

# Merrimac Maintenance Products Company

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## NEWSLETTER #6

### Japan

In Japan, fresh produce, fruits and vegetables, is transported between islands on coastal ships. The produce is packed in aluminum 20 foot containers for shipment. During the Summer losses of produce are high due to high temperature 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 is only an insulation. 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/m<sup>2</sup>
- Container No. 3** - HEAT SHIELD applied to outer surface at 600g/m<sup>2</sup> 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 only 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 stores 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.

As this newsletter is being prepared the shipping company and the insulation contractor are negotiating to coat all of the containers with HEAT SHIELD.

#### For your information:

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