

Shipment Quality Requirements for Refrigerated Products



RELIABLE TRANSPORTATION OF FOOD AND BEVERAGES

Union Pacific is dedicated to providing reliable transportation of refrigerated food and beverages. Our state-of-the-art refrigerated rail car fleet is designed to transport your freight safely from origin to destination while maintaining a consistent temperature throughout its journey.

To ensure your product is loaded properly and arrives at its final destination fresh and damage free, we need your help. It is critical shippers adhere to the following loading and shipping requirements established for refrigerated products.

BEFORE YOU LOAD

Pre-Tripping Requirements

The rail car temperature-control equipment is not intended to either increase or decrease the product temperature being transported. It is only designed to “maintain” a requested temperature. Product being loaded should be at the intended transit set-point temperature (in other words, the intended transit temperature) prior to loading.

For additional information regarding general terms and conditions for Union Pacific shipments, please reference the tariff document, [UP 1000](#).

Pre-Loading Checklist

To ensure your product's temperature is maintained in transit from origin to destination, we recommend taking the following actions before loading the refrigerated rail car:

Check for Damage

- ✓ Inspect rail car prior to loading. Check for any overall damage to the equipment.
- ✓ Check functionality of important rail car components, including the plug-door gasket, plenum and corner-floor drain (see photo below).

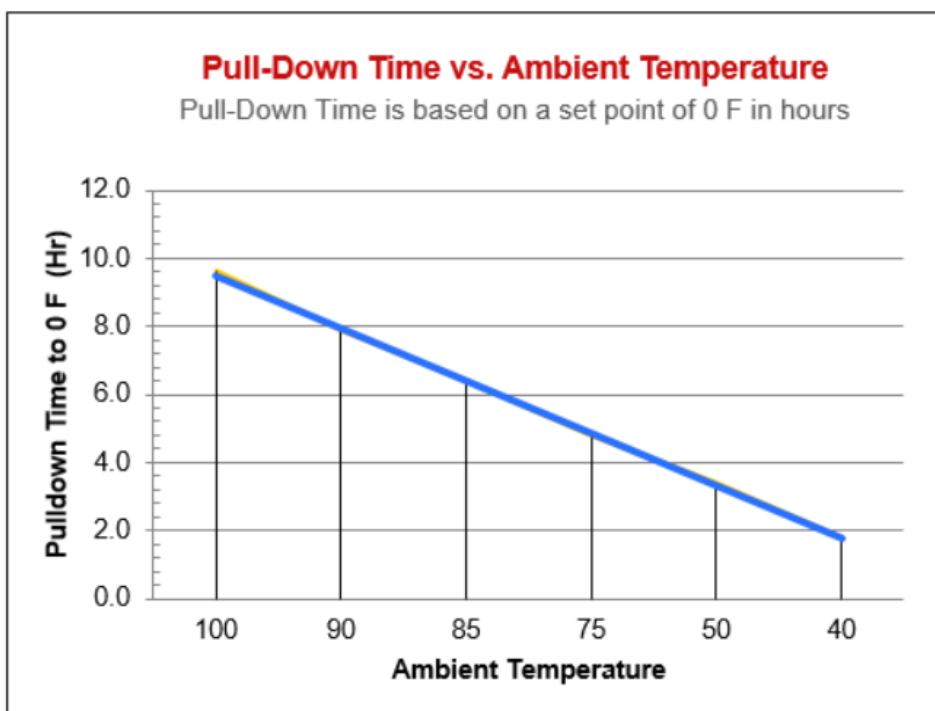


Ensure drain cap is connected to drain pipe as shown above.

- ✓ Reject any damaged rail cars. For additional information related to damaged rail cars, visit our [Rail Equipment web page](https://www.up.com/customers/all/equipment/). (<https://www.up.com/customers/all/equipment/>)

Keep It Cool

- ✓ Cool rail car to within plus or minus 5 degrees of set-point temperature.
- ✓ Shut off refrigeration unit while doors are open during loading and unloading to protect the rail equipment and product.
- ✓ Depending on your loading procedures, allow 1-4 hours for loading the rail car to protect the integrity of the product being shipped.
- ✓ Ensure there is a door curtain or a proper seal between the loading dock and rail car.
- ✓ Load during cooler times during the day (early morning, evening and nighttime).
- ✓ For additional information on controlling the shipment temperature, see [UP 1000](#).



Data based on empty ARMN 110 series cars. Note other variables, such as humidity, wind speed, etc., could affect the pull-down time.

Educate Employees

- ✓ Make sure your staff is trained on loading and unloading requirements, in addition to proper operation of forklifts/length of forks.
- ✓ To prevent damage to unit floors during loading and unloading, make sure forklift operators are restricted to 25,000 gross pounds per load (payload plus weight of the forklift). Advise loaders and unloaders to avoid damaging the side walls of the rail car.

Pre-Loading Documentation

Prior to loading your shipment, it is important to make note of the following items in your preloading shipment documents.

- Ambient temperature
- Pulp temperature
- Loading dock temperature
- Photos of loading the rail car and the rail car doorway (at origin and destination)

LOADING

Intellisets

After pre-cooling or pre-heating the unit, verify it is running in the correct Intellisets setting. These settings were developed based upon industry practices and guidelines for different commodities to allow for proper temperature setting, air flow and return air. It is important to follow the Intellisets setting guidelines to ensure proper refrigeration of your product.



APX Operator's
Manual.pdf



Vector Operator's
Manual.pdf

Unit On/Off Status

Once the set-point temperature is established, loading can begin. During loading and whenever the rail car door is open, the refrigeration unit must be turned off to protect the freight from humidity-related freezing, in addition to preventing overworking the refrigerated rail car.

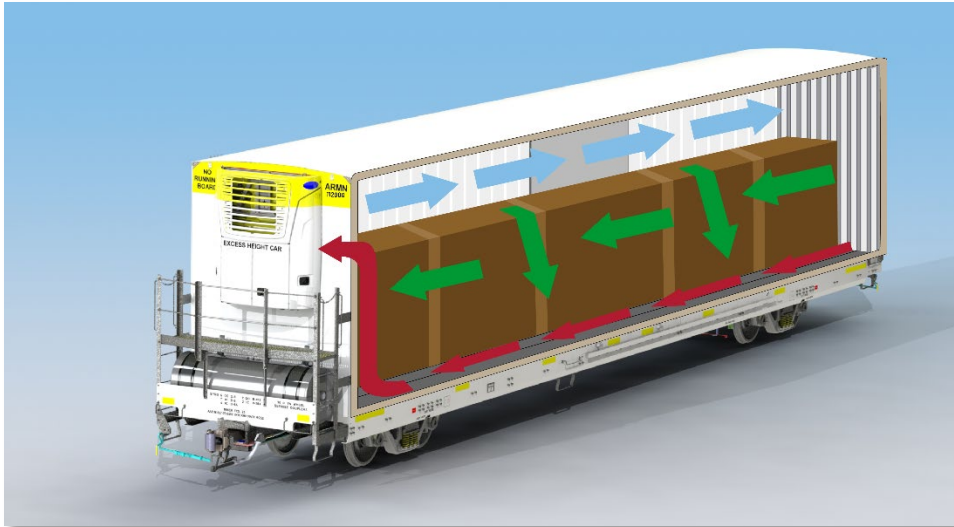
Product Temperature

It is the shipper's responsibility to monitor and maintain the product's temperature at the time of and during loading. The temperature should not exceed five degrees difference from the product's core temperature. Prior to loading, it is recommended to check the temperature of the product. If the product is not at the set-point temperature, do not load until the required temperature is restored.

Maximizing Air Flow and Unit Performance

Please refer to the following requirements for maximizing air flow and unit performance.

- Upon inspection prior to loading, reject any refrigerated rail cars that have major damage to ceiling panels and/or side walls.
- Product should be loaded at a consistent height throughout the length of the rail car.
- Do not stack the ends of the car higher than the doorway.
- Do not load within 14" of ceiling panels (see photo below).
- When possible, chimney stacks should be created through the length of the car to enhance vertical air flow.
- Do not use slip sheets or any other device that will block vertical air flow.



Optimal air flow throughout a refrigerated rail car

Dimensional Restrictions

When loading refrigerated rail cars with an inside height greater than 9' 6," such as UP's ARMN 110XXX and ARMN 111XXX cars, shippers must load below the stenciled maximum load height line of 11' 8" (see photo provided). If loading above this height, the combined center of gravity for the load must be calculated to ensure the load does not exceed a combined center of gravity higher than 98" from the top of rail.



Sealing the Car

Seal rail car with barrier seals rather than indicative seals. Use cable seals with a minimum diameter of 1/8" or bolt seals. Utilize rail car's high security hasp, if available, as an additional security measure.

UNLOADING

Unload rail car within 24 hours upon arrival at destination. Consignees and receivers need to clean and remove any shipping debris or dunnage from the rail car prior to empty release.

ADDITIONAL RESOURCES

For more information, please refer to the following websites:

- Union Pacific Tariff 1000 – General Terms and Conditions:
<http://c02.my.uprr.com/wtp/pricedocs/UP1000BOOK.pdf>
- U.S. Department of Agriculture (USDA):
<https://www.ams.usda.gov/sites/default/files/media/Official%20Inventory%20of%20FV%20Inspection%20Aids.pdf>
- Association of American Railroads (AAR):
<http://www.aar.com/standards/damage-prevention.html>