



Heat Shield® Test

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In Japan, fresh produce, fruits and vegetables, are transported between islands on coastal ships. The produce is packed in aluminum 20 foot containers for shipment. During the summer, loss of produce is substantial due to high temperatures inside these containers. The shipping company approached one of the largest insulation contractors in Japan for an inexpensive solution to this problem. Refrigerating the containers was not an option. Tests were conducted in late summer to determine the best way to keep heat out of the containers. When these tests were proposed, we emphasized that **Heat Shield®** would not produce cold. **Heat Shield®** works as an insulator. It will reduce the penetration of heat, but it will not reduce temperatures.

Four identical containers were selected for the test:

- Container No. 1** - Standard container, no insulation
- Container No. 2** - **HEAT SHIELD** applied to outer surface at 600g/m²
- Container No. 3** - **HEAT SHIELD** applied to outer surface at 600g/m² and 25mm of fiberglass applied to inner surface.
- Container No. 4** - Polyurethane foam in thickness of 80mm to 100mm attached to the inner surface.

During a typical test day, the ambient temperature peaked at about 29C degrees at 13:00 hours. At that time, the temperature inside Container No. 1 without insulation was above 40C degrees. Container No. 3 had the lowest temperature at about 26C degrees and Container No. 2 (**Heat Shield®**) measured about 26.5C degrees. Container No. 4 had an inside temperature at close to the ambient reading of 29C degrees. Over a 24-hour period Container No. 2 with **Heat Shield®** had the most favorable readings. Those containers with insulation on the inside held the heat through the night. Indeed this is the intended purpose of most insulations that are installed inside, which store the heat and can not get rid of the stored energy. **Heat Shield®** is designed to be applied on the outside surfaces to keep the heat from penetrating. In this test it did this very well.

For your information:

- * **HEAT SHIELD** is the private label name internationally for **SUPER THERM**.
- 600g/ml = 100 sq.ft./gallon coverage = R19
- One inch polyurethane foam = R8
- * 26C = 79F, 26.5C = 80F, 29C = 84F, 40C = 104F degrees

For more information on SPI Products, please send us an email at info@ecosolv.com.
SPI products are manufactured by SPI in the USA in Shawnee, Kansas.

