CT-TECHNOLOGIES

Engineering climate controlled facilities
# CEO letter

# Who we are

# Facts and figures

# Our company’s milestone

# Our services

# Turn key solutions

## Business areas
- Warehouses and distribution centres
- Production plants/Food processing plants
- Cold stores
- Automated storage and retrieval system AS/RS
- Commercial and residential application
- Cleanrooms

## Products
- Sandwich Panels
- Doors
- Docking system
- Floor insulation and heating systems
- Windows
- Steel structure
- Lighting fixtures
- Refrigeration systems
- Racking system
- Accessories

## Advantages of working with us
- Attractive financing

## Worldwide presence
Almost 30 years ago CT-TECHNOLOGIES was founded with the business idea to build, in emerging countries, facilities for food preservation that are energy saving and at the same time up to the highest standards in terms of hygienic production.

Since we started, we have built up collected expertise within food processing and cold stores industry and contributed to the knowledge sharing within this field; including training in the correct handling of food preservation, how to save energy and the importance of high-quality facilities.

We currently have offices in Europe, Asia, and Africa and we intend to expand our business further.

With our clients, we are growing organically and acquiring new shares of the market. We offer personal and professional services, we aim to develop a personal relationship with our clients that is based on trust and prioritize availability to be at your service.

We are proud that CT-TECHNOLOGIES’ value system and a principled approach to doing business follows the Ten Principles of the UN Global Compact. By incorporating the Global Compact principles into strategies, policies, and procedures, and establishing a culture of integrity, we are meeting fundamental responsibilities in the areas of human rights, labor, environment, and anti-corruption.

Carsten Thorsen
Having more than 30 years of international experience we possess a unique knowledge and are able to develop technical solution and supply materials for any facility in the food industry and other industries where strict hygiene and temperature control is required.

CT-TECHNOLOGIES employs specialists of high professional standing in the fields of engineering, management, and planning across the Globe. This provides the company an unmatched strength in meeting the needs of clients worldwide. With our highly professional and skilled in-house design and engineering team, we are able to implement the entire scope of works for turnkey projects, from initial design through supply, execution, commissioning and after sales support and service.

Due to our longstanding experience and extensive research, we provide unique solutions for each project and are able to select only the best European manufacturers with proven track records of reliability, taking both price and quality into consideration.

Our reference list includes climate controlled facilities, cold stores for food processing plants, shock freezing chambers, ripening rooms, cleanrooms, warehouses, distribution centers, AS/RS Automated Storage and retrieval system etc.

Because of our complex project implementation, knowledge of specific requirements of the food industry, independence in choice of material suppliers, flexibility in the development of optimal solutions for individual projects, CT-TECHNOLOGIES has established a reputation in the market of being highly professional, which is beneficial for our clients.

**Vision**

To build facilities, in emerging countries, for food preservation that are energy saving and at the same time up to the highest standards in terms of hygienic food production. Furthermore, contribute to the modernisation and knowledge sharing within this field; including training in correct food preservation, how to save energy and the importance of high quality facilities.

**Mission**

Through a team of highly skilled workforce and local presence, our mission is to engineer and deliver temperature controlled facilities for all kind of industries (in emerging countries) that require temperature controlled, humidity controlled and hygienic facilities.
FACTS AND FIGURES

Company growth

- Financially stable AA rating
- +60 employees
- Almost 90% returning clients
- 400 projects
- 30+ design engineers, project managers, installation and site managers
- 200 Collective management years of experience

Targeted industries
- meat and poultry
- fruits and vegetable
- pharmaceutical industry
- warehousing
- commercial buildings
- dairy industry
- fish industry

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- Meat and poultry
- Fruits and vegetables
- Warehousing
- Commercial buildings
- Dairy industry
- Fish industry
- Pharmaceutical industry

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- +60 employees
- 90% return of clients
- AA financial stability rating
- Design engineers, project managers, installation and site managers
- 200+ collective management years of experience
- Year 1989
- 4000+ projects for multinational companies (Nestle, Unilever, Coca-Cola)

- 90+ Top brand suppliers worldwide
- Temperature ranges we worked with: +15 to -60
- 4000+ Days spent at construction sites

Engaged in 100+ projects for multinational companies (Nestle, Unilever, Coca-Cola)

Our offices:
- Denmark
- Bosnia & Herzegovina
- Ghana
- Vietnam
- Philippines
- Indonesia

Temperature ranges we worked with: +15 to -60

4000+ Days spent at construction sites

Engaged in 100+ projects for multinational companies (Nestle, Unilever, Coca-Cola)
CT-TECHNOLOGIES is established in Denmark.

CT-TECHNOLOGIES commences activities in Bosnia and Herzegovina.

First project in South East Asia.

Office opened in Indonesia.

Office opened in Vietnam.

Office opened in the Philippines.

Refrigeration unit is included in the Scope of Supply.

70 projects in Europe and Eastern Europe, Middle East, Africa.

Office opened in the Philippines.

CT-TECHNOLOGIES has a new brand identity.

Achieved expert level knowledge in Automated Storage and Retrieval system (projects in Singapore, Indonesia and Malaysia).

Employee number raises to 45.

400+ projects completed worldwide.

60+ employees worldwide.

400+ projects completed worldwide.

OUR COMPANY’S MILESTONE
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OUR SERVICES
Initial ideas and requirements are discussed with the customer. Based on this CT-TECHNOLOGIES carries out a project proposal, including technical drawings and financial estimations.

At this stage CT-TECHNOLOGIES analyses further customer requests and make technical consulting on internal layout of structures and optimal material choice, which ensure thermo- and hydro insulation, and fulfillment of hygienic standards.

Based on the design, CT-TECHNOLOGIES supplies materials which ensure insulation. CT-TECHNOLOGIES internationally experienced logistics department is your guarantee that all materials needed are included in the delivery and shipped in the most economical way with all the required documents.

CT-TECHNOLOGIES skilled supervisors and installation teams can take care of installation of the supplied materials upon the customer request. Our installation workers or supervisors have broad experience in complex projects, such as freezers of deep frost, high-story cold stores, controlled atmosphere chambers, etc.

After sales support and spare parts supplies can be provided together with our network of local partners upon the customer request.
TURN KEY SOLUTIONS
We offer turnkey EPC (engineering, procurement and construction) and world-class project management services to deploy high-performing projects on the ground.

To ensure both quality and competitive price, we have a wide network and venture with suppliers of high-quality equipment, guaranteeing best production performances and lifetime of the plant.

With our highly professional and skilled in-house design and engineering team we can implement the entire scope of works for turnkey projects, through all phases, from front-end studies or conceptual designs up to the hand-over of completed plants.

**Benefits of turn key**

**One Company to Contact.**

CT-TECHNOLOGIES eliminates the hassle of communicating with multiple companies. Rather than contacting your equipment designer, following up with the manufacturer, and contacting the designer again, you only need to contact one company.

**One Company Invoicing.**

CT-TECHNOLOGIES eliminates the invoice mess, as all invoices come from the same company. Imagine how much easier your accounting process will be when you only receive a few invoices from the same company for your project.

**Design and Manufacturing and Installation**

When your equipment and facility layout design and manufacturing are handled by the same company, changes are easy. No more contacting your designer, following up with the manufacturer, re-contacting your designer with information from the manufacturer. We provide design, manufacturing and installation in one — making the communication between our in-house designer, manufacturer, and installer all in one. Any change to the design of your equipment is immediately communicated and factored into the manufacturing and installation process, without extra phone calls.

**Discounted Prices.**

We save you time and money. We are able to provide discounts on our services and make the overall cost of your project cheaper than it is to get discounts from multiple different companies. Due to copious quantities we buy, we provide large discounts and often cheaper, as you are buying directly from us and not from the supplier.

**Greater Quality.**

Right from the start, we set the level of quality needed for your project, and guarantee that each team — design, manufacturing, and installation — all provide that same level of world class quality.
- Warehouses and distribution centres
- Cold stores
- Production plants/food processing plants
- Refrigeration system
- AS/RS automated storage and retrieval system
- Sandwich panels for commercial and residential application
- Cleanrooms
WAREHOUSES AND DISTRIBUTION CENTRES

Distribution and logistics are a crucial element of the business chain, enabling tighter control and availability of your goods to market and providing the opportunity to reduce external costs. By understanding your individual specifications and loading logistics CT-TECHNOLOGIES can create the right design for maximum distribution efficiency.

We can assess your loading area, dock spacing, forklift entry, loading ramp and outside drainage ensuring that your distribution works for your tight logistical schedule as a return on your investment.
CT-TECHNOLOGIES possesses experience within many different types of production and processing facilities.

No matter what type of building you need, we will use our knowledge and experience to construct the perfect plant for your company. We will build your processing plant so that you can run your operation efficiently and productively, increasing your own competitive edge and market position.

- meat and poultry processing
- fish processing
- dairy processing
- ice cream processing
- freeze dried coffee
- fruit/vegetable processing
COLD STORES

For maintaining proper quality and increasing the shelf-life of the food products, proper designing of the cold storage is essential.

CT-TECHNOLOGIES selects and cooperates with a range of well-known suppliers to be sure that no compromises are made in terms of design, technology, material selection, or on-site construction.

All cold stores will comply with local regulations. If required, a cold store solution can be designed to any national standard or international standard.

We are designing the cold storage system in such a way that:

- Power consumption is minimum
- Weight loss of the product is less
- Water removal from the evaporator coils is minimum
- Requirement of supplementary humidification is minimum
- Refrigeration load is reduced by installing Heat Recovery units in the ventilation system and proper selection of insulation
- Operating, maintenance and installation cost is minimum
- Safety of manpower is considered
- Minimum heat loss through doors and docking systems
CT-TECHNOLOGIES dedication to quality materials and superior solutions is shown by our attention to detail:

- Cladding, selected for local conditions and environment, is designed for optimum protection against rough treatment
- Heat loads of incoming products, transmission, machinery etc. are calculated by means of standardized computer programs
- Insulating panels with superior insulation characteristics reduce heat transfer and operating costs

- Easy-to-operate, automatic or manual door systems are built to customer’s needs and requirements
- Electrical systems and controls are designed for efficient operation
- As an option, forklifts, shelves, pallets, converters, packing equipment, emergency generators, and weighing stations selected for the job at hand can be supplied by CT-TECHNOLOGIES

**CASE STUDY**

<table>
<thead>
<tr>
<th>Location</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of completion</td>
<td>2017</td>
</tr>
<tr>
<td>Client</td>
<td>Zeal Aqua</td>
</tr>
<tr>
<td>Description</td>
<td>Cold storage for shrimp, shrimp processing plant, a total area of 3 600 m²</td>
</tr>
</tbody>
</table>
AUTOMATED STORAGE AND RETRIEVAL SYSTEM (AS/RS)

CT-TECHNOLOGIES offers automated storage and retrieval system (AS/RS). We understand that food manufacturers and distributors refining operations rely on product quality, product freshness, and reliability in order to remain competitive. The high-speed nature of an AS/RS increases the speed that products are moved in and out of the warehouse, preventing spoilage.

CT-TECHNOLOGIES provides planning, design, supply and installation of various scopes for rack supported buildings. Beside standard scopes like sandwich panels for walls and roofs, we also provide syphonic systems for roof drainage, lightning protection, fall arrest etc.

In addition to ensuring safety and brand reputation, warehouse automation provides many long-term advantages to overall warehouse operations – from reducing costs and increasing inventory accuracies, to boosting productivity and optimizing material flow.

AS/RS increase warehouse efficiency by:

- Maximizing available storage space in existing structures, avoiding off-site storage and expansions
- Minimizing overall building footprint up to 50% versus conventional warehouses
- Reducing energy costs by 40% in cooler environments
- Reducing labor and product damage costs
- Increasing inventory accuracy and customer service
## CASE STUDY

<table>
<thead>
<tr>
<th>Location</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of completion</td>
<td>2017</td>
</tr>
<tr>
<td>Client</td>
<td>SSI Schaefer</td>
</tr>
<tr>
<td>Description</td>
<td>AS/RS Warehouse, dual temperature. One of the highest AS/RS built in South East Asia</td>
</tr>
</tbody>
</table>
CT-TECHNOLOGIES provides sandwich panels, doors and other related products for commercial buildings and with high focus on fire safety, energy efficiency and aesthetics. Examples are warehouses, hotels, shopping malls, etc.

We offer mineral wool panels and doors with strong fire protection, zero flame spread and zero smoke contribution, which is a big advantage for commercial buildings as fire safety is extremely important for our clients. Extreme energy efficiency of our panel system for commercial buildings will greatly decrease utility costs resulting in huge savings. We are also able to do steel sheets on the panels which results in good looking buildings and beautiful design.

Residential applications have several characteristics:

- High insulation value
- Secure fire protection
- Aesthetically attractive application
- Energy efficient
- Short construction time
CLEANROOMS

CT-TECHNOLOGIES designs, manufactures and installs movable partition walls and modular false ceilings for the creation of sterile and controlled contamination environments for the Pharmaceutical industry, Electronic, Cosmetic and Food Industries as well as Research Laboratories.

The many years of experiences of our engineers and technicians in these fields always guarantee the high level of quality of the final product in compliance with cGMP and FDA rules.

All the production processes for movable partitions, false ceiling and accessories are carried out in a factory by highly qualified personnel. The assembly activity is carried out by specialized technicians, which always guarantees a rapid and high-quality installation as well as a skilled after-sales service.
Our CLEANROOMS project activity is appreciated for the high level of documentation which is submitted to the Client for the approval of the construction drawings; the documents contain all of the design and specification in order to verify their accuracy following the site survey.

After completion of installation, a technical manual including all of the drawings and the installed materials certificates is released. If required, an IOQ protocol draft for the materials manufactured by CT-CLEANROOMS can be submitted.

WALL AND CEILING SYSTEMS

The movable walls and walk-on ceilings are constructed using self-standing modular panels with external covering suitable for the sterile and controlled contamination environments. We can provide skin materials as follows: 0,5-0,6 mm thick steel skin or SS skin or 0,8 mm Aluminum skin. The external covering of the modular panels is chosen according to the process to be carried out in the cleanroom and the basic requirements for the cleaning and sanitization procedures; as an example, the following external finishing are readily available:

- Polyester roll coated
- PVDF roll coated steel sheets
- PVC coated steel sheets

The assembly of the panels is carried out using solids fittings with aluminum profiles of special design; the resulting joints are sealed with silicone in order to guarantee coplanar surfaces. The movable concept design permits the disassembling of only one panel without dismantling the entire installation.

The thickness of our CLEANROOMS panels is 50,60 and 100 mm.

DOORS

The one and two leaf doors suitable for the pharmaceutical environments have been designed to be coplanar to the movable walls having a similar construction structure. The doors can be equipped with push-knob or handles, closing magnet system, door closing systems, etc. Automatic operation of the doors is offered on request.

The one or two leaf sliding doors, without floor rail, are also constructed similar to the movable walls and have an upper special sloped cladding which holds and encloses the sliding mechanism; automation is offered on request.

WINDOWS

The windows on movable walls have been designed to be coplanar to the panels, sealed with silicone on their perimeter and constructed with double safety panes on each side. The thickness is 50 mm.

The following fillings are readily available:

- 17,32 mm diameter with 0,06 thick cell Aluminum or Rockwool infill 100kg/m3.
- Polyurethane infill
- Polystyrene
- Gypsum
In the installation where full visibility of the internal operation is required, CT-CLEANROOMS proposes a fully glazed cleanroom partition and door system. The glazed walls are constructed using self-standing modular panels with lower and upper compensation panels advisable to enhance the strengthening of the whole system.

Where the cleanroom is constructed with rigid walls such as dry walls or brick walls CT-CLEANROOMS can propose a high pharmaceutical grade finishing for doors and windows for this special application.

In order to complete the cleanroom, the following accessories are readily available:

- Interlocking system for doors
- Optical indicators for door status
- Telephone and interphone system
- Glass breakout panels
- Lighting fixtures for sterile and controlled contamination environments
- Stainless steel or aluminum coplanar air return grilles
- Utilities removable panels
- Air shaft vane for return air
- Arrangements for switches and sockets (low and high voltage)
- Door automation systems
PRODUCTS
The right choice of sandwich panels is extremely important and connected with solving a number of technical problems, which due to our longstanding international experience are well known to us. Not all panels, available in the market, are suitable for construction of cold stores and can ensure their correct exploitation, and panel joint design has a significant effect on how fast the panels are installed on-site and how they will behave under large temperature difference inside and outside the plant.

The panels used by CT-TECHNOLOGIES are specially developed for a cold store or temperature controlled facilities and meet the main international standards. Besides the optimal choice of panels, we ensure supply of all required materials for installation of panels – of the correct type and in required quantity.
Our cold room panels are sandwich panels consisting of metallic cover sheets which enclose a core layer made up of polysocyanurate (PIR) rigid foam or upon request polyurethane (PUR) rigid foam. Our panels have remarkable hygienic features in respect of application in food processing, storage, and distribution facilities.

No matter what applications you wish to plan with our cold room panels, you will always find the right panel for a certain purpose starting with cooling in positive temperatures or refrigerating, deep freezing or even shock frosting.

We use PIR + PUR panels in a variety of thickness to obtain the correct holding temperature for walls and ceilings expertly installed with food-safe aluminum flashings and aluminium ceiling suspensions.

For sensitive areas which require fire protection, we can install fire resistant panels to protect from heat and flames to meet certain insurance specifications.

### What you get at a glance

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Element thickness of between 40 and 220 mm</td>
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<tr>
<td>Cover widths of 1000 mm, 1100 mm, 1110 mm and 1200 mm</td>
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<tr>
<td>Element lengths of up to 20 m</td>
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<tr>
<td>Double tongue-and-groove joints from an element thickness of 60 mm</td>
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<tr>
<td>Constructive labyrinth seal from an element thickness of 60 mm</td>
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<tr>
<td>Snap-in joint for various element thickness</td>
</tr>
<tr>
<td>Heat transition coefficients (U values) of between 0.56 and 0.10 W/m2K</td>
</tr>
<tr>
<td>Optional food safe surface coating FS 3000</td>
</tr>
<tr>
<td>General approval Z-10.4-428 issued by the German building inspectorate</td>
</tr>
<tr>
<td>Classification of behavior in fire up to B-s1, d0 in accordance with DIN EN 13501-1</td>
</tr>
<tr>
<td>Also available in stainless steel</td>
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<tr>
<td>Optionally available with anti-fingerprint coating</td>
</tr>
<tr>
<td>More than 150 shades of color for an individual design</td>
</tr>
<tr>
<td>Hollow chamber profile for hygienic and neat joint closure</td>
</tr>
</tbody>
</table>
**IPN QuadCore panels**

The high-performance insulation core IPN-QuadCore (PIR) guarantees an advanced insulation effect. In addition to perfect insulating properties the QuadCore technology ensures the highest thermal efficiency, exemplary fire behavior and impressive durability. Here industry standards are not just met but exceeded with ease – and thermal efficiency improved by 20%, in regards to the standard PIR/PUR panels.

In order to achieve U-values of 0.20 W/m²K insulation panel with quadcore technology merely needs an insulation thickness of 9cm. Due to its specifically developed POLAR core it is, compared to other materials, much thinner but still maintains cold temperatures without making sacrifices.

**PRODUCTION SYSTEM**

PIR, PUR and Quadcore are all products as continuous automated production system: Results in fewer voids in the foam, good distribution of foam and good adhesion between foam and steel sheets.

Production temperature: Steel sheets are preheated before production ensuring good adhesion between steel sheets and foam.

Cooling procedure: Panels are cooled individually for at least 4 hours before being stacked to allow correct curing.

**STEEL SHEETS**

Steel quality & Corrosion protection: The cover sheets are made from hot-dip galvanized steel, Z275 (275 gr/m²).

Coating systems: Nominal coating for interior and exterior side is 25µm, double-layer-stove-enamel finish in industrial colors. Surface protection consists of removable protection foil.

Steel sheet thickness: Interior side 0.60mm thick, exterior side 0.50mm thick or both sides 0.60mm. For special requirement, we provide thicker coating layers as well as well of different composition.
Mineral wool is highly fire resistant, which has long made it as an insulation material of choice in many commercial buildings. The porous and elastic structure of the wool also absorbs noise.

**Advantages**

The sound is blocked more efficiently by mineral wool, so the interior of a building suffers less acoustic invasion.

Mineral wool itself will not burn until temperatures reach beyond 1,800°F (1,000°C). The insulation performs as a fire barrier, slowing down house fires and giving the fire services more time to get things under control.

The qualities and performances: better mechanical and thermal performances, reduced emissions of volatile compounds, improved fire behavior.

**MINERAL WOOL PANELS**

WARRANTY

The surface of our sandwich elements are guaranteed for 10 years, up to 30 years upon request.

QUALITY CONTROL

Permanent control is performed during the production process which guarantees panels being produced as per technical specifications, market requirements and legal regulations which is confirmed by various certifications for quality system development, fire classification, thermal conductivity, joint permeability, environmental management, energy efficiency etc. issued by relevant authorities (EPAQ, ISO, TUV, FM, etc.).
“CT-TECHNOLOGIES has been working for us on several projects and completed the work in a good condition. All the rooms are still working well until now and have been giving trouble free service ever since. It has been a pleasure working with PT.Teknologi Insulasi Asia and we look forward working with them on many future projects.”

Andi Tando Sutanto
Project Manager
PT. Wonokoyo Jaya Corporindo
Indonesia
DOORS

The product range includes various variants of hinged, swing (flip-flap), sliding, high-speed doors used for freezing or cooling areas, for office, work or service rooms of stores and production facilities. Furthermore, we supply doors of special use, for example, for controlled atmosphere rooms; fire resistant doors, lifting gates, etc.
HINGED DOORS

Hinged doors are available as single- or double-leaf design and with leaf thicknesses between 80 mm and 120 mm. On request, doors for quick-freeze stores can be supplied with a special leaf thickness up to 160 mm.

The hinged doors are used in cold rooms, stores and cells up to 0 °C (type KTM), but we also offer doors that can be used in chilled rooms above 0 °C. Freezer room hinged doors (GTM) can be used in freezing rooms, stores up to -28 °C, are optionally available for fast-freezing rooms up to -40 °C. Service room doors (type BTM) are used in service rooms and internal logistics.

Benefits

- Highly resistant structure
- Fast and easy installation
- Several options available
- Multiple applications, resistant to corrosion and chemicals
SLIDING DOORS

Sliding doors are available in single-leaf and double-winged design.

The sliding doors are used in cold rooms, stores and cells up to 0°C (type KSL / KS). Freezer room sliding doors (Type GSL / GS) can be used in freezing rooms, stores and cells up to -28°C, and are optionally available for fast-freeze rooms up to -40°C. Service room sliding doors (Type BS) are used in service rooms and internal logistics.

Benefits

- Ideal for applications where fast opening and closing is important, especially in areas where material handling equipment such as forklifts operate
- Suitable for coolers, freezers, warehouses and industrial buildings
- Available with electric or manual operation
HIGH-SPEED DOORS

Our high-speed industrial doors enable energy and cost savings as well as optimized traffic flows, production, and logistic activities. Our high-speed roll up doors are safe, reliable, maintenance and user-friendly. They all meet the requirements of the European standard EN13241-1.

We can offer a wide range of high-speed doors depending on size, application, your needs, traffic frequency etc.

Our flexible high-speed doors help to meet important cold storage requirements: stable cold temperatures, minimal energy consumption, respect for the cold chain and the prevention of icing.

Benefits

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save energy</td>
<td>The fast door cycle and the tight seal reduce transfer of air</td>
</tr>
<tr>
<td></td>
<td>Increase refrigeration efficiency and allows smooth traffic flow of material and staff</td>
</tr>
<tr>
<td></td>
<td>Automatic and fast opening and closing improves efficiency of your freezer room</td>
</tr>
<tr>
<td></td>
<td>Optimizes cold storage operation</td>
</tr>
<tr>
<td></td>
<td>Optional insulating curtain and heated side posts reduce icing</td>
</tr>
<tr>
<td></td>
<td>Good seal guarantees better climate control</td>
</tr>
<tr>
<td></td>
<td>Extremely safe</td>
</tr>
<tr>
<td></td>
<td>Self-reinserting door curtain</td>
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</tbody>
</table>
FIRE RESISTANT DOORS

We offer metal fire door, fully galvanized and painted in RAL colors, with a considerably robust frame ideal for large-sized doors or for installation on weaker walls. Certified and approved in the following categories, for fixing with brackets or bolts or for application on masonry and drywall, attached with anchor clips-screw plugs-subframes:

EI2 60, 90 or 120 STANDARD EN 1634-1, Single or double leaf

REI 60 or 120 STANDARD UNI 9723, Single or double leaf

SWING DOORS

We can offer standard swing doors foamed with PU rigid foam, polyethylene swing doors with a grease-resistant plastic material, or PVC swing doors with UV-resistant soft PVC transparent door leaf. Application of these doors covers service rooms and internal logistics.
PVC CURTAINS

Make your facility safer, quieter, and more energy-efficient by protecting your entry ways with PVC strip curtains and doors.

PVC strip curtains protect staff and stock from the elements and provide cost-effective heat retention, without compromising access. In addition to providing excellent climate control, represent an economic alternative to high-cost noise control materials.

CT-TECHNOLOGIES offers a variety of high-quality PVC curtains that have been tested and certified to meet all relevant international standards and regulations. We will be happy to assist you to specify exactly what type of PVC strip is needed to best fit your application.

Behind sectional doors or high-speed doors, they reduce the exchange of heat and separate differently heated rooms or production halls. Strip curtains are suspended between crane rails and are also used to protect against dust, shavings or splashes.

Benefits

<table>
<thead>
<tr>
<th>Can be installed in minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conserve conditioned air, even in high-activity areas</td>
</tr>
<tr>
<td>Reduce heating and refrigeration costs</td>
</tr>
<tr>
<td>Reduce noise levels</td>
</tr>
<tr>
<td>Easy to clean and maintain</td>
</tr>
</tbody>
</table>
AIR CURTAINS

Air curtains prevent the exchange of air in open freezers and cold storage; resulting in considerable energy savings in situations where doors are frequently opened.

They provide optimal climate control in freezers and cold storage; the system dehumidifies the freezer and prevents moisture passing through the door opening. A second air stream at the door ensures that the temperature difference between the freezer/cold storage and the front area is reduced. Also, prevents moisture from developing and ice forming. It is possible to achieve a saving of more than 30% on your energy bill.

Benefits

Avoid mist and reduce snow and ice (minimal maintenance)

Better products conservation due to regular inside temperature

Reduce risk of accidents (better visibility and no ice in the entrance)

Substantial energy saving due to big temperature difference
RAPID ROLLER DOORS

Our high speed roll up doors are crucial to your logistic operations and processes. They enable smooth material handling, an optimized workflow and fast and efficient loading and unloading of goods.

With our fast, reliable and safe high speed doors your logistic activities will run without interruptions and loss of productivity. This is essential to everyone active in logistics, transport and warehousing.

Both our exterior and interior high speed doors are designed for intensive inbound and outbound traffic. They have a fast door cycle and can be equipped with smart sensors and automatic commands. This results into time savings and improved efficiency.

<table>
<thead>
<tr>
<th>Benefits</th>
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<tbody>
<tr>
<td>High opening and closing speed</td>
</tr>
<tr>
<td>Automatic opening and closing controlled by sensors</td>
</tr>
<tr>
<td>Self-reinserting door curtain</td>
</tr>
<tr>
<td>Wear and maintenance are limited to a minimum</td>
</tr>
<tr>
<td>Remains operational even under heavy wind</td>
</tr>
<tr>
<td>Tight seal keeps out wind, dust, dirt, rain and snow</td>
</tr>
</tbody>
</table>
“... CT-TECHNOLOGIES has successfully completed the installation of panels throughout the factory right from the raw material receiving to the cold storages. The service of the whole team has been exemplary. Hoping to maintain good rapport with the company.”

Guruprasad B.
General Manager
Zeal Aqua
India
For fast and safe loading and unloading of goods, CT-TECHNOLOGIES supplies docking stations consisting of dock levelers, dock shelters, and sectional doors.

CT-TECHNOLOGIES dock levelers, dock shelters, and sectional doors are designed to ensure efficient material handling at the loading bay.

While choosing docking system, we take into account inside and outside conditions of facilities, loading/unloading features, type of goods and supply equipment which are most suitable for your project.

Our products are suitable for all applications, be it positive or negative temperature. Using the correct docking stations will minimize the ingress of moisture and reduce the heat loss when loading/unloading diverse types of vehicles. At the same time installation, operation and maintenance are very easy and safety high.

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**They’re safe**
Any warehouse equipment you use -- whether it’s a forklift, a pallet or a loading dock -- needs to be safe

**Time savers**
Loading docks save time because you’re unloading and loading in the same place

**Able to handle loads of all sizes**
Loading docks can handle loads up to 100,000 pounds

**Compatible with trucks**
Loading docks that are truck-compatible prevent injuries
CT-TECHNOLOGIES delivers and installs a wide range of industrial sectional doors of the highest technical standards and quality, depending on the facility’s purpose and functional requirements of the user. All sectional doors are thermally insulated, powered manually or automatically. The user safety factor is developed according to international standards.

### Benefits

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doors with DURATEC synthetic glazing</td>
<td>Doors with DURATEC synthetic glazing stand up to tough demands in rough industrial environments, while maintaining their transparency</td>
</tr>
<tr>
<td>Lip seals on both sides of the door and a double seal in the lintel area</td>
<td>Protect from cold loss</td>
</tr>
<tr>
<td>Extra-flat stainless steel threshold</td>
<td>Ensure easier passage of pedestrians</td>
</tr>
<tr>
<td>Increased safety, faster door action and lower inspection and maintenance costs</td>
<td></td>
</tr>
</tbody>
</table>

Optional thermal insulation with SPU 67 Thermo
CT-TECHNOLOGIES works with diverse types of floor insulation, ranging from polyurethane coverings over low/high polystyrene to special products such as foam glass.

**Characteristics:**

- High thermal insulation
- High mechanical resistance to compression
- Length in mm: 1250mm, 2500mm, 2900mm
- Width in mm: 600
- Thickness in mm: 10-300mm depending on type and availability
- Board type: ship lapped, square edged, tongue & grooved
- Fire behavior - Euro Class E.
- Declared Thermal Conductivity $\lambda_D$ at 10°C - static value 90/90 with 25 years aging: 0.033
- W/mK – 0.038 W/mK
**VAPOUR BARRIERS**

We also supply vapor barriers and floor heating systems. The use of our slab vapor retarders/barriers is an effective, economical way to control moisture migration through concrete. Through proper installation of an effective vapor retarder/barrier beneath the concrete we make sure to reduce or eliminate issues that arise when moisture migrates into interior spaces, including the adverse effects such moisture has on floor covering and coating systems, as well as compromised indoor air quality due to the development of fungus, mildew and mold.

**FLOOR HEATING MATS**

**Floor Heating Mats for Cold Stores in Door Areas**

Heating of the concrete floor indoor areas compensates the flow of cold air above the concrete and thus prevents the door seals from freezing to the floor as well as ice forming in the entrance area behind the door.

**Floor Heating Mats for Cold Stores for Frost Protection**

The heating mat systems can be installed directly on the condensation barrier below the insulation, thus preventing the ground from freezing. Due to the easy handling of our heating mats in combination with specific installation plans and instructions as well as a detailed documentation, they can simply be installed even by untrained personnel.
We provide PVC and ALU windows in any color and size.

Our windows are safe for food processing plants as they do not splinter if broken. Thermos glass delivery is possible too as per your request, as well as custom designed viewing galleries.
STEEL STRUCTURE

We can provide you with design, procurement, and installation of the prefabricated steel structure of any purpose. Our experienced engineers can offer the best solutions that suit your needs and requirements, taking into account functionality, cost-efficiency, and architectural elegance.

The steel structure is manufactured of only the best quality steel produced in European steel factories and prefabricated in recognized companies. Corrosion protection can be applied as coatings or hot dip galvanization depending on client's requirements. Transport and installation are carried out with care under the strict supervision of our site engineers.
We offer professional lighting solutions for the global market - lighting solutions for industrial production halls, office buildings and other premises.
## Benefits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symmetrical or asymmetrical light distribution</td>
<td></td>
</tr>
<tr>
<td>Easy installation, directly onto ceilings or on hanger</td>
<td></td>
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<tr>
<td>Best prepared for industrial challenges</td>
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</tr>
<tr>
<td>High resilience, zero maintenance and a long service life with low electricity requirements</td>
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<tr>
<td>European manufactured</td>
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<tr>
<td>Extremely low power consumption &gt;130 lm/W</td>
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<tr>
<td>IP65 or IP66, protected against dust and high-pressure water jets</td>
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<tr>
<td>Stable light colors</td>
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<tr>
<td>Optimum lateral glare suppression (UGR &lt; 22)</td>
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<tr>
<td>No stroboscopic effects for rotating machines</td>
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<tr>
<td>Compact luminaires</td>
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<tr>
<td>Resistant to temperatures as low as -40 degrees up to +55 degrees Celsius</td>
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<tr>
<td>Maximum performance with a minimum of luminaires</td>
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<tr>
<td>High lux levels at 50 cm height from the ground</td>
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<tr>
<td>Optimal uniformity of illuminance</td>
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<tr>
<td>Average project power consumption of less than 2 Watt per m²</td>
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</tbody>
</table>
Our solutions are engineered to minimize power consumption in order to save electricity bills.

Because of technology advancements and logistic strategies, the cold storage of perishable items has become an important stage in the distribution between manufacturers/processors and retail locations. The bulk storage of large or small quantities requires refrigeration that enables cold store facilities to be safe, energy conscious and compliant with government requirements and standards. CT-TECHNOLOGIES works closely with customers to identify and determine the appropriate refrigeration concept to create facilities that make for efficient and economical distribution.

**We know how to:**

- Integrate processing and storage
- Select the best compressors and compressor control system to obtain a high coefficient of performance resulting in excellent refrigerating efficiency and low power consumption
- Place high-quality air coolers, direct expansion or flooded, to ensure even temperature distribution and maintain the high quality of stored products
- Configure galvanized, high capacity, individually-controlled condensers for low condensing pressure
- Minimizing power consumption by developing and implementing computerized control and monitoring systems for automatic capacity regulation
- Design valve stations for minimal pressure loss, effortless operation, and maintenance
The bulk storage of large or small quantities requires refrigeration that enables cold store facilities to be safe, energy conscious and compliant with government requirements and standards.

CT-TECHNOLOGIES works closely with customers to identify and determine the appropriate refrigeration concept to create facilities that make for efficient and economical distribution.

CT-TECHNOLOGIES has years’ experience, in supplying and selecting the best industrial refrigeration equipment from the industry's leading manufacturers.

CT-TECHNOLOGIES can supply these components stand alone, but is also capable of developing and installing complete solutions and turn-key projects.

**COMPRESSORS**

Compressors are the heart of every refrigeration plant; its main task is to "pump" the heat out of rooms and products. CT-TECHNOLOGIES represent many brands.
CONSENSERS

A condenser is another vital component of a refrigeration system. Its foremost task is to discharge the heat from the compressors to the surrounds – air or water. This can be achieved in many ways depending on the application and the resources available.

CT-TECHNOLOGIES operates with three main types; Evaporative condensers, air-cooled condensers, and water-cooled condensers. Each type has its own distinct features.

Evaporative condensers

Normally, the default choice is an evaporative condenser, which makes use of the desirable properties of water with its ability to reject or absorb large quantities of heat through evaporation (latent heat of vaporization). This results in the lowest possible condensing temperature and consequently the lowest possible power consumption on compressors.
Air cooled condensers

If water is not easily available and/or in case of small plants, CT-TECHNOLOGIES is able to provide another, more feasible solution, the air-cooled condensers that have low fan power consumption and require low maintenance.

Water cooled condensers

CT-TECHNOLOGIES cooperate with different manufacturers of water cooled condensers. The choice depends on the type and quality of cooling water and the type and size of refrigeration plant.
Valves

Valves and controls are essential components in a refrigeration plant. Not only are valves used for isolating parts of the plant, but automatic valves and controls are also used for the control and continuous running of the plant during variable loads. Good valves and precise controls are paramount for running a refrigeration plant optimally for years to come.
Chiller units

CT-TECHNOLOGIES provides a wide range of chiller units or packaged refrigerators. These units are completely self-contained units to chill water or glycol, either by air or water.

Ice making equipment

Ice is not just ice. Ice comes in many forms: Flakes, tubes, slush etc. each form has its own advantages and applications. We know that at CT-TECHNOLOGIES we can supply you with advice and support in selecting the right ice maker.

Our ice machines offer a wide variety of ice to suit any of your ice needs including fragmented, cracked, crushed, flake, and of course the original Tube Ice in an assortment of sizes. We also manufacture the Turbo Ice Rake, manual and automatic block presses as well as falling film chillers.
Ice handling equipment

Ice handling equipment binds the refrigeration system to the customer’s processes and makes sure the ice ends where it is needed when it is needed.

The conveying system takes care of the ice transport fast, efficiently and ergonomically. Ice storage enables systems with a smaller capacity to handle peak loads.
CASE STUDY

Location: Ghana

Year of completion: 2014

Client: We2 Sea Foods

Description: Cold store for frozen fish, expansion of cold store capacity for repeat client
RACKING SYSTEMS

CT-TECHNOLOGIES can supply any kind of storage system, including handling equipment. The choice of a storage system is often decided during the preparation of the conceptual design to ensure maximum storage capacity, easy inventory control and easy handling of stored products.

At CT-TECHNOLOGIES, we have the resources to provide all types of racking & shelving systems to maximize your storage space. Whether you need simple boltless shelving, a complex racking system, or anything in between, the warehouse specialists at CT-TECHNOLOGIES can create a solution based on your needs, and configure your warehouse racks perfectly.
ACCESSORIES

If required, CT-TECHNOLOGIES can design and supply items such as processing equipment, steel structures, electrical, mechanical installations etc. Therefore, we cooperate closely with producers of a wider scope of products, for example, freezing units, equipment for CA rooms, ranking systems for stores or various food production lines: tapes, silicone, t-omega fixation + accessories, ps slab and armaflex, screws, nuts, rivets, compensating valves etc.
ADVANTAGES OF WORKING WITH US
MINIMISE COMMUNICATION ISSUES AND PROJECT DELAY
You work with one supplier of complete set of materials for insulation, which bear responsibility for entire supply. This is much comfortable as to work with several different suppliers, which often cannot quarantine materials selected specifically for your project and supply of all accessories of installation.

OBTAIN COMPETITIVE PRICES
Thanks to many years of experience with the leading European producers, CT-TECHNOLOGIES can offer its customs the competitive prices.

ACHIEVE LONGER EQUIPMENT LIFE-TIME
The quality of supplied materials is a basis of our business. We cooperate only with producers, production of which we know well thanks to many years of use in our projects, and which we can recommend to our customers.

SKILLED IN-HOUSE STAFF
CT-TECHNOLOGIES has a staff of skilled employees, including engineers, projects managers, logistics managers, supervisors and installation workers. We also can offer installation and after sales support with our Russian partners.

UNIQUE KNOWLEDGE AND YEARS OF EXPERIENCE
We have a unique knowledge in insulation and 20-years of experience in technically demanded projects for the food industry. While choosing CT-TECHNOLOGIES, you work with a professional partner which ensures the quality of works.
CT-TECHNOLOGIES is able, through Danish banks and financing institutions such as Danske Bank, EKF and IFU to provide attractive financing solutions to our clients. We will work with you to secure the financing needed to fund your projects.

CT-TECHNOLOGIES meets the diverse needs of its clients worldwide, through appropriate tie-up arrangements with mentioned specialized organizations of repute.
“CT-TECHNOLOGIES has perfectly performed the installation of cold storages, chill rooms, flake ice room, light fixtures and all evaporators for the cooling system. The whole scope of supply and installation under CT-TECHNOLOGIES supervision led to trouble free operation and excellent quality work”

Quach Thanh Binh
General Director
Antesco
Vietnam
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