

ASTM RESEARCHERS COMPARED 12 SYSTEMS: STUDY RANKS EPDM AS #1 MEMBRANE

EPDM provides an equal or better service life when compared to 11 other traditional roofing systems, according to a recent research study. This is one of the conclusions

described in *Update: Service Life Tests for Roofing Membranes*, published by ASTM International, which ranked EPDM at the top of the roofing membranes field.



Council Rock School

The study measured select parameters both before and after oven heat and ultraviolet exposure. The products tested included multiple-ply roof assemblies, as well as other single-ply roofing membranes. For comparison purposes, each membrane was tested under identical conditions.

Properties tested include: load-strain product, cyclic fatigue resistance, water absorption, glass transition, thermal expansion, static puncture resistance,

and dynamic puncture resistance. The membranes were then rated based on their performance.

"The EPDM samples consistently posted the best ratings," the study authors concluded, adding this result may be attributed to the strength of reinforcement within each membrane. However, "the EPDM samples, without reinforcement, consistently rated among the highest in the group."

The researchers will later evaluate the same membranes in the field after two, four and six years of exposure. The researchers suggested, based on their experience with BUR membranes, that EPDM should perform as well or better using the same testing procedures.

The complete data from this study can be reviewed at www.epdmroofs.org.

EPDM ROOF SYSTEMS RESIST HAIL DAMAGE: DENVER INTERNATIONAL AIRPORT "HAILES" THE ADVANTAGES OF EPDM

Denver International Airport decided to replace several hail-damaged roofs with EPDM membrane following a rigorous comparison of roofing systems, according to *Case Study: Reroof Project - Denver International Airport Terminal Flat Roofs* prepared by Nick A. Lovato of CyberCon Engineering, Inc. of Centennial, CO.

The EPDM system was selected and installed because of its durability, low life-cycle costs,

excellent resistance to wind and hail, and minimal intrusion on facility operations.

The hail damage, which occurred in 2001 to the original 7-year-old thermoplastic material, affected the flat roofs over the Jeppesen Terminal and passenger bridge.

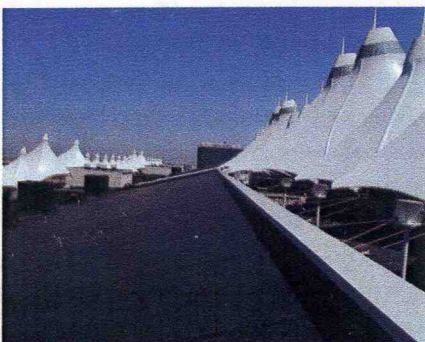
Careful consideration was given to several roofing options and non-reinforced fully adhered 90-mil EPDM was chosen. It was installed over a glass-faced moisture resistant gypsum cover board, which was mechanically fastened over the existing rigid insulation.

The original membrane sustained concentric cracks from the hail. The new membrane was coated with 15 mils of white acrylic elastomeric roof coating to further extend the life of the roof system, protect the roof from the sun's UV rays and add an aesthetically pleasing surface.

Moisture and hail damaged many components of the original roof system. Moisture caused by falling ice and other factors had

also infiltrated the insulation that led to further water seepage. There was also significant degradation of the thermoplastic material from plasticizer loss.

The complete data from this study can be reviewed at www.epdmroofs.org.



Denver International Airport

The EPDM Roofing Association (ERA) provides technical and research support to the public and construction industry. ERA is committed to communicating the longstanding attributes, consistency and the value proposition of EPDM rubber membrane roofing materials.

FOR MORE INFORMATION, CONTACT:
EPDM ROOFING ASSOCIATION
515 KING ST. SUITE 420
ALEXANDRIA, VA 22314
(703) 684-5020
www.epdmroofs.org

STUDY REVISITS ROOF SYSTEMS INSTALLED IN THE 1980s: EPDM MEMBRANES STILL TOPS IN PERFORMANCE

EPDM roof membranes between 16 and 26 years old show outstanding field aging performance and continue to deliver a solid return on investment. These are among the

findings derived from a recent study that re-examined older roof systems.

The study, *EPDM Roof Membranes: Long Term Performance Revisited* by Tim Trial, Ross Robertson and Brian Gish, revisited and extended a prior Gish/Lusardi study to include the performance of much older EPDM roof systems.

"The results obtained in this study confirm the outstanding field aging performance of EPDM membranes," wrote Tim Trial, one of the study's authors. "The tensile strength and tear resistance data obtained for both ballasted and exposed roofs exceed the ASTM D 4637 specifications for new and heat aged

membranes after 16–26 years of service life."

The authors' conclusions were determined following rigorous measurement of tensile strength, ultimate elongation, and tear resistance and also measurements of optical observations. The samples studied were taken from both exposed and non-exposed (ballasted) roofs located in several climates that had been exposed to the long-term effects of water, UV radiation, ozone, and heat and thermal cycling.

Ethylene Propylene Diene Monomer (EPDM) membranes were introduced into the single-ply roofing market in the early 1960s. EPDM continues to be the number one roofing membrane of architects, roof consultants and contractors for both new construction and replacement roofing projects.

For more details, visit www.epdmroofs.org



Pixar Animation Studios

STUDY VERIFIES LOW LIFE CYCLE COST: EPDM ROOFS COST LESS TO MAINTAIN

The maintenance costs of EPDM roof systems have been shown to add little to the long-term cost of the roofing system on new and older buildings. This is the conclusion of a new study, which compared the service costs of roofs installed within the past 10 years with

older EPDM systems identified in a previous study.

The study compared data that was gathered in 1998 with recently revised and updated performance information generated between 1999 and 2003. The findings of the study also include scrutiny of the service records for three billion square feet of EPDM roofs kept since 1982.

"The improvement in performance now makes the cost of maintaining an EPDM roof for 10 years negligible," said James L. Hoff, Vice President, Marketing and Technology, Firestone Building Products.

The 1998 study revealed that the unit maintenance costs declined 85 percent from roofs

installed from 1982 to 1987. The significant drop was attributed to changes in technology. Hoff noted that changes in seaming and attachment technology were among the technological advances.

"Although, the improvement trend begins to flatten out slightly from 1987 through 1993, cost reductions continue each year; and even these smaller incremental improvements account for another 60 percent reduction in maintenance cost," Hoff wrote.

The study contained information on construction and system type, geographical location, installing contractor, and warranty information. The typical warranty period for the roofs in the study was 10 years.

More details on this and other EPDM maintenance issues are available at www.epdmroofs.org.



Staples World Headquarters