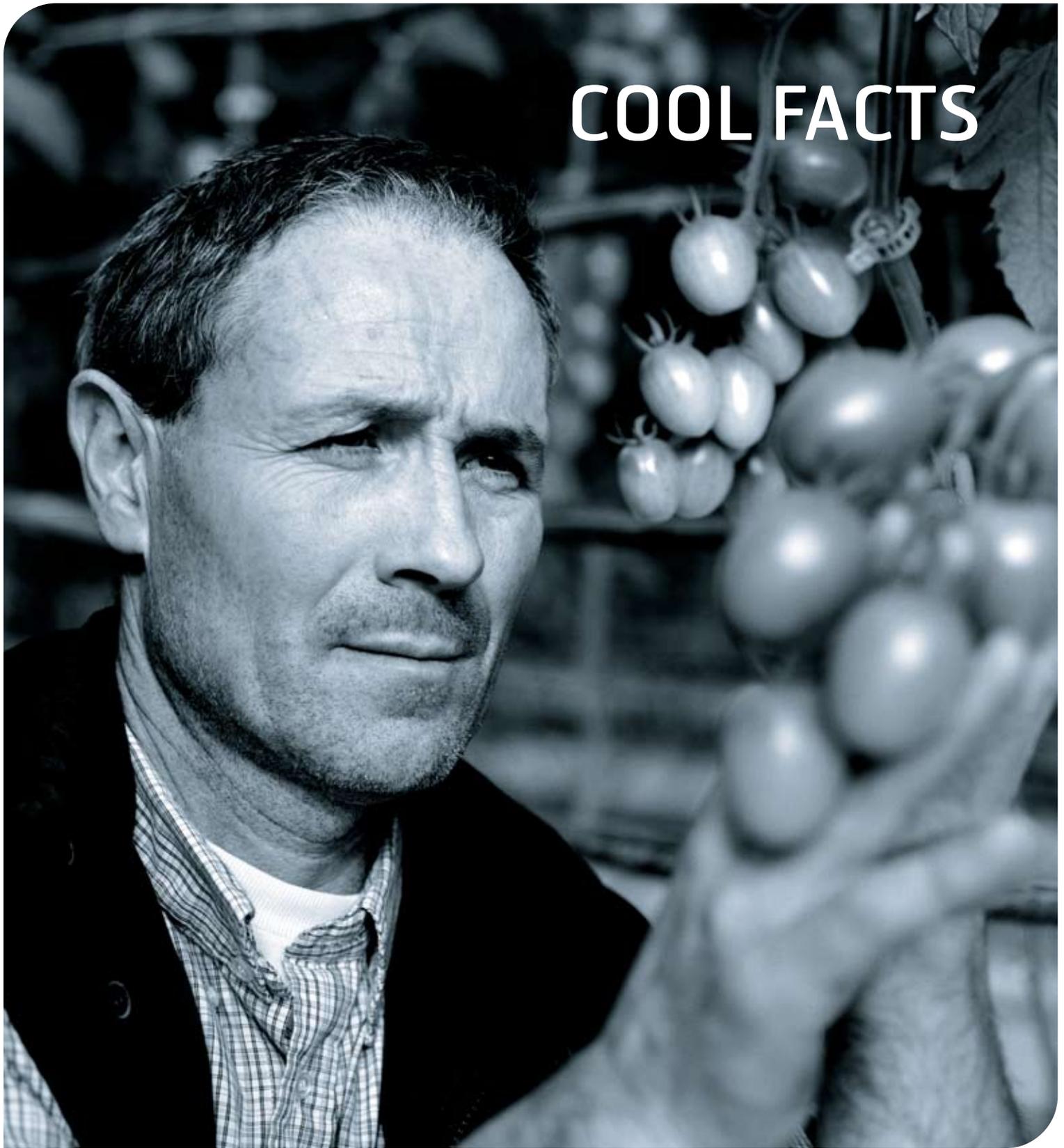


# COOL FACTS



 MAERSK LINE

CREATING OPPORTUNITIES  
IN GLOBAL COMMERCE









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Understand the process of refrigeration and discover the key factors in prolonging the shelf life of your products. With Maersk Line's extensive knowledge and know-how, your cargo will get the care it requires.

## **CARGO HANDLING** 11-18

Find out in detail all the necessary practical procedures for the optimal preparation and stowage of your cargo for transport: a) Prior to loading of reefer cargo. b) During loading of reefer cargo. c) Chilled fresh products. d) Frozen products. e) Checklist for reefer cargo.

## **EQUIPMENT** 19-31

**General reefer containers** Extensive research has led to advanced container technology which creates, measures and maintains the proper conditions for your cargo. Read about our container construction, airflow, power supply, generator sets, etc.

**Specialised containers** Our in depth knowledge of reefer transport is evident in our specialised containers. These containers are able to create and maintain the proper degree of humidity and atmospheric conditions crucial for the most delicate cargo. Discover our StarFresh, StarFresh Plus, Magnum and StarVent containers.

**Unique container systems** For ultra-low temperatures, our Super Freezers and Blast Freezers provide flexible transport and freezing solutions. The Sortie and the Stuffie containers facilitate an unbroken cold chain from the fishing vessel to the container.

## **COMMODITIES** 32-35

Refer to the set points recommended by our experts as guidelines for the correct settings needed for transporting your commodities in reefer containers – from anywhere to anywhere in the world.

## > BRINGING FRESHNESS TO THE TABLE...

**Maersk Line is committed to creating the optimal conditions for your products – from departure to arrival.**

We have been present in the refrigerated transport industry since 1936 and today, we are the largest carrier of refrigerated container cargo in the world. We also have the largest fleet of new, state-of-the-art reefer containers. This, together with more than 500 container vessels, ensures that we have the resources to satisfy most customers' needs, anywhere in the world. Furthermore, we have a service network that spans the entire globe, with a corporate commitment to deliver second to none service.

In a continuous effort to meet the needs of our customers and the demands of a growing market, Maersk Line has assisted in developing the world's leading reefer technology. Since our first reefer container was manufactured in 1964, we have developed a number of technological advances. Our Controlled Atmosphere and Super/Blast Freezer containers are just a few examples of value-adding innovations resulting from our industry insight and experience.

Maersk Line has put together a team of dedicated reefer specialists from around the globe, ready to assist you with their in-depth knowledge and know-how. They can help you to prepare your refrigerated cargo for shipment, and also provide assistance in selecting the right transport solution for you. Their professionalism and dedication are some of the reasons why customers choose us as their preferred business partner.



## ...TO THE WORLD

Constant care for the cargo has always been the driving philosophy of Maersk Line. Our reefer technicians at the terminals and specially trained staff on board our vessels make sure your cargo is carefully supervised.

Our innovative solutions are not just inside our containers and on board our vessels. They are also on-line. Maersk Line's continuous investment in e-commerce solutions can satisfy your information needs with time-saving solutions that let you focus on your core business. Knowing that your transport needs are in good hands. In our hands.

We hope you find this comprehensive guide helpful. It contains technical explanations of the processes of refrigeration, as well as pragmatic steps to the protection of cargo and the prevention of damage. It also outlines the numerous benefits of following proper procedures to ensure the best possible condition of your products upon arrival. Should you have any questions, you are most welcome to contact your local Maersk Line office for assistance.

**Our highly-trained staff, our technology and our constant care explain why Maersk Line is the first choice in refrigerated transport solutions. Time after time.**



## > FOOD CHAIN

# ENSURING FRESHNESS IN EACH AND EVERY LINK



### WHY REFRIGERATE?

Refrigeration is essentially the removal of heat through the process of evaporation. We choose to refrigerate commodities such as fruits and vegetables because we want to prolong their “practical shelf life” – the time from harvest until the product loses its commercial value.

Humidity is also a very important factor in the conservation of many fruits and vegetables. By shipping products in our Controlled Atmosphere containers, the humidity inside the containers can be increased, thus minimising any weight loss in the fresh produce.

Temperature is not the only important part of the equation... but it is the key element to successful refrigerated transport.

Technically speaking, the internal biological and chemical processes of fresh produce, such as respiration, will continue after harvesting. This means that the product absorbs oxygen ( $O_2$ ) and releases carbon dioxide ( $CO_2$ ) and ethylene ( $C_2H_4$ ). This is a process that generates heat.

Lowering the temperature reduces the respiration, and consequently the heat, considerably. Therefore, temperature is the most important factor when prolonging the practical shelf life. As high concentrations of  $CO_2$  and ethylene can deteriorate the commodities, these gases must be removed and replaced with fresh air through the ventilation system.

Ethylene production is especially high in fresh produce such as apples, peaches, apricots, avocados and pears.



## > AROUND THE WORLD AROUND THE CLOCK

Represented in all major trades with offices in more than 100 countries, Maersk Line has the network and the resources to transport your cargo to practically any part of the world. Wherever your cargo is destined, chances are we have numerous vessels and departures to ensure its safe and prompt arrival.

For detailed schedule information, please refer to our website. Contact details of local offices where representatives can assist you further can be found using [maerskline.com](http://maerskline.com).



# > A SLICE OF ADVICE WHEN COOLING TO MAINTAIN FRESHNESS

## CARGO HANDLING

### A. PRIOR TO STUFFING REEFER CARGO

#### PRE-TREATMENT OF PRODUCTS

The condition of products before they are stuffed plays an important role in their condition upon arrival. That is why it is essential that all products are treated correctly prior to stuffing. Even though the temperature, ventilation and humidity are all optimal during the entire voyage, products will only arrive in perfect condition if the pre-treatment has been performed correctly. Successful shipping begins at the product sourcing area.

#### PRE-COOLING OF CARGO

The proper pre-cooling of products will have a positive effect on both shelf life and out turn, compared to products that have not been pre-cooled. Reefer containers are built primarily to maintain the temperature of the products, therefore, products should always be pre-cooled to the required carriage temperature prior to being loaded into the container.

#### NO PRE-COOLING OF THE CONTAINER

Pre-cooling of the reefer container itself should never take place. Once the doors of a pre-cooled container are opened, hot ambient air will meet internal cold air, resulting in a large

amount of condensation on the interior surfaces.

As a result, condensed water may drip from the roof of the container and cause stains and weaken the structure of the boxes. Therefore, condensed water must be removed through the evaporator located inside the reefer machinery. Heat that enters the container during stuffing, combined with heat that is constantly generated by the “respiring” cargo, must also be removed through the evaporator.

As soon as water and heat pass the evaporator, ice is formed and the machinery enters a short defrost mode. Consequently, there will be less capacity available for cooling the cargo. In a tropical climate with excessively hot and humid air, any pre-cooling of the container is likely to cause problems and damage the products.

Pre-cooling of the reefer container is only allowed when the container is connected to the cold store and the temperatures are identical. The connection is achieved by the use of a “Cold Tunnel” – a tight duct between the cold store and the container, which prevents ambient air from entering.



# > WHATEVER THE CUT, YOU WILL FIND THE HANDLING WELL DONE

## CARGO HANDLING

### B. DURING STUFFING OF REEFER CARGO

#### THINGS TO DO

The stuffing and placement of cargo will directly affect the flow of air. Figure 1 illustrates the correct way to stuff a bottom-air delivery reefer with chilled or frozen cargo. In the case of chilled cargo, covering the entire floor with cargo forces the cool air to flow through both the cartons as well as the product, throughout the entire load. When frozen cargo is stuffed in this manner, the cold air flows around the cargo – blanketing the cartons and removing any heat that enters the reefer container through the walls.

#### THINGS NOT TO DO

Air always takes the path of least resistance. Here are a few examples (Figure 2) that illustrate reefer cargo which has been stuffed improperly. In the first three examples, air tends to “short circuit” or flow past the cartons/products rather than through them. The last two examples illustrate restricted airflow scenarios.

#### NEVER RUN A REEFER WITH DOORS OPEN

When the ambient temperature is warmer than the cargo, operating the reefer with the rear doors open will not cool down the cargo (fig. 3). Rather, the introduction of hot ambient air will heat up the cargo. When hot humid air enters the reefer, moisture condenses on the cold cooling coil and turns to ice. Cooled air escapes through the rear door, and the cycle continues. Once stuffing is complete and the doors are closed, the reefer could run for hours with a partially iced-up cooling coil. This would reduce its cooling effect and put the cargo in danger until the unit completes a defrost cycle.

Further, the genset should be stopped during stuffing, due to the risk of exhaust gas reaching the fresh cargo.

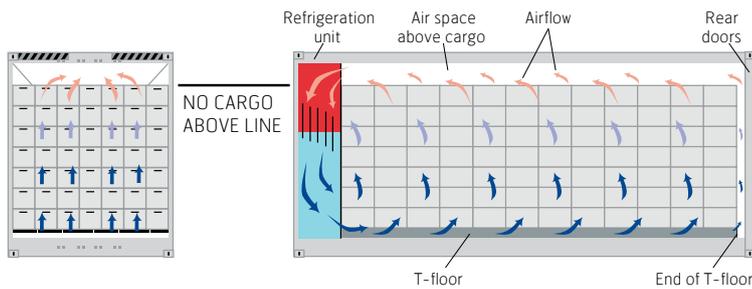


Fig. 1 The correct way to stuff a bottom-air delivery container with chilled or frozen cargo

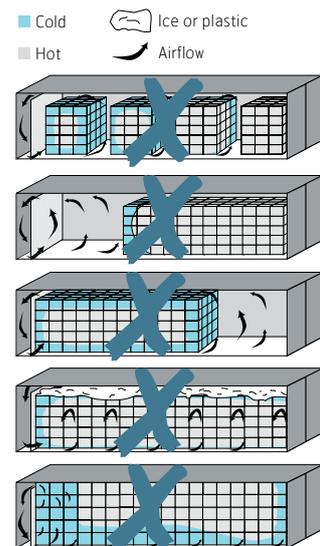


Fig. 2

**TO AVOID CARGO DAMAGE:**

- do not leave any areas open or uncovered on the floor, the front bulkhead or the side walls (if pallets are placed at the front bulkhead, be sure to place cardboard under empty pallets)
- do not run unit with rear doors open
- do not stuff cargo beyond the end of the T-floor
- do not plug channels at the end of the T-floor
- do not stuff cargo above the red load line
- do not put reefer set point at a temperature below what is required for the cargo (this will not expedite the cooling process)

**OPTIMAL STUFFING – TOP VIEW**

Covering the floor in a proper manner will improve the flow of air and hence, refrigeration. In order to force air up and through the cargo, the entire floor should be covered. Cover the floor from the front bulkhead to the end of the T-floor. Where the cargo does not cover the floor, some type of filler should be used, such as dunnage or cardboard. Do not stuff past the end of the T-floor with cargo or filler (fig. 4).

**BLOCKING AND BRACING**

For blocking and bracing cargo, wood is still the preferred material. Use wood as necessary (fig. 5), but do not nail wood or dunnage to the container. Cover floor with a filler between pallets to help force air through the cargo (as seen in the Top 4 view, fig. 4). Cover the ends of the last two pallets in order to force air up and through the cartons. Do not block off airflow past the end of the T-floor.

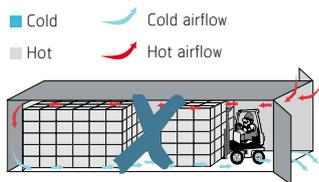


Fig. 3

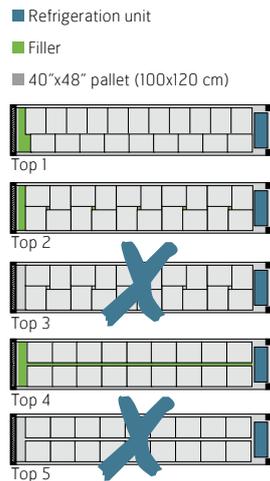


Fig. 4

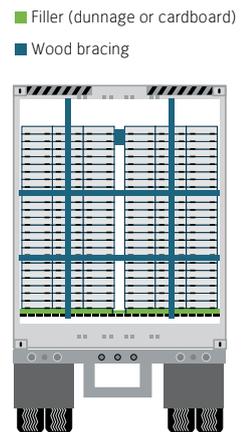


Fig. 5

# > CARE AND CONSISTENCY RIGHT DOWN TO THE CORE

## CARGO HANDLING

### C. CHILLED FRESH PRODUCTS

#### PACKAGING REQUIREMENTS

Packaging plays an important role when it comes to protecting the cargo. The packaging material must be able to support a stacking height of up to 2.4 metres (7'10"). The material should be able to withstand humidity without collapsing, and should allow the passage of an adequate vertical airflow through the cartons in order to maintain the desired temperature. As the air comes from the bottom of the container, the optimal air circulation can be achieved if each carton has symmetrical holes at both the top and bottom. The number, placement, size and shape of the air holes are determined by the product being packaged (fig. 6).

Furthermore, the wrapping material used should be sufficiently secure to prevent any blockage of the evaporator fan.

If Humidity Control is to be used for transportation, use wax-impregnated cardboard or other materials that will not lose strength in high-humidity environments.

#### STOWAGE

Stowage should enable the air to circulate properly. Heat, water vapour, carbon dioxide and other gases produced by the respiration process from chilled fresh products may damage the product and should therefore be removed. The stuffing should allow the refrigerated air to circulate through the packaging material and throughout the entire load.

If the cargo cannot cover the entire floor area, heavy cardboard must be placed over the empty space. Cool delivery air will always take the route of least resistance, thus causing a "short circuit" of airflow resulting in insufficient cooling of the cargo.

Cargo must never, under any circumstances, be stowed above the red load line. This is to ensure the proper circulation of refrigerated air. Slip sheets should not be used for fresh, chilled cargo.

For palletised cargo, the following steps are recommended:

- The cartons must be stacked squarely on top of one another to ensure that the weight is evenly distributed to the four corners of the cartons.
- The corners of each carton should be supported directly by the pallet.
- Place cartons on the pallets so that air flow up into the cartons is not restricted.
- The ventilation holes, located at the top and bottom of the cartons, must be aligned to allow the air to pass freely through the entire load.
- Shrink-wrapped pallets, slip sheets, foam trays, plastic bags or similar materials that may obstruct and block the air passage should not be used.
- If pallets are wrapped with plastic to provide stability, do not cover the bottom or the top of the cartons.

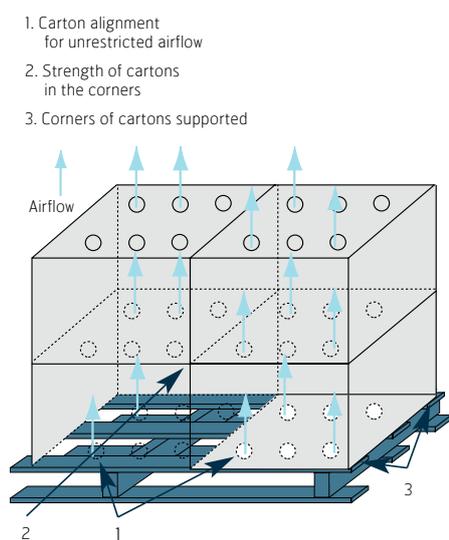


Fig. 6



## > CARE AND CONSISTENCY RIGHT DOWN TO THE CORE (cont)

### CONTROL OF VENTILATION LEVEL

The importance of ventilation should not be underestimated. Proper ventilation of fresh, chilled products is necessary to remove the heat, carbon dioxide and other gases produced by the cargo. Heat is removed by continuously circulating the internal air, whereas carbon dioxide and other gases are removed by replacing the internal air supply with cooled fresh air.

### CONTROL OF RELATIVE HUMIDITY LEVEL

Controlling the relative humidity level is also important when it comes to controlling the quality of your products. The relative humidity level affects many products, particularly the shelf life of fruits and vegetables – and thus their condition upon arrival. If the humidity is too high, mould and/or fungi may develop. If the humidity is too low, it may result in a higher weight loss causing products to wilt and/or shrivel. For many products, it is therefore important to be able to control the relative humidity level during transport.

Please note that two different systems are used to either decrease or increase the relative humidity level, depending on the commodities involved. If you need advice in selecting the optimal humidity level for your product, simply contact Maersk Line to benefit from our experience.

For further details please refer to the Equipment section of this brochure.

### THE PURPOSE OF CONTROLLED ATMOSPHERE

Atmosphere control is another crucial variable in securing the quality of your cargo. When fresh perishables are shipped to distant markets, they require a precisely controlled transport environment. It is well known that harvested fruits and vegetables continue to live and breathe until they are consumed or destroyed by decay or desiccation. Under normal circumstances, these factors dictate the life span of individual products.



The life span can, however, be prolonged by keeping the commodities at their optimal temperature, combined with the supply of the most effective blend of oxygen, carbon dioxide and nitrogen.

By transporting products under Controlled Atmosphere, the applied environment will slow down the ripening process and extend the shelf life of the products.

For further details please refer to the Equipment section of this brochure.

### COLD TREATMENT

The purpose of Cold Treatment is to exterminate insects and larvae by maintaining a sufficiently low temperature for a pre-determined period of time. The period of time and temperature required are defined in protocols established by phytosanitary authorities of the importing countries. If the temperature rises above the established requirements, the entire Cold Treatment process will fail and must either be extended or started over again depending on the protocol.

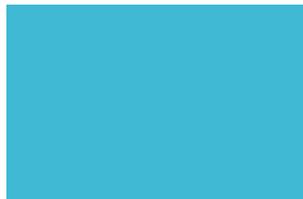
Applying Cold Treatment eliminates the need to fumigate cargo using insecticides, such as methyl bromide, which is illegal in many countries.

Cold Treatment is primarily applied to various types of citrus fruits, such as oranges, grapefruit and clementines. However, kiwi fruit, apples, pears, grapes, lychees, loquats, etc. can also be carried under Cold Treatment.

In order to reap the maximum benefits from the Cold Treatment process, several factors are absolutely essential. These factors include the correct pre-treatment, proper pre-cooling of the products, optimal packaging and stowage, as well as the constant monitoring at the terminals and on board the vessels.

To make sure that these procedures are strictly adhered to, our dedicated Maersk Line staff supervise the reefer containers during the entire voyage.

For further details about this service, please contact your local Maersk Line representative.



# > PROPER PACKAGING HELPS KEEP FROZEN PRODUCTS FROZEN

## CARGO HANDLING

### D. FROZEN PRODUCTS

#### PACKAGING REQUIREMENTS

Proper packaging procedures will help protect frozen cargo during transport. Frozen products do not require air holes in the top and bottom of the cartons. Air flowing around the load is sufficient to remove heat that has penetrated the container. The cartons should be stacked directly on top of each other to take advantage of their strength in the corners. If palletised, the corners of each carton should be supported directly by the pallet. (See fig. 6 on page 14)

**The packaging material must be able to support a stacking height of up to 2.4 metres (7'10").**

#### STOWAGE

The stowage of frozen products is relatively simple. All that is required is solid block stowage, leaving no space between the packages/cartons and no space between the cargo and the walls of the container. (See Top 4 in fig. 4 on page 13).

However, it is very important that the cargo is stowed below the red load line, as this allows the refrigerated air to circulate evenly around the cargo, thereby keeping the frozen products at the required temperature.

#### VENTILATION

When frozen products are transported, the fresh air ventilators must always be closed and the humidity indicator should be in the OFF position.

**We recommend a pallet size of 100x120 cm (40x48 inches) as this enables optimal stowage.**

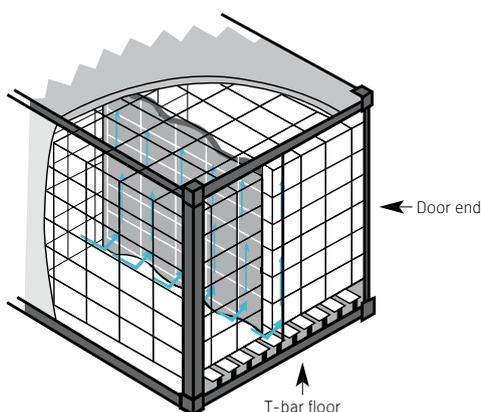


Fig. 7

## CARGO HANDLING

### E. CHECKLIST FOR REEFER CARGO

#### WHEN PREPARING FOR A REFRIGERATED SHIPMENT, ALWAYS DETERMINE:

- the optimal temperature requirement
- the fresh air ventilation requirement (in cbm/hour)
- the humidity requirement
- the transport time
- the practical shelf life of the product
- the volume of cargo
- the packaging materials and cartons used
- the recommended stowage pattern
- the required documentation, including legislative requirements

#### BEFORE AND DURING STUFFING, ALWAYS MAKE SURE:

- the container is set at the optimal temperature, ventilation and humidity levels
- cargo is never stowed above the red load line
- cargo is stable and evenly stowed (weight should be distributed evenly for maximum stability and the entire floor should be covered)
- the total cargo weight does not exceed the maximum payload of the container
- the total weight of the container (including container, cargo, chassis and genset) does not exceed the road limitations in any country crossed during transport
- the entire load is stowed according to our stowage guidelines (see pages 12-18)
- if cargo is palletised, dunnage is placed in the centre channel between pallets
- cargo is blocked and braced as necessary
- frozen or chilled cargo requirements are followed

#### FOR FROZEN CARGO, ALWAYS:

- follow our checklist for reefer cargo
- pre-freeze cargo before stuffing
- ensure that fresh-air ventilation is CLOSED

#### FOR CHILLED CARGO, ALWAYS:

- follow our checklist for reefer cargo
- pre-cool cargo before stuffing
- set unit at carrying temperature, not lower (a lower set point will not expedite the cooling process and may damage cargo)
- set fresh air ventilation as required

# > EQUIPPED WITH EXPERTISE

## EQUIPMENT

### A. REEFER CONTAINERS

#### CONSTRUCTION

Drawing from extensive research, Maersk Line's reefer containers are manufactured using the most advanced materials and design. Prior to delivery, the containers undergo rigorous testing and are subjected to extreme weather conditions, ranging all the way from tropical to arctic environments.

Furthermore, our unique design ensures these benefits:

- low tare weight to maximise payload
- spacious internal volume to provide maximum cargo space
- low heat leakage to maintain optimal product temperature
- minimal air leakage

The vast majority of Maersk Line's reefer containers are manufactured at the A.P. Møller Group's own container factories, Maersk Container Industri (MCI). MCI produces reefer containers in modern plants in Tinglev, Denmark and Qingdao, China, and container components in Narva, Estonia.

More information can be found at [www.maerskbox.com](http://www.maerskbox.com).

#### AIRFLOW

Maersk Line's reefer containers have bottom-air delivery. This means that the air is supplied from the bottom of the container through the specially designed T-bar floor.

#### POWER SUPPLY

The power supply used must be either 380 volts/50 Hz or 440 volts/60 Hz. The power cables used are fitted with ISO standard CEE-17 plugs.

#### ENVIRONMENT

Maersk Lines's reefer containers adhere to environmental protection guidelines.

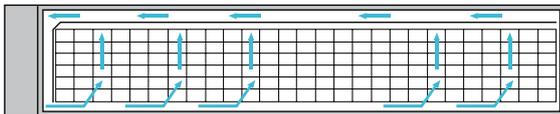


Fig. 8 Airflow in bottom-air delivery containers

#### CONTAINER INSPECTION

At Maersk Line we ensure high standards.

Before one of our containers is released to a customer, it is thoroughly checked by Maersk Line representatives, ensuring that only clean and sound containers are made available.

Due to our stringent standards and inspection of the reefer containers, there is no need for any other test prior to stuffing.

#### DATALOGGERS AND PROBES

Maersk Line has contributed to the development of a vital tool in temperature management: the datalogger. It is a microprocessor that monitors the temperature while en route. Even when the container is unplugged during port operations, the datalogger can continue to record the temperature by means of a back-up battery.

The temperature sensors (probes) can be inserted directly into the cargo to measure its pulp temperature. Up to four probes can be inserted at the same time.

Through cables connected to the datalogger, all temperature records are stored. The probes measure the temperature to a degree of accuracy of  $\pm 0.25\text{ }^{\circ}\text{C}$  ( $\pm 0.4\text{ }^{\circ}\text{F}$ ).

The standard temperature recordings show:

- set point temperature
- supply air temperature (air blown into the container)
- return air temperature (air returned from the container)
- temperature from probe 1
- temperature from probe 2
- temperature from probe 3
- temperature from probe 4
- relative humidity

If requested in advance, a printout of the temperature recordings can be provided at an extra charge.

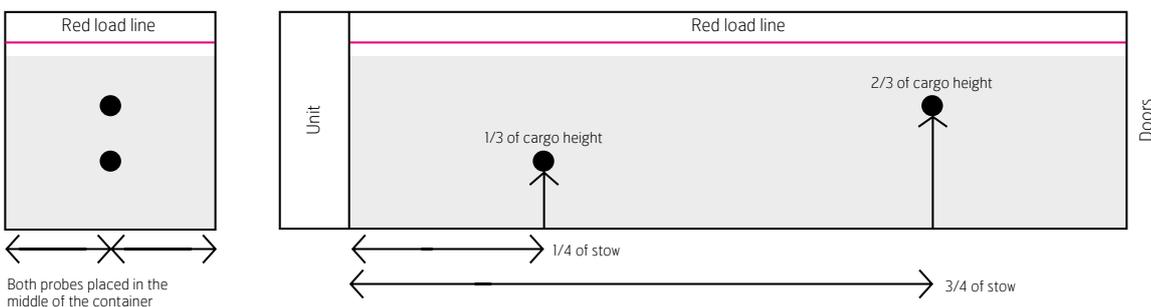


Fig. 9 Correct positioning of probes in reefer cargo

## > EQUIPPED WITH EXPERTISE (cont)

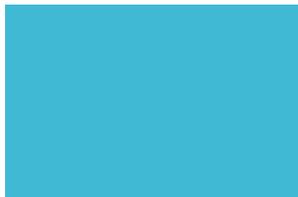
### EQUIPMENT

#### B. GENERATOR SETS (GENSETS)

Gensets are important tools used to power the reefer containers, thereby maintaining the set temperature during rail or road transportation.

The majority of the gensets are of the clip-on type, meaning that the gensets are clipped on to the upper front of the reefer container. The tank capacity ranges from 150 litres (39 gallons) up to 455 litres (120 gallons), equal to a running time from 36 hours to 5 days. Maersk Line also operates underslung gensets, which are mounted under the chassis. The use of gensets is subject to an additional charge.

For further information, simply contact your local Maersk Line representative.



### CONTAINER DIMENSIONS

UNITS PREFIX: MAEU, MWCU, APMU, MSAU

Standard Containers	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range °C (°F)	Air exchange (cbm/hour)
	mm feet/inches		mm feet/inches			kg lb			m <sup>3</sup> cubic feet				
Size Feet/inches	Width	Height	Length	Width	Height to load line	Max. gross	Tare	Max. payload	Capacity to load line				
<b>20' standard</b> 20' x 8' x 8' 6"	2,290 7' 6" 1/8	2,212 7' 3" 1/16	5,451 17' 10" 9/16	2,290 7' 6" 1/8	2,167 7' 1" 1/4	30,480 67,194	2,990 6,591	27,490 60,603	27 955	Steel	Yes	-26 to +30 (-15 to +86)	0 to 75
<b>40' standard</b> 40' x 8' x 8' 6"	2,286 7' 6"	2,238 7' 4" 1/16	11,577 37' 11" 3/4	2,294 7' 6" 1/4	2,110 6' 11" 1/16	32,500 71,648	3,900 8,597	28,600 63,050	56 1,979	Alu	Yes	-26 to +30 (-15 to +86)	0 to 75
<b>40' High Cube</b> 40' x 8' x 9' 6"	2,276 7' 5" 9	2,471 8' 1" 4	11,578 37' 11" 13/16	2,280 7' 5" 12	2,425 7' 11" 1/16	34,000 74,954	4,400 9,700	29,600 65,257	64 2,250	Steel	Yes	-26 to +30 (-15 to +86)	0 to 75
<b>40' High Cube</b> 40' x 8' x 9' 6"	2,290 7' 6" 1/8	2,535 8' 3" 3/4	11,577 37' 11" 3/4	2,294 7' 6" 1/4	2,409 7' 10" 13/16	32,500 71,648	4,150 9,148	28,350 62,499	64 2,259	Alu	Yes	-26 to +29 (-15 to +84)	0 to 75

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.

## SPECIALISED EQUIPMENT

### C. CONTROLLED ATMOSPHERE (CA) CONTAINERS

#### STAR FRESH

The StarFresh Controlled Atmosphere is a recently developed application of advanced technology for the protection of even the most delicate fruits during shipping. It is a highly efficient alternative to standard methods currently employed.

StarFresh is a fully integrated system, meaning that all controllers and sensors are built into the refrigeration unit itself, thereby avoiding the usual necessity of having to sacrifice valuable cargo space.

Maersk Line has actively participated in the construction and testing of this system. The greatest priority throughout the process has been to create a system that is not only user-friendly, but is also capable of providing a high degree of flexibility. Given the success of this system, Maersk Line is able to provide CA shipments from almost any desired location to anywhere in the world.

#### BENEFITS FROM USING CONTROLLED ATMOSPHERE

Maersk Line's advanced refrigeration technology, combined with the CA systems, will ensure:

- a substantial increase in the range of commodities suitable for sea transportation, thus eliminating the need for expensive air freight
- an important extension of the distribution radius
- the opening of new markets
- a considerable increase in shelf life
- a decrease in product loss caused by deterioration
- higher prices due to enhanced quality
- time allowed for longer tree ripening

#### COMMODITIES BENEFITING FROM THIS SERVICE:

Apples, asparagus, avocados, bananas, blueberries, broccoli, cherries, grapes, kiwifruit, lettuce, lychees, mangoes, nectarines, peaches, pears, pineapples, plums, snow peas and stone fruits among others.

It should be emphasised, however, that problems related to poor product quality, poor post-harvest procedures and incorrect pre-treatment of the products cannot be solved by the use of controlled atmosphere.



## CONTAINER DIMENSIONS

UNITS PREFIX: MCAU

StarFresh	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range °C (°F)	Air exchange (cbm/hour)
	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	kg lb	kg lb	kg lb	m <sup>3</sup> cubic feet				
Size Feet/inches	Width	Height	Length	Width	Height to load line	Max. gross	Tare	Max. payload	Capacity to load line				
40' High StarFresh 40' x 8' x 9' 6"	2,278 7' 5" 11/16	2,473 8' 1" 5/16	11,578 37' 11" 13/16	2,280 7' 5" 3/4	2,425 7' 11" 7/16	34,000 74,954	4,200 9,259	29,800 65,695	64 2,261	Steel	Yes	-26 to +30 (-15 to +86)	0 to 75

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.

## > EQUIPPED WITH EXPERTISE (cont)

### SPECIALISED EQUIPMENT

#### D. CONTROLLED ATMOSPHERE PLUS HIGH HUMIDITY

##### STARFRESH PLUS

Maersk Line has the optimal solution for products that require both atmosphere and humidity control at the same time. It is called StarFresh Plus.

When you consider all the new opportunities StarFresh Plus can provide, it certainly gives food for thought – for new products and potential new markets for you.

##### BENEFITS OF STARFRESH PLUS:

- a substantial increase in the range of commodities suitable for sea transportation, hence eliminating the necessity of expensive airfreight
- higher prices due to improved quality

- weight, texture and physical appearance of the products are maintained due to the optimal storage conditions
- shelf life is extended allowing your products to reach more distant markets even by sea
- an important extension of the scope of distribution
- the opportunity to enter new markets
- the reduction of product loss caused by deterioration
- the possibility of allowing for longer tree ripening

##### COMMODITIES BENEFITING FROM THIS SERVICE:

Asparagus.

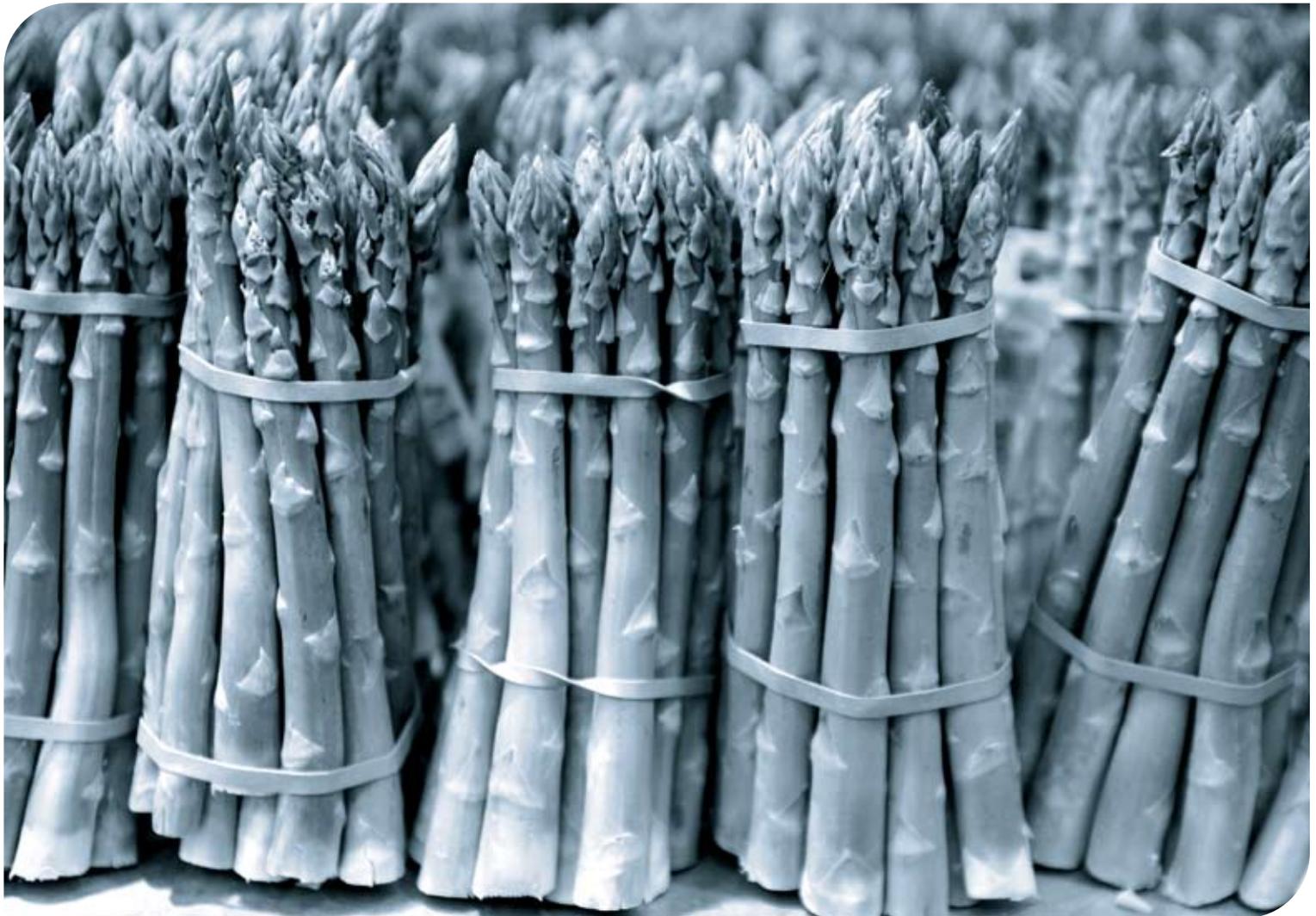


### CONTAINER DIMENSIONS

UNITS PREFIX: MCHU

StarFresh Plus	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range °C (°F)	Air exchange (cbm/hour)
	mm feet/inches		mm feet/inches			kg lb			m <sup>3</sup> cubic feet				
Size Feet/inches	Width	Height	Length	Width	Height to load line	Max. gross	Tare	Max. payload	Capacity to load line				
40' High StarFresh Plus 40' x 8' x 9' 6"	2,290 7' 6" 1/8	2,490 8' 2"	11,570 37' 11" 1/2	2,300 7' 6" 1/2	2,430 7' 11" 5/8	32,500 71,650	4,150 9,148	28,350 62,502	64 2,260	Alu	Yes, can also increase humidity levels up to 95 pct.	-26 to +30 (-15 to +86)	0 to 75
40' High StarFresh Plus 40' x 8' x 9' 6"	2,278 7' 5" 11/16	2,473 8' 1" 5/16	11,578 37' 11" 13/16	2,280 7' 5" 3/4	2,425 7' 11" 7/16	34,000 74,954	4,200 9,259	29,800 65,695	64 2,261	Steel		-26 to +30 (-15 to +86)	0 to 75

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.



## > EQUIPPED WITH EXPERTISE (cont)

### SPECIALISED EQUIPMENT

#### E. MAGNUM

##### MAGNUM CONTAINERS

Designed with the seafood industry in mind, Maersk Line Magnum containers represent some of the latest thinking in reefer container technology. Built to maintain a set point of -35°C (-31°F) in an ambient environment of up to 50°C (122°F), Magnum has one of the highest cooling capacities of any reefer container. In addition, its simple compressor design and piping system make it remarkably reliable.

##### BENEFITS OF MAGNUM

- Extends product shelf life, especially of high fat content fish like salmon and mackerel (lower temperatures preserve seafood longer)
- Maintains product quality. The lower temperature reduces protein and fat changes, as well as dehydration and virtually eliminates bacteria activity
- Preserves product texture, especially of frozen vegetables and ice-cream, because it reduces recrystallisation

##### COMMODITIES BENEFITING FROM THIS SERVICE:

Herring, ice cream, mackerel, mullet, oyster, prawns, salmon, sardines, shrimp, squid, swordfish and trout, among others.



### CONTAINER DIMENSIONS

UNITS PREFIX: MWMU

Magnum	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range °C (°F)	Air exchange (cbm/hour)
	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	kg lb	kg lb	kg lb	m <sup>3</sup> cubic feet				
Size Feet/inches	Width	Height	Length	Width	Height to load line	Max. gross	Tare	Max. payload	Capacity to load line				
40' High Magnum 40' x 8' x 9' 6"	2,276 7' 5" 3/5	2,471 8' 1" 7/25	11,578 37' 11" 13/16	2,280 7' 5" 3/4	2,450 8' 0" 1/2	34,000 74,954	4,275 9,424	29,725 65,532	64 2,261	Steel	No	-35 to +30 (-31 to +86)	0 to 75

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.



## > EQUIPPED WITH EXPERTISE (cont)

### SPECIALISED EQUIPMENT

#### F. STARVENT CONTAINERS

##### STARVENT

StarVent is another example of Maersk Line's specialised transport solutions. Some commodities benefit from a high level of ventilation. To ensure such ventilation, we have developed an insulated container with two fan motors. These fan motors can run at low or high speeds and will generate ventilation of 2000 cbm/hour at low speed, and 4000 cbm/hour at high speed.

##### BENEFITS OF USING STARVENT CONTAINERS:

- the products stay firm and dry, avoiding any extraneous taste or smell despite high ambient temperatures
- the weight, texture and physical appearance of the products are maintained due to the ideal storage conditions

##### COMMODITIES BENEFITING FROM THIS SERVICE:

Onions, potatoes, dried garlic, coffee beans, nuts, dried chilies and cocoa beans.

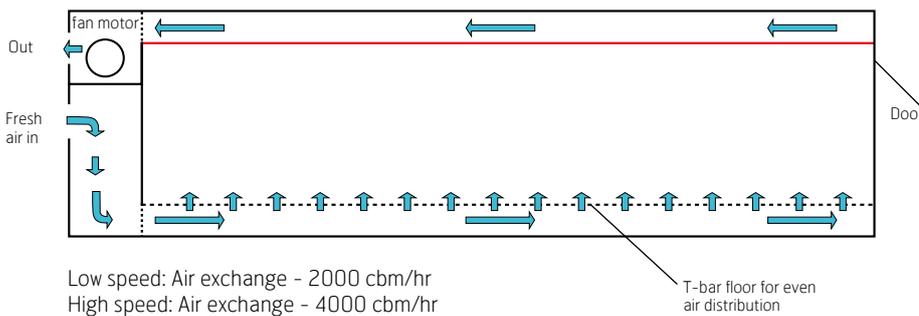


Fig. 10 Air circulation inside a StarVent container



### CONTAINER DIMENSIONS

UNITS PREFIX: MSKU, MSVU

StarVent	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range °C (°F)	Air exchange (cbm/hour)
	mm	feet/inches	mm	feet/inches	mm	kg	lb	m <sup>3</sup>	cubic feet				
<b>Size</b> Feet/inches	<b>Width</b>	<b>Height</b>	<b>Length</b>	<b>Width</b>	<b>Height to load line</b>	<b>Max. gross</b>	<b>Tare</b>	<b>Max. payload</b>	<b>Capacity to load line</b>				
<b>40' High StarVent</b> 40' x 8' x 9' 6"	2,286 7' 6"	2,454 8' 0" 9/16	11,561 37' 11" 1/8	2,286 7' 6"	2,391 7' 10" 1/8	30,480 67,194	4,720 10,405	25,760 56,789	63 2,232	Alu	No	No cooling capacity	Low 2000 cbm/hr High 4000 cbm/hr
<b>40' High StarVent</b> 40' x 8' x 9' 6"	2,294 7' 6" 4	2,556 8' 4" 9	11,584 38' 1	2,294 7' 6" 4	2,432 7' 11" 3/4	34,000 74,954	4,550 10,030	29,450 64,624	64 2,286	Steel	No	No cooling capacity	Low 2000 cbm/hr High 4000 cbm/hr

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.

## SPECIALISED EQUIPMENT

### G. SORTIE CONTAINERS

#### SORTIE CONTAINERS

“Sorties” are an additional, very practical innovation from Maersk Line. Sorties are reefer containers that have been modified to serve as a sorting area for frozen products – mainly fish. The cargo is loaded into the Sortie through a roof hatch directly from the reefer vessel or fishing vessel. This is to minimise exposure to ambient temperatures during the sorting and/or stuffing operation.

Holes have then been made in the side walls of the container, where up to five reefer containers can be connected using an airtight membrane. This prevents any ambient air from entering the containers and facilitates full refrigeration of the whole compartment during the entire operation.

#### BENEFITS OF USING SORTIE CONTAINERS:

- time spent on the discharging (sorting) operation is reduced
- the fishing vessel’s port expenses are reduced
- cargo exposure to ambient temperature is minimised

#### COMMODITIES BENEFITING FROM THIS SERVICE:

Frozen fish and other frozen commodities that need to be sorted prior to stuffing into the container.

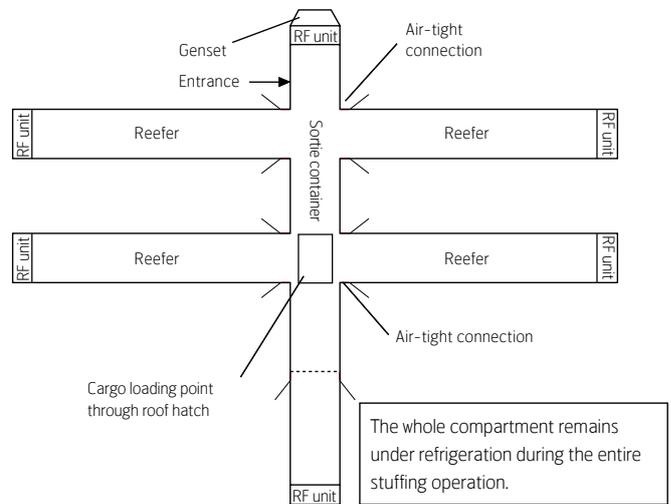


Fig. 11 Sortie operation schemer

Sortie	Door dimensions		Door dimensions		Weight	Material	Set temperature range °C (°F)
	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches			
40' High Sortie 40' x 8' x 9' 6"	2,294 7' 6" 1/4	2,235 7' 3" 15/16	11,628 38' 1" 3/4	2,286 7' 6"	4,400 9,700	Alu	-20 to +20 (-4 to +69)

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.

## > EQUIPPED WITH EXPERTISE (cont)

### SPECIALISED EQUIPMENT

#### H. SUPER FREEZER AND STUFFIE

##### SUPER FREEZER CONTAINERS

Certain types of products require transport at ultra-low temperatures. Maersk Line has developed a refrigerated container specifically for such products. The Super Freezer container is able to maintain temperatures as low as  $-60^{\circ}\text{C}$  ( $-76^{\circ}\text{F}$ ), which makes it an ideal solution for carriage of frozen tuna into the Japanese sushi and sashimi market. The cargo can either be loaded processed, as fillets, or as whole fish. By using a special Stuffie container, stuffings can be performed directly from the fishing vessel. This ensures that the cargo exposure to temperature variations during the loading operation is kept to an absolute minimum.

##### BENEFITS OF USING THE SUPER FREEZER CONTAINER:

- global coverage
- limited re-handling of the products to ensure optimal quality at destination
- an unbroken cold chain to the final place of delivery
- fast delivery, since the products can be shipped in smaller quantities – which also yields a higher market price and improved cash flow
- departures and arrivals with fixed schedules from ports in the Maersk Line network enable a more reliable, regular supply
- reduced cold-storage costs
- extended season because less cargo is required to make a shipment



### CONTAINER DIMENSIONS

UNITS PREFIX: MSFU856

Super Freezer	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range $^{\circ}\text{C}$ ( $^{\circ}\text{F}$ )	Air exchange (cbm/hour)
	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	kg lb	kg lb	kg lb	m <sup>3</sup> cubic feet				
Size Feet/inches	Width	Height	Length	Width	Height to load line	Max. gross	Tare	Max. payload	Capacity to load line				
40' High Super Freezer 40'x8'x9'6"	2,278 7' 5" 11/16	2,473 8' 1" 5/16	11,578 37' 11" 13/16	2,188 7' 2" 1/8	2,380 7' 9" 11/16	34,000	4,500 9,920	29,500 65,034	60.3 2,129.2	Alu	No	-60 to -10 (-76 to +14)	0



### CONTAINER DIMENSIONS

UNITS PREFIX: MSFU859

Stuffie	Door dimensions				Weight		Set temperature range $^{\circ}\text{C}$ ( $^{\circ}\text{F}$ )
	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	kg lb	kg lb	
Size Feet/inches	Width	Height	Length	Width	Tare	Material	
40' High Stuffie 40' x 8' x 9' 6"	2,286 7' 6"	2,454 8' 0" 9/16	11,561 37' 11" 1/8	2,286 7' 6"	4,720 10,405	Alu	-20 to +20 (-4 to +69)

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.

#### COMMODITIES BENEFITING FROM THIS SERVICE:

Deep-frozen commodities known to benefit from being transported at  $-60^{\circ}\text{C}$  include: tuna, sea urchins, swordfish, food cultures, pharmaceuticals, among others.

#### STUFFIE CONTAINERS

In short, the “Stuffie” helps enable the continuous refrigeration of cargo. Stuffie containers are normally used in order to stuff frozen tuna (or other kinds of fish being discharged from a fishing vessel) into our Super Freezer containers. The Stuffie is connected to the Super Freezer and insulated with an airtight membrane to avoid ambient air entering the Super Freezer container. The cargo is then loaded into the Stuffie through the roof hatch, sorted and transferred into the Super Freezer.

#### BENEFIT OF USING THE STUFFIE CONTAINER:

- cargo exposure to ambient temperature is minimised

#### COMMODITIES BENEFITING FROM THIS SERVICE:

Frozen tuna or other kinds of frozen fish that needs to be discharged directly from a fishing vessel into a Super Freezer or an ordinary reefer unit.



# > EQUIPPED WITH EXPERTISE (cont)

## SPECIALISED EQUIPMENT

### I. BLAST FREEZER UNITS

#### BLAST FREEZERS

Blast Freezers provide a portable, flexible and economical solution to freezing fresh seafood products. Maersk Line has developed this special unit, capable of freezing seven tons of fresh fish from a maximum temperature of 30°C (86°F) down to -60°C (-76°F). This can be done within 24 hours at an ambient temperature of maximum 35°C (95°F).

The size of the Blast Freezer unit (the same as a 40' High Cube reefer) allows easy positioning to areas where freezing capabilities are required. After freezing the cargo down to the required ultra-low temperature, the fish is then transferred into a Super Freezer container for direct delivery to the final destination. A Blast Freezer unit can be delivered with a power pack and an external fuel tank, making the equipment completely self-sustaining.

#### BENEFITS OF LEASING THE BLAST FREEZER UNITS:

- portable freezing unit
- can be transported to any of Maersk Line's worldwide destinations
- flexible and economical
- reduced risk, exposure and costs
- hi-tech standards
- available for long-term and short-term leasing
- used in conjunction with Maersk Line's Super Freezers, the result is a complete freezing/transport package

#### COMMODITIES BENEFITING FROM THIS SERVICE:

Fresh tuna and other kinds of fish that need to be frozen down to temperatures as low as -60°C.

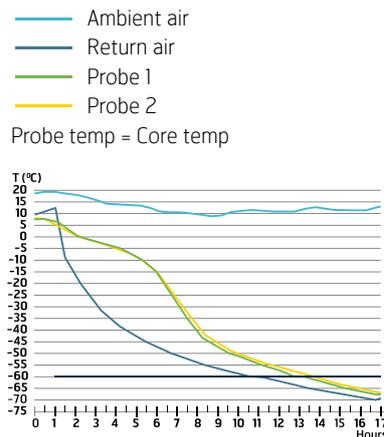


Fig. 12  
Blast Freezer temperature log:  
5.4 ton load.  
180 tuna fish.  
30 kg avg/fish



## CONTAINER DIMENSIONS

UNITS PREFIX: MBFU

Blast Freezer	Door dimensions		Internal dimensions			Weight			Volume	Material	Humidity control	Set temperature range °C (°F)	Air exchange (cbm/hour)
	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	mm feet/inches	kg lb	kg lb	kg lb	m <sup>3</sup> cubic feet				
Size Feet/inches	Width	Height	Length	Width	Height to load line	Max. gross	Tare	Max. payload	Capacity to load line				
40' High Blas Freezer 40'x8'x9'6"	2,276 7' 5" 9	2,471 8' 1" 4	11,578 37' 11" 13	2,280 7' 5" 12	2,425 7' 11" 7/16	N/A N/A	12,200 26,896	N/A	N/A	Steel	No	-60 to -20 (-76 to -4)	



**Fuel tank**  
20'x8'x8'6" External dimension same as a 20' container 20' x 8" x 8' 6"

**Power pack**  
20'x8'x8'6" External dimension same as a 20' container 20' x 8" x 8' 6"

Dimensions vary within container series. For dimensions of a specific unit, please contact your nearest Maersk Line agent.



**COMMODITIES**
**Fresh fruit, plants and vegetables**

Commodity	Recommended temperature		Relative humidity	Max. air exchange	Approx. storage	Humidity control
	°C	°F				
Apples	-1 to +4	+30 to +40	90	60	90-240	OFF
Apricots	0	+32	90	15	7-14	OFF
Avocados (California)	+3 to +4	+38 to +40	90	40	14-28	OFF
Avocados (Tropical)	+8 to +13	+46 to +55	90	60	14-28	OFF
Bananas	+14	+57	90	30	14-28	OFF
Blueberries	-1 to 0	+31 to +32	90	0	10-14	OFF
Cape Gooseberries (Physalis)	+12 to +15	+54 to +59	80	15	30-60	OFF
Carambola (Star Fruit)	+5 to +7	+41 to +45	90	20	21	OFF
Cherimoya	+12 to +14	+54 to +57	90	30	14-21	OFF
Cherries (Sweet)	-1 to 0	+30 to +32	90	0	14-21	OFF
Chestnuts	0 to +4	+32 to +39	90	15	120-180	OFF
Clementines	0 to +4	+32 to +39	90	15	7-50	OFF
Cranberries	+3	+37	90	0	60-120	OFF
Dates	0	+32	85-90	0	30-60	OFF
Durians	+3 to +4	+38 to +40	90	15	40-50	OFF
Feijoas	+8 to +10	+46 to +50	90	20	14-21	OFF
Figs	0	+32	90	0	7-14	OFF
Grapefruits	Variable	Variable	90	15	28-120	OFF
Grapes	-1 to 0	+31 to +32	90	15	150	OFF
Guavas	+8 to +10	+46 to +50	90	30	21	OFF
Jackfruits	+13	+55	90	0	7-21	OFF
Kiwifruit	0	+32	90	20	60-90	OFF
Kumquats	+10	+50	90	15	28	OFF
Lemons (Depending On Variety)	Variable	Variable	90	15	30-120	OFF
Limes	+8 to +10	+46 to +50	90	15	42-56	OFF
Loquats	0	+32	90	15	14-21	OFF
Lychees	+2 to +6	+36 to +43	90	15	20-35	OFF
Mangoes (Depending On Variety)	+10 to +14	+50 to +57	90	30	14-21	OFF
Mangosteen	+4 to +6	+39 to +43	90	15	20-35	OFF
Manioc	0 to +2	+32 to +36	90	0	150-180	OFF
Melons (Cantaloupe)	+3 to +5	+37 to +41	90	30	10-14	OFF
Melons (Honey Melon)	+10 to +14	+50 to +57	90	30	16-20	OFF
Melons (Watermelon)	+5 to +6	+41 to +43	85	30	16-20	OFF
Oranges (Depending On The Variety)	+4 to +12	+39 to +54	90	15	35-90	OFF
Papayas	+10	+50	90	30	14-21	OFF
Passion Fruit	+7 to +10	+45 to +50	90	30	21-28	OFF
Peaches/Nectarines	0	+32	90	15	14	OFF
Pears	0	+32	90	15	60-180	OFF
Persimmon (Kaki)	0	+32	90	15	60-90	OFF

**COMMODITIES**
**Fresh fruit, plants and vegetables**

Commodity	Recommended temperature		Relative humidity	Max. air exchange	Approx. storage	Humidity control
	°C	°F				
Pineapples	+8 to +12	+46 to +54	90	15	14-21	OFF
Plantains	+9	+48	90	20	10-15	OFF
Plums	0	+32	90	15	20	OFF
Pomegranates	0 to +2	+32 to +36	90	15	60	OFF
Prickly Pears	+5	+41	90	15	21-28	OFF
Rambutans	+10	+50	90	10	7-14	OFF
Strawberries	0	+32	90	15	6-10	OFF
Bonsai						
Cut Flowers						
Ferns	Special requirements apply, please contact your local Maersk Line office for details.					
Flower Bulbs						
Foliage						
Plants (Potted)						
Yucca Palm						
Artichokes (Globe)	0	+32	90	0	15-20	OFF
Artichokes (Jerusalem)	0	+32	90	15	90-150	OFF
Asparagus	0 to +1	+32 to +33	90	20	14-21	OFF
Aubergine	+8 to +10	+46 to +50	90	15	10-14	OFF
Baby Corn	0	+32	90	15	4-8	OFF
Bitter Gourd	+8 to +10	+46 to +50	90	0	14-21	OFF
Broccoli	0 to +1	+32 to +33	90	20	7-14	OFF
Brussels Sprout	-1 to 0	+30 to +32	90	20	15-20	OFF
Cabbage (Chinese)	0 to +4	+32 to +39	90	20	24	OFF
Cabbage (Savoy)	-2 to 0	+28 to +32	90	20	120	OFF
Cabbage (White)	0	+32	90	20	200	OFF
Carrots	0	+32	90	20	180	OFF
Cauliflowers	0	+32	90	20	20-30	OFF
Celeriac	0	+32	90	0	160	OFF
Celery	0	+32	90	20	28	OFF
Chicory	0	+32	90	15	24	OFF
Chili	+8 to +10	+46 to +50	90	20	14-21	OFF

**COMMODITIES**
**Fresh fruit, plants and vegetables**

Commodity	Recommended temperature		Relative humidity	Max. air exchange	Approx. storage	Humidity control
	°C	°F				
Courgette (Zucchini)	+7 to +10	+45 to +50	90	0	14-21	OFF
Cucumbers	+13	+55	90	15	10	OFF
Endives/Escaroles	0	+32	90	20	14	OFF
Fennels	0	+32	90	0	14-28	OFF
Garlic	0	+32	70	15	180	ON
Ginger	+13	+55	75	15	30-90	ON
Horse Radishes	-1 to 0	+30 to +32	90	0	300-360	OFF
Leeks	-1 to 0	+30 to +32	90	15	40	OFF
Lettuce (Butterhead)	0 to +1	+32 to +33	90	20	12	OFF
Lettuce (Iceberg)	0	+32	90	20	14	OFF
Okra/Lady Finger/Gombo	+8 to +10	+46 to +50	90	0	7-10	OFF
Onions (Dry)	0 to +4	+32 to +39	75	15	270	ON
Pak Chois	0	+32	90	0	30-40	OFF
Parsnips	0	+32	90	0	60-180	OFF
Peas	0	+32	90	0	7	OFF
Peppers (Capsicum)	+7 to +10	+45 to +50	90	15	14	OFF
Potatoes	+4 to +6	+39 to +43	90	15	240	OFF
Potatoes (Sweet)	+12 to +16	+54 to +61	80	0	90-180	OFF
Pumpkins	+7 to +10	+45 to +50	75-85	0	60-90	OFF
Radishes	0	+32	90	15	5-14	OFF
Red Beet / Beet Root	+3 to +4	+37 to +39	90	0	180	OFF
Rhubarb	0 to +4	+32 to +39	90	0	20	OFF
Rooted Turnip	0	+32	90	0	120-180	OFF
Scorzoner	0	+32	90	0	120	OFF
Sugar Peas	0	+32	90	15	7-14	OFF
Sweet Corn	0	+32	90	15	4-8	OFF
Taro	+11 to +13	+52 to +55	90	0	150	OFF
Tomatoes (Treetomato-Tamarillo)	+3 to +8	+37 to +46	90	30	21	OFF
Tomatoes (Depending On Variety)	+8 to +12	+46 to +54	80	30	14	ON
Tomatoes (Long Life - Daniella)	+6 to +10	+43 to +50	65	15	35	ON
Turnips	0 to +4	+32 to +39	90	0	10-14	OFF
Yams	+16 to +20	+54 to +68	65	0	50-120	ON

If specific settings are required, please contact your local Maersk Line office.

## COMMODITIES

## Dairy, fish, meat and other commodities

Commodity	Recommended temperature	Recommended temperature
	°C	°F
Butter	0 to +2	+32 to +35
Butter (Frozen)	-20 or colder	-4 or colder
Cheese	0 to +4	+32 to +39
Cheese (Fresh)	0 to +2	+32 to +35
Ice Cream	-26 or colder	-15 or colder
Milk (Cultured Products)	0	+32
Fish (Chilled)	-1 to 0	+30 to +32
Fish (Deep Frozen )	-20 or colder	-4 or colder
Fish Products (Lightly Preserved)	+1	+34
Fish Products (Semi Preserved)	+2	+35
Shellfish (Deep Frozen)	-20 or colder	-4 or colder
Meat (Deep Frozen)	-20 or colder	-4 or colder
Meat (Fresh, Chilled)	-1 to 0	+30 to +32
Meat (Manufactured)	-1	+30
Meat Products (Chilled)	-2	+28
Poultry (Chilled)	-1	+30
Poultry (Deep Frozen)	-20 or colder	-4 or colder
Chocolate	+10 to +18	+50 to +65
Eggs	-2	+28
Individually Quick Frozen Products (IQF)	-20 or colder	-4 or colder
Juice and Concentrate (Deep Frozen)	-20 or colder	-4 or colder
Margarine	0 to +3	+32 to +37
Vegetables (Deep Frozen )	-20 or colder	-4 or colder
All Other Frozen Foodstuff	-20 or colder	-4 or colder

Frozen and non-respiring products do not require fresh air exchange.

All data in these pages should be used as a guideline and recommendation only for cargo transported in reefer containers. The temperature and shelf life levels stated are dependent on the variety, level of maturity and place of origin of the product.

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