

IRRADIATION TESTS USING ARTIFICIAL SUNLIGHT

Prepared for:

Cerama-Tech of Texas
1804 Avenue G, Suite 112
Plano, Texas 75074

Prepared by:

Research and Development Division
Southwestern Laboratories, Inc.
222 Cavalcade Street
Houston, Texas 77009

March 14, 1994

SWL Report No.: 261394-13043
SWL Client No.: 12-2251-00

SWL

SOUTHWESTERN LABORATORIES, INC.

222 Cavalcade
P.O. Box 8768
Houston, Texas 77243
Phone (713) 652-9151
Fax (713) 656-6307

March 14, 1994

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Mr. Joe Merrell
Cerama-Tech of Texas
1804 Avenue G, Suite 112
Plano, Texas 75074

RE: Irradiation Tests Using Artificial Sunlight

Dear Mr. Merrell:

Please find attached the results for the above referenced project. The Tamko Roofing Material has an outside and inside surface temperature of above 160°F. The Cerama-Tech Coated Tamko Roofing Material has an outside and inside surface temperature of below 130°F.

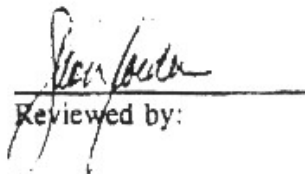
Huntingdon/SwL-Houston is pleased to serve you. Please call if there are any questions.

Respectfully,

HUNTINGDON/SWL-HOUSTON



Carolyn M. Doege
Laboratory Supervisor
Research and Development Division


Reviewed by:

Attachments

cc: J. Woodson
CMD:cd

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Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not necessarily indicative of the qualities of apparently identical or similar products. Samples will be retained for 30 days from the date of report and discarded at that time, unless alternate arrangements are made with the client.

**Cerama-Tech of Texas
Irradiation Tests Using Artificial Sunlight
Huntingdon/SWL Report No. 261394-13043**

LABORATORY EVALUATION

I. INTRODUCTION

On February 28, 1994, Mr. Joe Merrell of Cerama-Tech authorized an Artificial Sunlight comparison of common roofing material with and without a coating applied by the client. The client approved scope and cost of these investigations were outlined in Huntingdon Proposal C94-019.

II. BACKGROUND AND PURPOSE

Cerama-Tech provided two (2) samples of roofing material. One sample was typical Tamko roofing material. The second sample was the identical Tamko roofing material coated with a white Cerama-Tech Coating. Each sample was approximately 18" x 18".

These two materials were subjected to artificial sunlight. Temperatures were monitored at the material surface, on the inside (non-radiated side) of the material, and in the air between the material and the artificial light source. These temperatures were compared to evaluate the effect of the coating on the heat absorbed by and/or transmitted through the material.

III. EXPERIMENTAL SET-UP

Artificial Sun Light -	250 watt clear heat lamp (12 inches from roof material)
Roof Simulator -	Styrofoam insulated cooler. The top of the cooler was removed and replaced with the roofing material test specimens.
Test Duration -	90 minutes (equilibrium temperatures reached at this point)
Temperature probe (thermocouple) locations:	
Air -	3" from roof material between roof material and artificial sun light
Outside Surface -	Directly on surface of test material
Inside surface -	Inside cooler (roof simulator) on back (non-irradiated) side of test material

IV. EXPERIMENTAL RESULTS

Final steady state (equilibrium) temperatures are presented in tabular form below for the three temperature probes. All values are expressed in °F.

SAMPLE	TEMPERATURE PROBES		
	Air	Outside Surface	Inside Surface
	(°F)	(°F)	(°F)
Tamko Roofing Material	99	171	162
Tamko Roofing Material with Cerama-Tech Coating	102	126	120

Time-temperature graphs for both systems (coated and uncoated) are presented graphically in Exhibits 1 through 4.

- Exhibit 1 displays experimental temperatures of the air, the outside surface, and the inside surface of the uncoated Tamko Roofing Material.
- Exhibit 2 displays similar data for the Tamko Roofing Material with Cerama-Tech Coating.
- Exhibit 3 compares the outside surface temperature of the uncoated Tamko Roofing Material and the Tamko Roofing Material with Cerama-Tech Coating.
- Exhibit 4 compares the inside surface temperature of the uncoated Tamko Roofing Material and the Tamko Roofing Material with Cerama-Tech Coating.

These exhibits graphically illustrate that, when compared to the Cerama-Tech coated material at the same temperature, the uncoated material sustained appreciably higher temperatures both on the outer and inner surfaces. After approximately one hour, the coated material had temperatures ~40°F cooler on both surfaces. The Tamko Roofing Material had an outside and inside surface temperature greater than 160°F. The Cerama-Tech Coated Tamko Roofing Material had an outside and inside surface temperature of below 130°F.

Exhibit 1

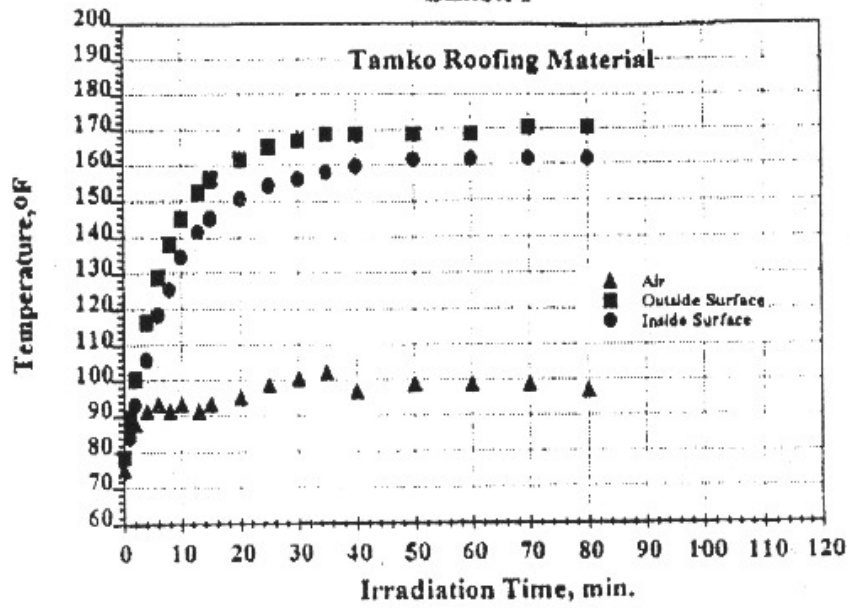


Exhibit 2

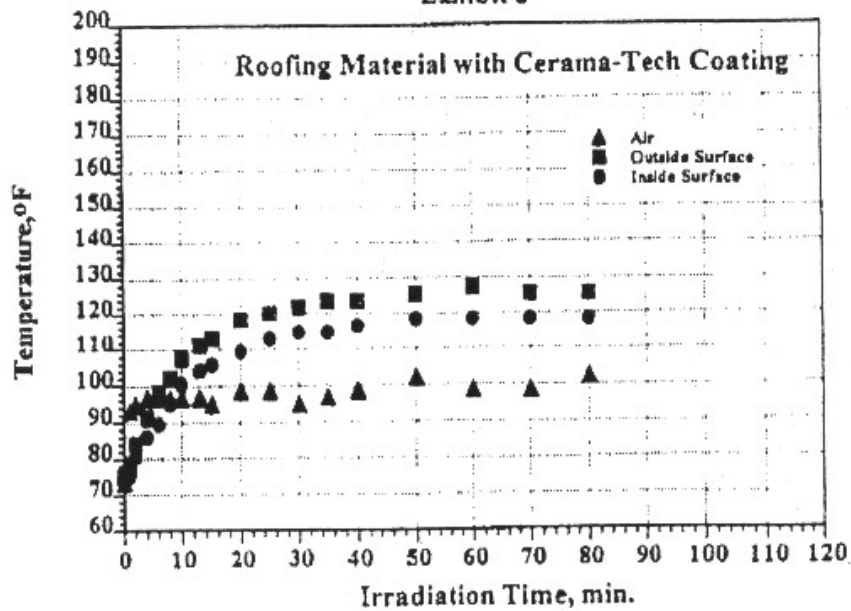


Exhibit 3

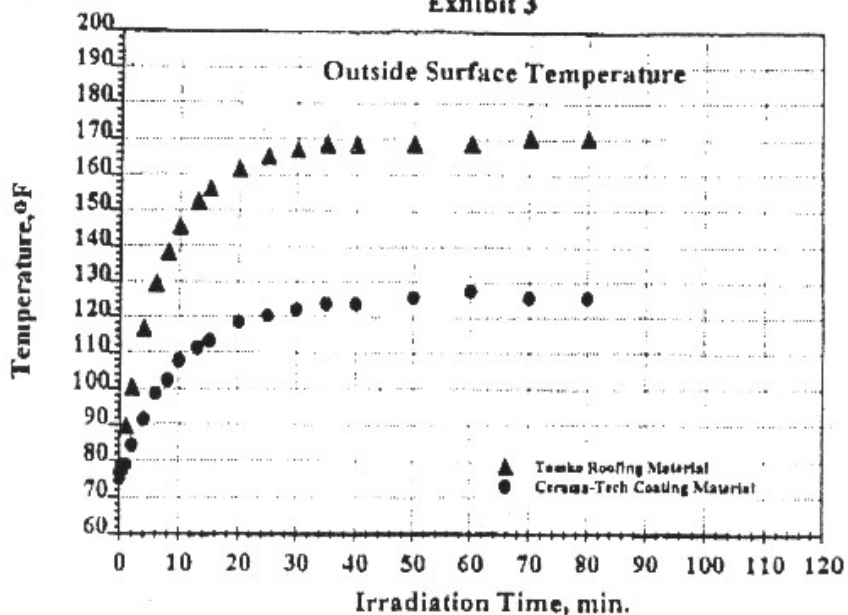


Exhibit 4

