

# ROOFING REVIEW

An Overview of Current LIGHTGUARD Applications

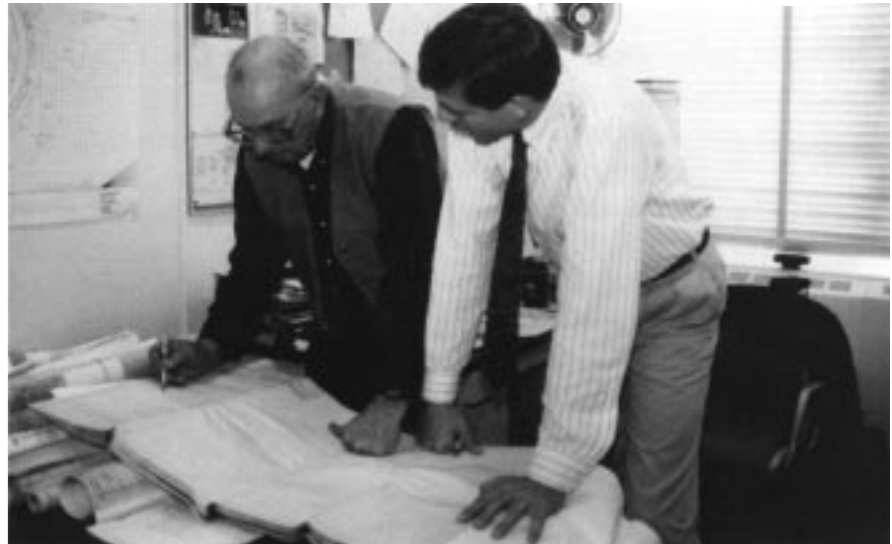
## Roofing Product Gives Optimum Performance For Major U.S. Government Research Facility

Argonne National Laboratory, one of the largest energy research and development organizations in the nation with a world reputation for achievement in a variety of individual scientific and engineering disciplines, is headquartered 25 miles southwest of Chicago on 1,700 wooded acres with nearly a hundred major buildings housing the most advanced scientific and technological equipment today.

Following an analysis of all buildings, the majority constructed in the late 1940's through the early 1960's, Argonne initiated a \$9 million, three-year reroofing program in the late 1980's to replace aging four-ply built-up roofs with stone ballast.

According to Argonne experts, the roofs had been subjected to years of exposure to the most harmful of the natural elements — heat and cold. Additionally, nearly 75 buildings containing flat top roofs of aggregate surfacing suffered from blistering and cracking. In some cases, foot traffic resulted in leakage.

Experts knew from past experience that T. Clear Protected Membrane Roof Systems using LIGHTGUARD® Protected Membrane Roof Insulation had been used successfully in smaller Argonne roofing



Construction Coordinator, Chuck Bally, and T. Clear agent, Ron Rediger, carefully review installation plans.

projects. Now that this major reroofing program would be initiated, could LIGHTGUARD be relied on again?

### **LIGHTGUARD The Clear Choice For Experts**

According to Argonne experts, there were several issues to consider. "The roofing membranes needed to be protected against ultra-violet light and foot traffic," says Chuck Ball, construction coordinator for Argonne. "Another prime concern was

the need for increased insulation." Not as important, but certainly a consideration, was the need for flexibility in the roofing system to better handle various roof penetrations and features, such as blowers and vents.

Bally and other experts, including Larry Moran, project manager, and John Perfect,

**LIGHTGUARD®**  
Protected Membrane Roof Insulation

a construction field representative who at the time was the lead designer for the roofing project, collaborated extensively before choosing a T. Clear Protected Membrane Roof System (PMR) comprised of the roof deck and a single-ply PVC membrane with high-UV resistant membranes for areas exposed to the sun. Rather than ballast with stone, which can splinter in freezing weather and puncture the membrane, they chose LIGHTGUARD Protected Membrane Roof Insulation, which provides ballast, protection from ultra-violet light, a walking surface, and added insulation. Moran points out that after the new roofing system was installed, the R-value for the roof system, using LIGHTGUARD, increased from 16 to 25, which translated into a 50 percent increase in the roof's resistance to heat loss. Because the laboratory is equipped with a myriad of roof penetrations, LIGHTGUARD and PVC membrane helped to make the installation easier. At the completion of the project, workers had installed 1.3 million square feet of LIGHTGUARD on nearly 75 buildings.

## LIGHTGUARD Protects Membrane, Saves Energy

LIGHTGUARD Protected Membrane Roof Insulation is comprised of 2-foot by 4-foot panels of 2-inch or 3-inch high-compressive strength extruded polystyrene with a 3/8-inch latex-modified concrete facing. The tight, closed-cell structure of the foam insulation panels resists all forms of water penetration and protects the waterproof membranes from heat, ultra-violet rays, wind, temperature swings, and physical abuse. The LIGHTGUARD panels, tongue and grooved on the long edges and installed in a staggered arrangement, serve as both insulation and ballast. Once installed, LIGHTGUARD panels offer an attractive appearance and a smooth, walkable surface.



LIGHTGUARD provides flexibility in handling roof features such as blowers and vents.

While stone-ballasted PMR systems weigh 11 pounds per square foot, LIGHTGUARD weighs 4.5 pounds per square foot and is ideal for installation of single-ply and built-up roofing requiring a lighter weight roofing system. Though lightweight, LIGHTGUARD panels are durable and will withstand winds of 70 miles per hour and above. Free of CFC, LIGHTGUARD is an environmentally responsible product.

## System Goes On Easily

LIGHTGUARD is easy to apply. There is no need to adhere panels to the roof membrane or use fasteners that can puncture the membrane. LIGHTGUARD eliminates damage from windblown rocks from atop the roof because LIGHTGUARD acts as the ballast and does not require the use of crushed stone or gravel. There is also an opportunity to reuse the LIGHTGUARD panels in the event of membrane failure, renovation or vertical expansion. "We've taken LIGHTGUARD panels off one roof, repaired it, and put the panels back on," says Bally.

Now that major reroofing has been completed at Argonne National Laboratory, LIGHTGUARD is protecting the roofing membrane from ultra-violet light and foot traffic, insulating the roof, and providing a

smooth, attractive walking surface. Argonne is so satisfied with LIGHTGUARD's performance, that it has selected the product for another project, the Advanced Photon Source, a major new facility that will provide the world's brightest x-ray beams for research in materials science, condensed matter physics, chemistry, geosciences, biology and medicine. Construction for the Advanced Photon Source is expected to be completed sometime in 1995.

LIGHTGUARD has been used by industry, government installations, schools and universities, medical facilities and textile mills in the United States since 1976, when FinPan Inc. began manufacturing the product. LIGHTGUARD is now manufactured, marketed and distributed by FinPan's subsidiary, the T. Clear Corporation.

For technical information or a list of nationwide manufacturer's agents, call T. Clear Corporation at 1-800-544-7398.



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