

Case Study

Thermal Blanket "CargoQuilt® Kit" Protects Sensitive Food Ingredients from Heat on Dry Van

Challenge

If proper temperature requirements are not maintained, transporting sensitive raw materials for food production, such as marshmallows, during the summer months can be a tricky, or should we say "sticky", task. Because confectionery products, melt or lose form when exposed to extreme heat, food manufacturers typically default to climate-controlled, or insulated trailers. When a renowned food manufacture presented the challenges of seasonally high reefer rates and disruptive mode conversions, QProducts offered the ability to ship on a dry van year-round; providing valuable cost-savings and flexibility to their network. The added benefit of additional head space on a dry trailer would allow the customer to double stack their totes, further reducing their transportation costs. A thermal barrier, with an easy application, to separate the hot ambient conditions from the product temperature during transit was required for success.

Solution

Due to the nature of the high-cube payloads (in this case, double stacked totes of marshmallows), traditional thermal blankets proved operationally inefficient and a new design was necessary. Using our flagship CargoQuilt insulation, the QProducts engineers designed a "kit" consisting of fifteen, lightweight, identical thermal panels, with a two-piece end cap. These reflective panels, or sections, are applied to each row of cargo as it is loaded onto the trailer using a standard extension pole. The extension pole can be inserted into a pocket located along the center edge of each of the panels. As the cargo is loaded row by row, a thermal barrier is gradually assembled throughout the process. The result is a complete thermal barrier shielding the product from the excessive heat above the CargoQuilt Kit.

"One-man" application process



Applies without ladders or forklifts



Straps prevent shifting during transit; make unloading easy



"QPack Packing Solution" stores CargoQuilt Kit neatly onto standard pallets for easy transport and effortless reuse.



Industry:

Food & Beverage
(Food Ingredients)



Application:

OTR



Route:

Michigan to
New Mexico



Challenge:

Protect from
heat on dry van/
Operational
efficiency



Solution:

CargoQuilt Panel Kit
applies in sections
to create thermal
barrier



Watch Application:
on.mjmc.com/CQAPP



Watch Removal:
on.mjmc.com/CQREM



Watch Packing:
on.mjmc.com/CQPACK

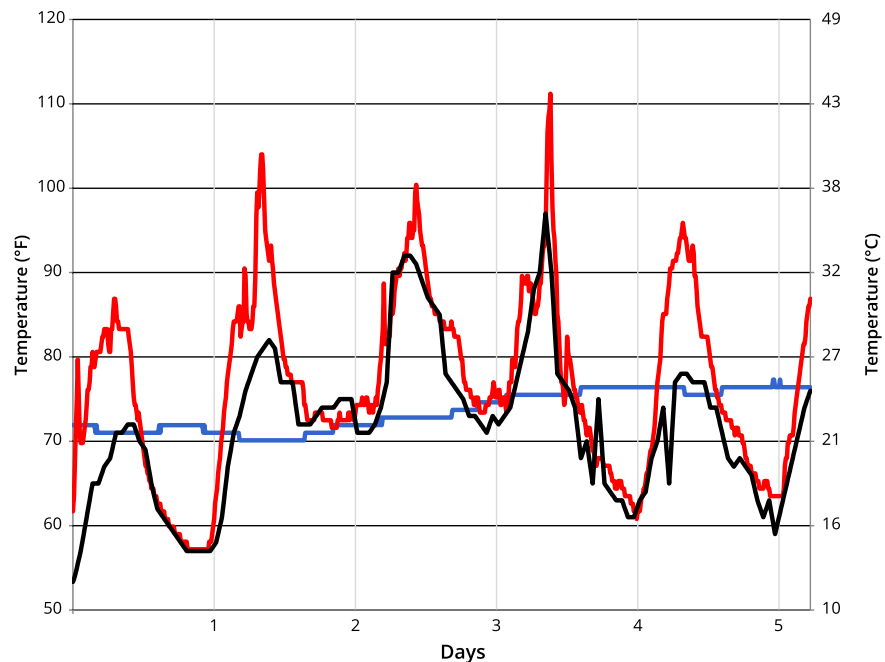
Test Setup

A live shipment test was performed using the CargoQuilt Kit to protect marshmallows from excessive heat on a 53' dry van during transit. The load pattern called for a total of 64 totes (32 double stacked, approx. 96" tall), and would travel for 5 days through summer conditions.

Temperature recorders were placed in areas most susceptible to heat (outer edges, bottom/top, near trailer door). The outside ambient experienced extreme conditions in transit (92°F & 97°F for Days 3 & 4). Internal ambient conditions (above the CargoQuilt) reached temperatures of 101° - 112° for 3 Days!

The CargoQuilt Kit successfully protected the product from temperature excursions, keeping it within spec and showing no signs of heat damage upon inspection.

As a result, the customer can ship essential food ingredients year-round on a dry van, adding flexibility to their network and eliminating costly mode conversions. After two years of implementing the solution, the customer has not had any melting of product resulting in claims or supply chain disruptions.



“From a handling standpoint, these quilts are very light weight. I'll admit there was a learning curve at first, but the application became simple with repetition. In terms of performance, we never heard of any loads that were damaged due to heat. It seems the quilts did their job successfully.”

— Facility Supervisor, Warehousing / Distribution Center