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Testing Shows Most 30-year Old Roof Systems Studied Still Achieving Acceptable Performance Standards

A recent study of roof systems conducted on behalf of the EPDM Roofing Association (ERA) provided tangible proof of the long-term performance capability of roof systems including EPDM. The study concluded that all of the systems examined, each with 30 years of in field service, were still performing as intended.

Material samples from the 45-mil EPDM roof systems were taken from five roofs on buildings in Wisconsin, Illinois, Michigan and North Carolina. Each EPDM membrane was then tested to determine its current physical characteristics. The roofs were examined through personal inspection to determine their current overall condition. Samples were then taken and sent to Momentum Technologies of Uniontown, Ohio a long-time provider of laboratory services to the roofing and paving industry, for further study. The following tests were performed:

- Elongation
- Tensile
- Thickness XD (Cross direction)
- Thickness MD (Machine direction)
- Factory Seam Strength

Results showed that all of the samples had physical characteristic properties above or just below the minimum physical characteristics of 45-mil EPDM membrane being manufactured today. Samples are currently being heataged and will be tested at prorated life spans of 40, 50 and 60 years.

"These test results of advanced-aged EPDM membranes confirm the results of earlier studies — that EPDM withstands the effects of climate extremely well," said Mike DuCharme, director of product marketing for Carlisle SynTec, and chairman of the board for the EPDM Roofing Association. "The results also indicate that service lives of EPDM roof systems that are properly designed, installed and maintained can approach or exceed 40 years of service life."

The study continues with heat aging applied to the samples to simulate exposures of an additional 10, 20 or 30 years, essentially "extending the lives" of the samples to 40, 50, or 60 years.

"These additional tests should provide supporting evidence of the likelihood of EPDM membranes achieving field service lives of 40 to 60 years with proper installation and maintenance," said Bill Tippins, EPDM product manager for Firestone Building Products and a member of the ERA Technical Committee. "It's also important to note that these tests were conducted solely on 45-mil membrane. It is fair to assume that roof systems utilizing 60- or 90-mil EPDM can have service lives of 50 years or more."

Further details on the study can be found athttp://epdmroofs.org/research_resources/index.shtml#longterm.

With nearly 50 years of success as a roof system of choice for low-slope applications, EPDM is the leading roofing choice of architects, roof consultants and contractors for both new construction and replacement roofing

projects. To date, more than 20 billion square feet of EPDM roof systems have been installed on more than 500,000 warranted rooftops.

The EPDM Roofing Association (ERA) is the first trade association solely representing the manufacturers of EPDM single-ply roofing products and their leading suppliers. ERA provides technical and research support to the public and the construction industry, and communicates the longstanding attributes, consistency and the value proposition of EPDM rubber membrane roofing materials.