



YOUR  
NUMBER  
**ONE**  
SHIPPING  
PARTNER

# A PARTNERSHIP IN PROTECTING YOUR VALUABLE REEFER CARGO

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# A Commitment to Keeping Your Perishables Fresh

The success of every journey, from origin to destination, hinges on maintaining precise conditions. Fresh goods like fruits and vegetables are in a delicate state from the moment of harvest, while high-value pharmaceuticals require absolute stability. Even a minor deviation from the optimal temperature can cause chilling injury, or a complete loss of product integrity.

According to the Food and Agriculture Organization (FAO), approximately one-third of the food produced for human consumption is lost or wasted each year, straining our planet's resources.

As a leader in the reefer industry, ONE is committed to minimizing these losses. We have created this guide to empower you with the industry's best practices. By working together and following these expert recommendations, we can ensure the safe and successful transport of your cargo, preserving its value and contributing to a more sustainable supply chain.



# Pre-Cooling Best Practices

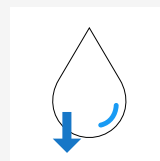
When it comes to refrigerated shipping, how you manage pre-cooling can make all the difference. It's essential to pre-cool the cargo - but pre-cooling the container can actually do more harm than good if not handled correctly.

## Pre-Cooling the Cargo: A Must

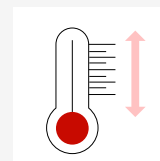
To ensure optimal freshness and product integrity, perishable cargo should always be pre-cooled to the recommended temperature before loading into the reefer container.

Reefer containers are built to maintain a set temperature — not to rapidly cool warm cargo.

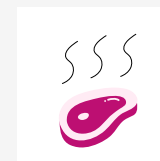
Loading cargo that hasn't been properly pre-cooled can result in:



**Excessive  
Water Loss**



**Temperature  
Imbalance**



**Accelerated  
Spoilage &  
Damage**

Once cargo is pre-cooled correctly, the internal container temperature will stabilize to the set point within a few hours, maintaining the cold chain from the very beginning.

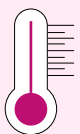


# Pre-Cooling the Container: Avoid in Most Cases



Pre-cooling an empty container can cause problems, especially when loading takes place in an open environment.

## Here's why:



**The temperature difference between the precooled container and warm outside air causes condensation to form inside the container.**



**Moisture can accumulate on cargo surfaces, leading to deformation, dampness, and potential damage.**



**It can also cause ice build up on the evaporator coil, which reduces airflow and slows down the cooling process.**

Unless you're loading cargo directly from a chilled warehouse through a closed tunnel (commonly called a "Cold Tunnel"), avoid pre-cooling the container. The cold tunnel setup prevents humid air from entering, thus avoiding condensation and preserving cargo quality.



# Ensuring Quality from the Start

Your cargo deserves the best, and that starts with the right containers.

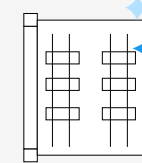
## What is Pre-Trip Inspection (PTI)

A comprehensive quality check to ensure each reefer container is in peak condition.

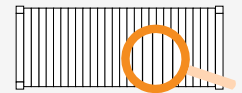
**Our expert teams inspect:**



**The refrigeration unit  
to confirm it runs  
properly at the  
correct settings**



**The cleanliness of  
the container**



**Any structural  
damage that may  
affect cargo safety**

Only containers that pass all checks are approved for customer use, ensuring your cargo gets a clean, well-maintained, and fully operational unit every time. For high-value, highly sensitive cargo such as pharmaceuticals, we go a step further. We apply a dedicated PTI policy, developed from years of experience in handling premium cargo. With Ocean Network Express, you can ship with confidence, knowing your container has passed the highest standards of care, before your journey even begins.

# How Air Circulates in a Reefer Container

Proper air circulation is critical to maintaining a consistent temperature throughout the journey, and protecting your cargo's quality.

In every reefer container, cold air circulates continuously around your cargo to ensure even cooling. This airflow is made possible by T-rails installed along the container floor.

## How It Works:



1. Cold air is blown downwards from the refrigeration unit into the T-rails constructed along the container's floor.
2. The air flows toward the door, rising upward upon reaching the end.
3. It then circulates back over the top of the cargo and returns to the unit — completing a continuous cooling loop.

This flow pattern ensures a stable, uniform temperature inside the container.

## Mind the Red Line\*:

Inside each reefer container, you'll find a red line near the ceiling and door. This is the maximum cargo height limit - exceeding it can obstruct airflow and lead to uneven cooling or temperature loss. Always keep cargo below the red line for optimal performance.



\*Apply to chilled and frozen cargo

# Stowage Best Practices by Cargo Types:

## Chilled Cargo

|                  |                                                            |
|------------------|------------------------------------------------------------|
| Type             | For Fruits, Vegetables and Dairy products                  |
| Stowage Tip      | Remove heat, CO <sub>2</sub> , and moisture (Respiration). |
| Airflow Strategy | Air must flow THROUGH the cargo.                           |
| Stowage Pattern  | Loose Stowage. Leave gaps or align vents.                  |
| Packaging        | Cartons must have vent holes. NO plastic/shrink-wrap.      |
| Floor Loading    | Cover empty floor spaces with cardboard to force air up.   |
| Settings         | Ventilation/Fresh Air Required (Specific to commodity).    |

## Frozen Cargo

|                                                           |
|-----------------------------------------------------------|
| For Meat and Seafood                                      |
| Block heat from entering (Insulation).                    |
| Air must flow AROUND the cargo.                           |
| Block Stowage. Pack tight; no gaps between boxes.         |
| Solid cartons. Corner supports needed for weight.         |
| Ensure floor is evenly loaded and covered.                |
| Ventilation: OFF / Dehumidification: OFF / Drain: CLOSED. |



# Before Loading: Essential Checklist

To ensure optimal performance and cargo protection, follow these important steps before loading your reefer container:

**Inspect the reefer container to ensure equipment is in good condition**

**Check and clean T-floor to ensure air channel is clear from the panel to the door**

**Pre-treat the products**

**Pre-cool the products to carriage temperature range**

Note: hot stuffing may damage both the equipment and cargo itself

**Do not pre-cool the container, except when goods are being loaded at a cold facility where there is a sealed connection to the container loading bay**

**Container/Genset should not be turned on while doors are open and cargo is being loaded**

## **Reminder:**

While reefer cargo is often classified by general storage temperature (e.g., chilled or frozen), the specific temperature set-point depends on the exact commodity type. Always refer to the cargo-specific handling guidelines





## Booking Checklist

1. Specify origin and destination. ☐
2. Provide a detailed description of the product being shipped, including commodity name, quantity, weight, cubic measurement, and type of packaging like boxes, drums and pallets. ☐
3. Specify preferred equipment size: 20' or 40' HC. ☐
4. Highlight preferred temperature settings in °F or °C. ☐
5. Specify fresh-air exchange requirements in CFM or CMH. ☐
6. Indicate modified or controlled atmosphere requirement: Gas composition (O<sub>2</sub> and CO<sub>2</sub> in %), type of scrubber, if required. ☐
7. Indicate shipment availability date at origin and required delivery date at destination. ☐
8. Specify special handling requirements (for example, Genset, dehumidification percentage level and Cold Treatment). ☐
9. Provide any documentation requirement, including legal requirement. ☐
10. Inform booking office if container pre-cooling is required. ☐

