

# Our Protected Membrane Roof System Works So Hard It Will Pay For Itself.



Kansas City Centre – Kansas City, MO



Eberhart Building, UNC-Greensboro – Greensboro, NC



Oklahoma University Switzer Arena – Norman, OK

It's Not Rocket Science. It Just Works.



# The PMR Advantage

**T. Clear Protected Membrane Roof (PMR) Systems** protect your building investment against the major causes of roof failure – UV radiation, thermal shock, wind, hail, and physical abuse.

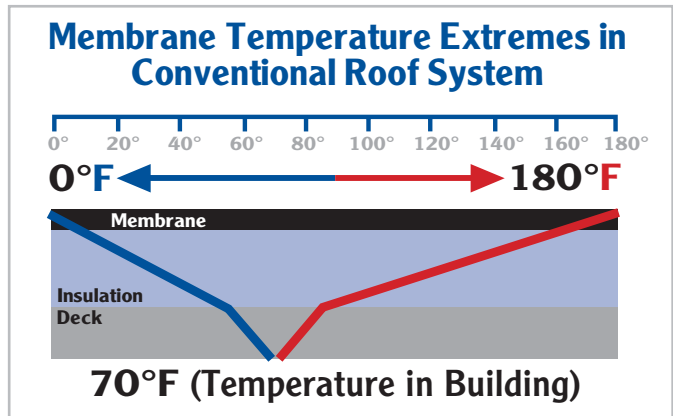
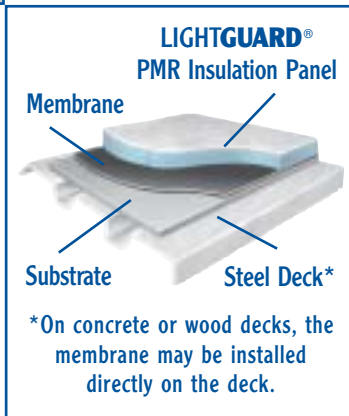
In all areas of the building envelope, the moisture barrier is placed on the warm side of the insulation. With one exception — a conventional roof system.

In a T. Clear Protected Membrane Roof System (PMR), the Dow Styrofoam® extruded polystyrene insulation is

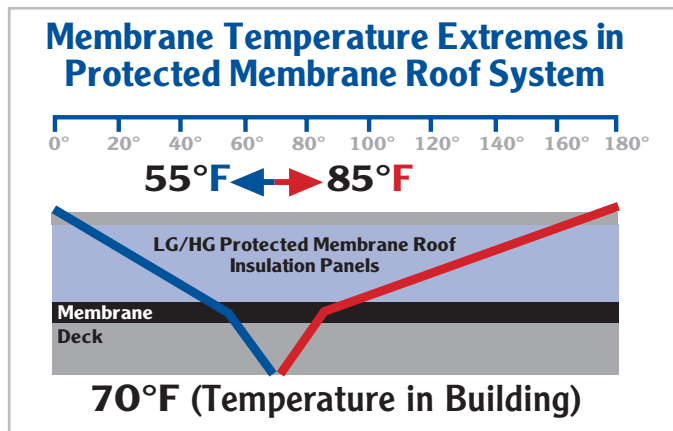
placed above the waterproof membrane to protect the membrane from the harsh rooftop environment.

Each 2' x 4' LIGHTGUARD®, HEAVYGUARD®, or COOLGUARD® PMR Insulation panel utilizes the superior moisture resistance and high compressive strength properties of Dow Styrofoam. A layer of latex-modified concrete is bonded to the surface of each panel further protecting it from physical abuse as well as providing ballast. Each panel has tongue-and-groove edges for easy installation.

A T. Clear PMR does not involve particularly sophisticated engineering or require any new or different equipment to install. It uses the same components as a conventional roof system, but it uses them in a more efficient and effective way. **It's not rocket science. It just works.**



A T. Clear PMR protects the membrane from the stress caused by daily thermal cycling.



## Features and Benefits of T. Clear PMR System

- COOLGUARD PMR Panels
- Reusable in reroofing or verticle expansion projects
- Membrane protected from ultraviolet rays, temperature extremes, and physical abuse
- Styrofoam retains at least 80% of its R-value for 25 years
- Styrofoam resistant to water
- LIGHTGUARD® & COOLGUARD® PMR Panels are lightweight at 4.5 lbs. per sq. ft.
- Places dewpoint above the membrane
- Reduce roof top temperatures and “heat island” effect
- Reduced landfill costs
- Greater life-cycle value
- Eliminates major causes of leaks and roof failures
- Reduces yearly maintenance costs
- Reduced energy costs
- Predictable long-term performance
- Resists absorption of moisture which can lead to expensive tear-offs
- Ideal for roof spans where weight is a concern
- Can be laid over existing membrane to add insulation
- Eliminates condensation problems



**T. Clear Protected Membrane Roof Insulation Panels** will work with any type of waterproof membrane on any type of deck. And have for over 30 years.

**L**IGHTGUARD, HEAVY-GUARD, and COOLGUARD Protected Membrane Roof Insulation panels from T. Clear Corp. combine insulation and ballast to protect the waterproof membrane from wind and the damage caused by hail, acid rain, vandalism and maintenance traffic.

Logic will tell you that a PMR will last longer than a typical conventional roof system. In addition, yearly maintenance costs are generally limited to clearing drains and checking the membrane along any parapets.

With a longer life span, reduced maintenance costs, and the energy savings of Dow Styrofoam® extruded polystyrene insulation, a T. Clear PMR will pay for itself.



A T. Clear PMR protects the waterproof membrane from physical abuse often caused by other trades during and after construction.

**A T. Clear PMR System is the perfect choice for environments with high humidity such as paper and textile mills.**

When warm air meets cool air, water vapor condenses – the temperature at which water vapor condenses is called the “dew point.”

In conventional roof systems, the dew point is below the waterproof membrane. So, when vapor condenses, it is deposited into your insulation and spread throughout by capillary action, decreasing its insulating value. And it can literally “rain” inside your building and deteriorate the roof deck over a period of time.

In a T. Clear PMR, the dew point is raised above the waterproof membrane. So, water vapor isn’t allowed to condense inside your building.

**LIGHTGUARD, HEAVYGUARD, & COOLGUARD PMR Insulation Panels protect the membrane, reduce energy costs, and provide an attractive, walkable surface.**

- LIGHTGUARD & COOLGUARD panels consist of 3/8” latex-modified concrete bonded to 2” or 3” Styrofoam and weigh 4.5 lbs./sq. ft.
- HEAVYGUARD panels consist of 1” latex-modified concrete bonded to 2” or 3” Styrofoam and weigh 11 lbs./sq. ft.
- Each 2’ x 4’ panel is tongue-and-grooved and loose-laid over the membrane
- Styrofoam has an R-value of 5 per inch guaranteed
- Ballast and insulation are laid in one easy step
- Panels are recyclable, free of CFCs, and can be reused in any reroof situation or verticle expansion
- LIGHTGUARD & HEAVYGUARD come in 4 attractive colors — gray, tan, red and green.
- HEAVYGUARD is perfect for rooftop gardens and light traffic decks
- COOLGUARD panels have an initial reflectance of 84, aged reflectance of 65, and a typical emittance value of 0.94 per ASTM-E408 which exceeds the LEED minimum of 0.90.



Andrew H. S. – Andrews, TX  
**Skylight with 6” hail damage**

This roof on Andrews High School, installed in 1978, survived a hail storm with 6” hail in 1995 with no leaks.

## T. Clear PMR Warranties

### 10, 15, and 30-Year Limited Warranty

Included with each system at no additional charge. This warranty insures that your system will:

- Stay in place on the roof in winds up to 90 mph
- Retain at least 80% of its R-value for 25 years
- LIGHTGUARD®, HEAVYGUARD®, or COOLGUARD® panels will not delaminate

### Total Performance Warranty

Covers the total roof system with single-source responsibility.

- Available for 10, 15 or 30 years
- No haggling over who is responsible
- Includes pre-job, start-up and job completion inspections by independent inspector/advisors

### Extended Wind Warranties\*

- Covers wind speeds of 100, 110 & 120 mph
- Roof system must be designed for the next highest wind rating (Ex: 110 mph wind for a 100 mph warranty)

*\*Indicate desire during design stage so system can be engineered for higher rating*

## The Family of Building Products from T. Clear Corp. —



**T. CLEAR** Protected Membrane Roof Systems  
LIGHTGUARD®, HEAVYGUARD®, COOLGUARD®  
Protected Membrane Roof Insulation Panels  
WALLGUARD® Panels



**THERMADRY®**  
Insulating Below-Grade Drainage Panels



**THERMACAV®, THERMACAV DP™**  
Insulating Cavity Wall Panels



**ProTEC®**  
Concrete Structural Insulated Panel System

## From FinPan, Inc. —



**UTIL-A-CRETE®**  
Concrete Backer Board

**Protec®**  
Concrete Backer Board



For more information on any of T. Clear building products or a list of nationwide manufacturer's representatives, call T. Clear Corporation at 1-800-544-7398.

3255 Symmes Road  
Hamilton, OH 45015

800-544-7398  
Fax 513-870-9606

Email:  
sales@tclear.com  
technical@tclear.com

www.tclear.com  
www.finpan.com

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