioning applications. But in freezer conditionings, there is an additional heater inside the gasket.
- ✓ In the doors with 90 mm thickness, single line gasket and heater inside it is applied for four sides, but for 120 mm and 150 mm thicknesses double line gasket and inside resistance is applied.
- ✓ Depending on the application diathermic oiled threshold heater is recommended as an option. The oil, inside a 50\*50 mm profile, is warmed up with the resistance heater.
- ✓ Automatic locking system and safety lock, which allows the door to be opened from inside are available as an option.
- ✓ Polyethylene or stainless steel kick plate can be adapted inside and outside surfaces as an impact absorber.



## Hinged Doors

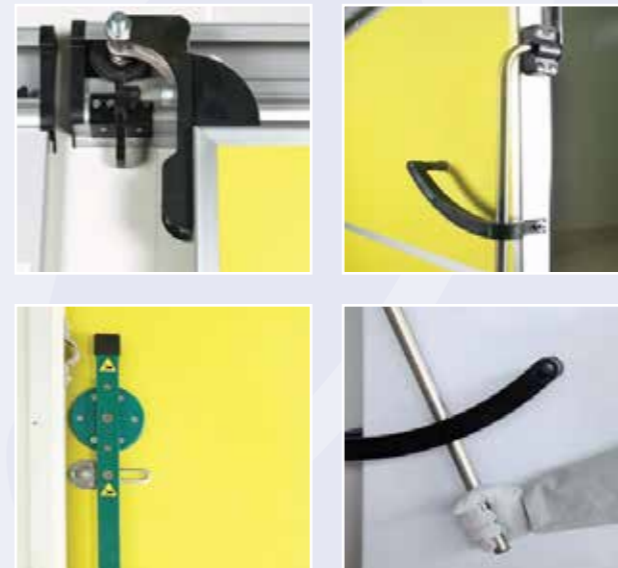


Hinged doors can be operated to right or left direction on an axis depending on the location of the hinges mounted on door body. Doors are manufactured as a standard outside handle lock with key and inside with an emergency push button. Door body is produced as a monoblock component and surrounded by the anodized aluminum frame which is connected to the supporting internal cladding sheets. Rigid polyurethane foam is injected inside with the density of 40-43 kg/m<sup>3</sup> to ensure a monolithic solidity by taking into consideration of preventing thermal bridge and ensuring lightweight.

All the components are manufactured to provide a hygienic feature responding to the highest quality standards. None of the combined materials in the door structure contain organic components thus it is deformation proof in all chemical disinfection cleaning applications.



## Sliding Doors

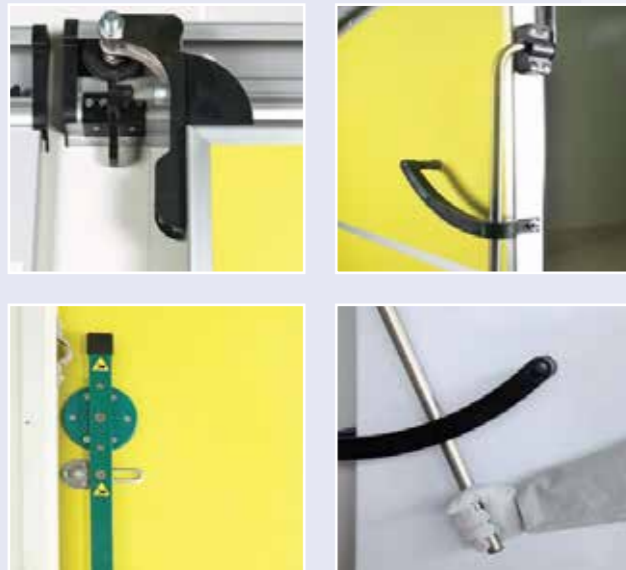


Sliding doors for chiller and freezer rooms are operated by a sliding blade towards right or left directions on rollers. It is widely used in space restricted areas and also when door opening is only available to corridors and loading platforms. Horizontal (single and double bladed) and a vertical design is optional upon request.

Door body is produced as a monoblock component and surrounded by the anodized aluminum frame which is connected to the supporting internal cladding sheets. Rigid polyurethane foam is injected inside with the density of 40-43 kg/m<sup>3</sup> to ensure a monolithic solidity by taking into consideration of preventing thermal bridge and ensuring lightweight.

All the components are manufactured to provide a hygienic feature responding to the highest quality standards. None of the combined materials in the door structure contain organic components thus it is deformation proof in all chemical disinfection cleaning applications.

## Monorail Doors



Hygienic rail passage doors or in other name monorail doors are the most suitable application for processing plants, especially in red meat processing, where processing and storing compartments connected to each other by monorail lines. The upper side of the shutter is fitted to allow the passage of the rail. Door body is produced as a monoblock component and surrounded by the anodized aluminum frame which is connected to the supporting internal cladding sheets. Rigid polyurethane foam is injected inside with the density of 40-43 kg/m<sup>3</sup> to ensure a monolithic solidity by taking into consideration of preventing thermal bridge and ensuring lightweight.

## Service Doors



Flip flap swing doors are widely used in industries with heavy personnel traffic and hygiene oriented areas. It separates processing rooms, corridors and adjacent areas from each other at positive temperatures. Two-way hinges mounted on the door body provide flexibility by opening at both sides and allow you to pass through quickly. It provides high resistance to fats, solvents, and acids and also to impacts with bumper reinforcement. Door body is produced as a monoblock component and surrounded by the anodized aluminum frame which is connected to the supporting internal cladding sheets. Rigid polyurethane foam is injected inside with the density of 40-43 kg/m<sup>3</sup> to ensure a monolithic solidity by taking into consideration of preventing thermal bridge and ensuring lightweight.

All the components are manufactured to provide a hygienic feature responding to the highest quality standards. None of the combined materials in the door structure contain organic components hence it is deformation proof in all chemical disinfection cleaning applications.

## Office Doors



Semi-insulating hinged service doors are passage doors between processing /storing areas and other departments. It is ideal for use in warehouses, technical areas, offices, schools, and toilets etc. The blade is produced with a core material of 40 mm injected PU-insulation and finished on both sides with lacquered steel plate.

All the components are manufactured to provide a hygienic feature responding to the highest quality standards. None of the combined materials in the door structure contain organic components hence it is deformation proof in all chemical disinfection cleaning applications.



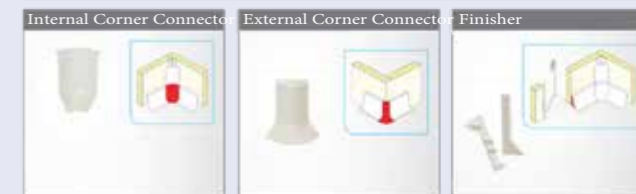
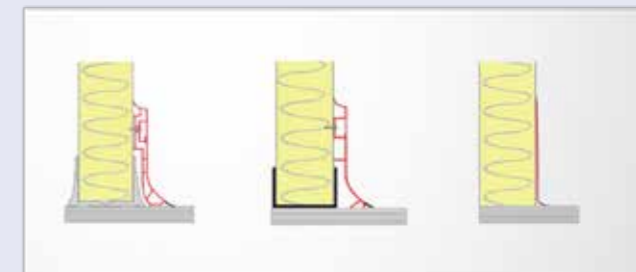
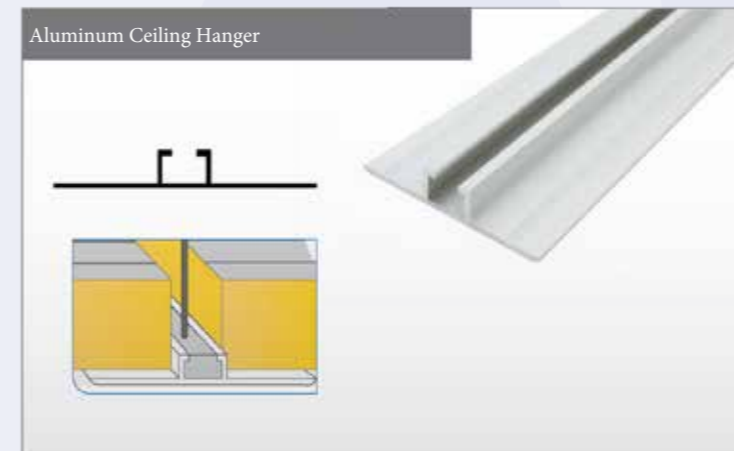
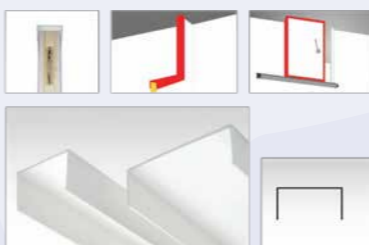
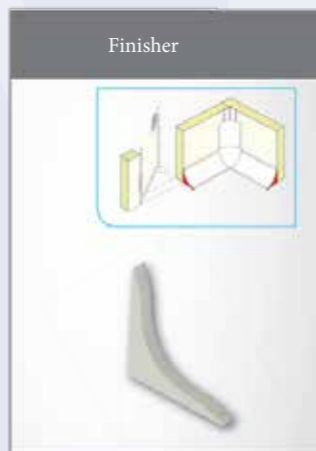
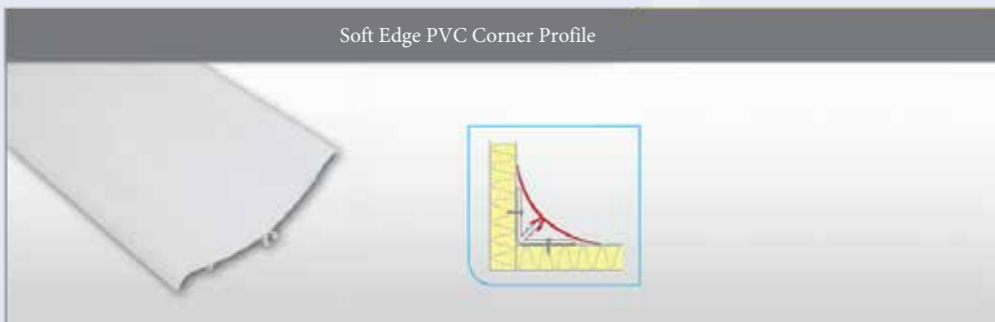
# Assembling Kits

## Hygienic Profiles

Hygienic PVC profiles perform perfect solution both in industrial and commercial cold storages where hygiene and quality standards are oriented. It is widely chosen, especially in the food processing industry, for ensuring to meet HACCP standards.

A hygienic cold store is provided in the floor wall and ceiling joints of cold room panels with the help of PVC profiles. All hygienic PVC profiles are compatible with lower temperature conditions which allow the product long-term durability.

Mounting profiles provide an assistance to adjust the balance between floor - wall, and ceiling - wall by featuring an aesthetic and hygienic appearance.



## Some of Our References;







**FRIGOLINE**  
GROUP  
Coldrooms and Refrigeration

## FRIGOLINE ENDÜSTRİYEL VE TİCARİ SOĞUTMA ÇÖZÜMLERİ

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