

# Military

## *Application of Thermilate® REDUCES the Effects of Radiant Energy*

Dramatic results can be seen when **Thermilate®** insulating paint additive is mixed with ordinary paint. But the most dramatic of all results may be the use by the U.S. Military. If people who defend our country use **Thermilate®**. Just think how well **Thermilate®** will defend your home or business from the elements.

The results of a test on reducing radiant energy and heat at a United States rocket launching range were conclusive, "**Thermilate®** had lower temperatures during the test." The test proved that **Thermilate®** helps keeps heat out "at every location"!

**Thermilate®** not only enhances lighter coloured paints and keeps heat and cold out, it works well even with dark coloured paints in some of the most extreme and hostile environments.

Below are some results of the test conducted on the effectiveness of **Thermilate®** that was used at the rocket launching facility. It's clear that **Thermilate®** stands up to the most intense rigors of military stresses. It can easily protect your home from any challenges from the elements. Look at the test results conducted by the Climatic Test Branch of the Environmental Test Division and see for yourself. Even rocket scientists agree; **Thermilate®** makes a difference.

## Test Data

### MEMORANDUM FOR DISTRIBUTION

**SUBJECT:** Letter Report for Multiple Launch Rocket System (MLRS) M270 Launcher Solar Radiation Test

Test Data Results Provided by:

Climatic Test Branch  
Environmental Test Division  
Redstone Technical Test Center

CSTE-DTC-RT-M-CL  
8 Oct 99

W. Byam 6-0591

1. Solar radiation tests were conducted by Climatic Test Branch (CTB) at Building 7290 from September 29, to October 6, 1999. These tests were conducted to determine the effectiveness of a paint additive (**Thermilate®**) applied to the cab section of the launcher. Mr. Steve Bramlett, MLRS Project Office, requested the tests.

2. High cab temperatures have been experienced during days with bright sunlight or high solar irradiance; the cab is not air-conditioned. The paint additive, **Thermilate®**, has been proposed

by a local vendor to lower cab temperatures. This paint additive increases the resistance to heat transfer on the surface it's applied to; the improvement being primarily to reduce the effects of radiant energy.

### **M270 LAUNCHER SOLAR RADIATION TEST**



Multiple Launch Rocket System (MLRS)

3. The launcher is too large for this chamber to conduct a standard MIL-STD-810 solar radiation test. However, the objective was to determine the effectiveness of the paint additive on the cab area. To accomplish the objective two launchers were subjected to identical solar loading over a two day period. Launcher, S/N 4AA00481, had been painted using **Thermilate®** and launcher, S/N 4AA00222, was not.

**Note:** The irradiance level in the solar chamber is normally varied by raising and lowering the light bank. This was not possible because of the height of the launcher. With the light bank at its highest point, the lights were only 30 inches above the cab!

4. For the first day the launchers were in the operational configuration with the blast shields in place and were exposed to a MIL-STD-810 daily solar radiation cycle. On the second day the blast shields were lowered and windows opened and the launchers were exposed to three hours of maximum solar radiation. Thermocouples were placed on the outside and inside of the cab in various locations, see enclosed photographs. The enclosed plots are arranged to compare the temperatures during the test at the following locations:

- Commanders side overhead
- Drivers side overhead
- Air in the cab

5. At every location monitored the cab painted with **Thermilate®** had lower temperatures during the test. On the first day temperatures in the cab peaked at 131.7 F in the launcher with the paint additive and 137.8 F for the other launcher. On the second day the cab temperature peaked at 97.7 F and 100.5 F.

These last temperatures reflect the fact that the air temperature outside and inside the cab was almost the same due to the fact that the blast shields were lowered and the windows were open.

**SUMMARY:** The launchers almost completely filled the solar chambers. It is believed that much more dramatic results would show from the use of **Thermilate®** if the chamber was larger or if the tests was conducted in a natural outdoor environment.

If **Thermilate®** works this well in a dark coloured paint in an extremely hostile environment, just imagine how well it works with lighter coloured paints and in a normal environment!