

May 30, 2007

California Energy Commission
1516 Ninth Street, MS-25
Sacramento, CA 95814

Attn.: Mr. Payam Bozorgchami:

Re: Cool Roof Costs

Dear Mr. Bozorgchami,

My name is Domenic Morelli. I am the Executive Vice President of Thermo Manufacturing. Thermo has been in the Roofing and primarily the Cool Roof market since 1948. I have personally been privileged and blessed to be in the roofing industry since 1979. Thermo has extensive knowledge and information regarding cool roofs, saving energy, and assisting building owners with a variety of roofing products and systems.

I would like to outline a few different systems to show you the costs associated with cool roof benefits, both short term and long term. The information below has been collected from Thermo Manufacturing, several California Contractors, Representatives and Distributors that we presently work with in the State of California.

Firstly, I would like to mention that these are normal installed prices for many buildings in the state of California. Some buildings and areas, costs will naturally be higher on any roof system due to access of the building, height of the building, location of the building, existing roof conditions, or owners' needs and desires.

Job Example: The Ontario Convention Center. The existing roof in the Convention Center was a 2 Ply SBS Modified Bitumen application with a granule surface. This roof was only 8 years old but had experienced problems in several areas where the modified cap sheet was loose from the modified base sheet. Blisters and flashings were allowing water to penetrate the assembly and cause leaks into the building. The original application was questionable, and the heat in the Ontario area was causing havoc on the roof surface and naturally raising the cost of electricity.

A National Roofing Contractor based in Santa Ana, CA installed the new Thermo Cool Roof which included repairs and restorations with Modified Bitumen, SEBS Modified Emulsion and Polyester, Flashing Grade products for all penetrations, sealing and coating all the existing HVAC duct work and then a Thermo Title 24 compliant Cool Roof coating at the rate of 3 gallons per 100 sq. ft. with a minimum mil thickness of 24 mils. This system carries a 10 year renewable warranty from Thermo and the contractor. The installed cost was less than 2.00 per sq. ft. The owner also received a rebate from So Cal Edison for installing a Cool Roof. Since then they have noticed reductions in their monthly energy consumption.

This National Contractor gave me a list of their budget costs for owners for the following cool roof applications:

White Single Ply Cool Roof installations over existing roof systems: \$2.00 to 2.50 a sq. ft. installed.

BUR Cap Sheet Roofs with Cool Roof Coating: \$2.25 to 2.75 a sq. ft. installed

Asphalt Emulsion, Polyester and Cool Roof Coating: \$1.75 to 2.25 a sq. ft installed

Thermo has seen huge savings and extended life cycle costs for many BUR Roofs and Modified Roofs that we have promoted and installed for customers over the years. Another example was an installation in Oklahoma.

The initial installation was a BUR Roof installed by Standard Roofing in the late 1950's. This roof was surfaced with a Thermo Cool Roof coating system. In the late 90's the owner added an addition to the building and called their local contractor who installed the original roof on their facility. To their surprise, he was still in the roofing business and had the same phone number. The father had retired, but his son found the original file, and called the Thermo 800 line. Thermo was pleased to supply Standard Roofing the BUR products and a Thermo Cool Roof surfacing for the new addition of the building. Today the original roof is almost 50 years old and performing beautifully. The life cycle cost for this roof was excellent, with minor maintenance over the life of the roof.

There are many different roof systems and assemblies that involve Single Ply, BUR, Mod Bit, Cold Process, Foam, Coatings, and more. Owners have many options available to them depending on their needs and desires for their buildings and roofs. We have determined to install a cool roof on any existing building can be cost effective with a variety of different roof systems and applications in any area of California.

The keys to roofing success start with a good design, quality products, application, and then a consistent maintenance program that keep drains clear and handle normal roof maintenance will keep any roof lasting longer and performing well for many years.

Thermo has kept roofs maintained and performing for over 50 years. We have a list of projects in CA and the Southwest with schools, universities, governmental projects, and private owners. The Housing Authority of Las Vegas examined Thermo Cool Roof installations in 1975 that were installed by Robert's Roof and Floor Company in 1955. The roof cuts of the 20 year old roof revealed that the bitumen flood coat, asphalt inter ply moppings, and membrane to be soft and pliable with no sign of deterioration. An inexpensive re-coat was recommended and performed which will enhance the appearance and extend the life expectancy another twenty years.

Thermo has documentation from Testing Engineers, Inc. of San Diego, CA dated August 12, 1966 that identifies Federal Standard Testing Reflectance of 85.5. We have a letter

from TRW based in El Segundo, CA dated March 5, 1984 that states the Thermo Cool Roof that was installed decreased their energy consumption approximately 18% over the previous 6 months, at a critical time to reduce overhead costs. They expect a payback of this roof in energy savings in less than 2 years.

Cool Roofs are beneficial and cost saving, for owners, building occupants, installers of the roofing systems, and the surrounding communities.

We will be pleased to supply more documentation if requested that outlines how Cool Roofs are excellent short term and long term solutions for energy savings, and beneficial to people, communities, natural resources, and landfills.

Respectfully,

Domenic Morelli
Executive Vice President
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