



## Make your cargo feel good

**Did you know that too much fresh air can actually harm fresh produce, like pumpkins, onions and seed potatoes during transportation?**

Ventilation is often confused with air circulation. But while ventilation means exchange of ambient air into the container via vents, circulation is the airflow within the container and through and/or around the cargo. The main purpose of air circulation is to achieve the proper temperature distribution within the container. It is enabled by the reefer machinery, especially the fan motors and fans, and can be influenced by the air permeability of the packaging materials and stuffing methods.

Consequently, high ventilation does not result in high air circulation around the cargo. On the contrary, too much fresh air puts a burden on the reefer machinery as additional energy is necessary to bring the temperature and relative humidity of the fresh air to the set point level. This effect is even more negative with activated dehumidification. Furthermore, additional fresh air leads to faster icing of the evaporator coils resulting into more defrosts as a consequence.

### Advantages of using the right ventilation

- ✓ tailoring transport conditions to the needs of your cargo
- ✓ quickly reaching the temperature and relative humidity set points
- ✓ less ice formation on the evaporator coils resulting into less defrosts
- ✓ preventing excessive energy consumption, thereby lowering environmental footprint



**No matter what.**

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## Our recommendation

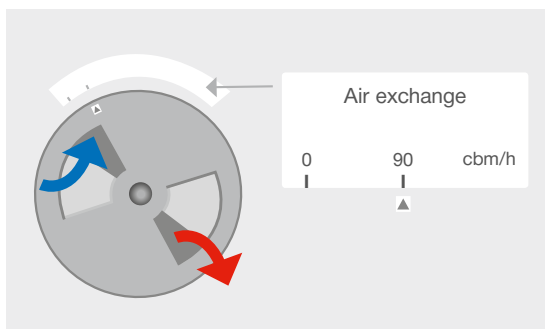
With regard to quality maintenance and reduction of CO<sub>2</sub> emissions, the target should be to carry the fresh produce at the lowest tolerated temperature and lowest required level of fresh-air exchange.

The ventilation rate depends on the respiration rate of the individual commodity. At Hamburg Süd, we recommend the following ventilation and dehumidification settings for the following commodities, for example:

Commodity	Ventilation (air exchange) cbm/h	Humidity (relative) %	Dehumidification (max. relative humidity setting) ON/OFF
Onions, bulbs (fresh)	10 to 40	65 to 75	ON
Potatoes, seed (fresh)	10 to 25	65 to 90	ON or OFF
Squash, winter, hard rind, pumpkins (fresh)	10 to 60	65 to 85	ON or OFF

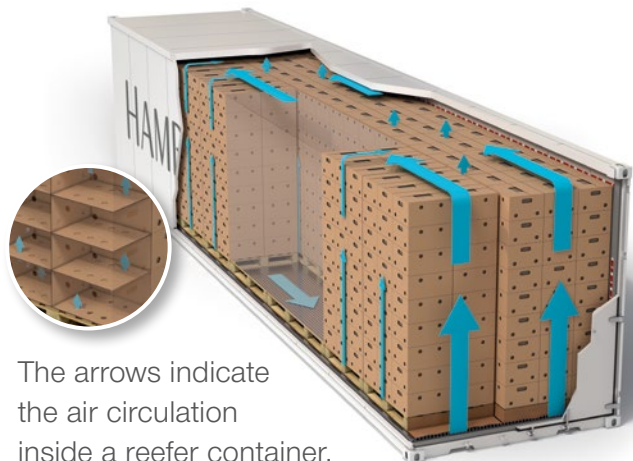
Relevant data for reefer container settings are shown in red.

### Fresh-air ventilation (exchange)



- Ambient air
- Carbon dioxide, ethylene

### Internal air circulation



The arrows indicate the air circulation inside a reefer container.

Detailed information regarding recommended transportation conditions can be found in our reefer guide STAY COOL – WE CARE or on our website:

[www.hamburgsud-line.com/reefer](http://www.hamburgsud-line.com/reefer)

Call today and ask to speak with one of our reefer cargo experts.



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