



TEST DATA — DUPONT™ TYVEK® AIR CARGO COVERS

DuPont™ Tyvek® Air Cargo Covers provide excellent 'all-in-one' protection against temperature excursions

When it comes to managing the risk of temperature excursions throughout the cold chain, protecting your products against ambient temperature extremes is important. However, solar radiation may be the most critical—and under-appreciated—threat you face. That's because solar radiation is the leading cause of high-temperature spikes on the tarmac.

We have conducted various trials for the Tyvek® Air Cargo Covers (including an environmental chamber test, sun exposure trial and real life scenario trial). Please contact AmSafe Bridport (details overleaf) to request the full Qualification Report and the Validation Reports.

Are you focused on the right R? Reflectivity or R-value?

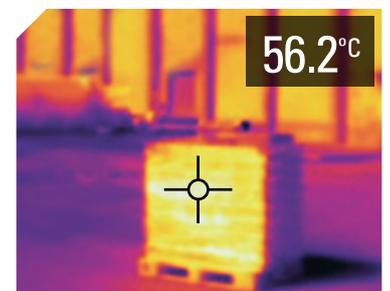
Tyvek® Air Cargo Covers offer multi-threat protection that helps reduce temperature excursions by providing:

- ⊕ Superior protection from solar radiation as a result of their unique reflective outer surface
- ⊕ Excellent protection from ambient temperature extremes—hot and cold—without the weight or bulk of alternative covers

Simply stated, Tyvek® Air Cargo Covers provide excellent 'all-in-one' protection against the threats of solar radiation and extreme ambient temperatures.

Temperature comparison

⊕ Control (stretch wrap)



⊕ Tyvek® Air Cargo Cover

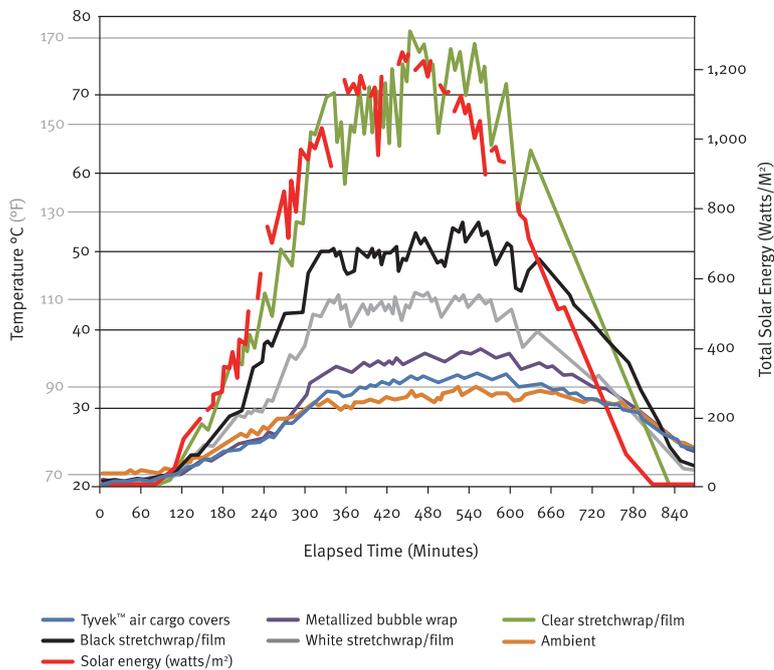


Test conditions: covered pallets on simulated tarmac in Lakeland, FL, November 2012 at ~11 a.m. Full sun with ambient temperature at 20°C.



Solar radiation technical study

At low thermal mass (empty boxes in test case below), the temperature inside a pallet can far exceed ambient temperature³.



Test conditions: Euro-sized, covered pallets on ground near Homestead, FL, 23 March 2013. Empty boxes. Full sun exposure with ambient high of 32°C/90°F. Solar wattage data when clouds obscured sun not shown to remove noise from graph. Tyvek® low emissivity cover shown. Solar energy measured at 26° north latitude per ASTM G7.

³A zero thermal mass experiment best isolates the relative temperature management effect of the cover.



Benefits demonstrated

- ⊕ Tyvek® Air Cargo Covers provide superior protection from solar radiation, a serious hazard faced during cold chain breaks on the tarmac.
- ⊕ Tyvek® has superior reflectance in the UV and visible spectrum and nearly eliminates the effect of IR radiation through a combination of reflectance, absorbance and low emissivity.
- ⊕ Lightweight thin Tyvek® Air Cargo Covers can provide better protection against temperature excursion than bulky covers and blankets.

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