The risks of poor air distribution:

The three most common problems are:

- **Short-cycling**, where the discharge air does not travel the full distance due to loading practices and back pressure in the trailer, resulting in uneven temperature & air distribution throughout the trailer. This may spoil temperature-sensitive and heat-respiring products, which both require good temperature and air flow circulation to dissipate additional heat during transport.

- **Top-freezing**, where temperature sensitive goods, such as fresh products or pharmaceuticals, are stacked too close to the discharge air stream resulting in frost damage.

- **Hot spots**, or areas within the load space that are starved of temperature-controlled air and become warmer than the temperature selected on the unit thermostat.

- With the correct chutes installed, you avoid the consequences of the above common problems associated with the transportation of temperature-sensitive products. The installation of air chutes guarantees more uniform temperature and airflow distribution even if obstructions to the flow caused by improper loading practices or uneven loading exist.

Airflow vectors

With chute: airflow is delivered all the way to the back of the trailer.

Without chute: airflow does not reach the back of the trailer.
The importance of air

It is essential to maintain a uniform temperature inside a refrigerated trailer to ensure that sensitive cargo is kept in prime condition. The air circulated throughout the trailer by the refrigeration unit controls trailer temperature. In a perfect world, air circulates freely and equally to all parts of the load, from front to rear. In reality, however, multiple factors, including the shape of the load itself and the loading pattern can disrupt the airflow to the point that temperature distribution is sufficiently varied to put the load quality at risk.

Temperature distribution

With chute: temperature more evenly distributed.

Hot spot

Without chute: hot spot at the back of the trailer.

The solution

A purpose-designed air distribution chute ensures that air leaving the discharge outlet is evenly spread over the entire load, from the front to the back of the trailer. Thermo King’s air chute has been developed specifically for a wide range of Thermo King refrigeration units, backed by over 75 years of expertise in the business of moving temperature sensitive goods.

Benefits

- Minimal temperature variance (throughout the trailer ±2°C) due to even air distribution.
- Total load protection by eliminating short-cycling, top-freezing and hot spots.
- Fuel saving during loading and unloading.
- Quick and easy to install.
- Highly-durable material for long life.
- Designed to suit current production units as well as discontinued models.
- Easily disconnected to maximise volume for dry loads.

Features

- Chutes are supplied as 3.5 m modules. Chute length can be reduced by 75% compared to conventional systems to avoid damage during loading.
- Formed in high-grade, easy-to-clean vinyl with industry leading tear and tensile strengths.
- Full installation kit including heavy-duty brass grommets for easy installation onto ceiling.
- Installation bracket adapters with velcro attachments to permit rapid disconnection.
- To support chute avoiding damage during loading.

Typical applications

- Thermo King’s air chute is ideally suited to single-temperature trailers from 13 to 16 m in length carrying temperature-critical goods.
- Can also be used with some moveable bulkhead applications.