CHEMICAL FABRICS AND FILM ASSOCIATION > VINYL ROOFING DIVISION

NEWS RELEASE July 21, 2005

DURABILITY RESEARCH FINDS VINYL ROOFING RANKS HIGH AMONG COMMON MATERIALS IN AGING COMPARISONS

A multi-year study is showing that roofing membranes made of thermoplastic vinyl outperform most alternative materials in withstanding the elements, the Vinyl Roofing Division of the Chemical Fabrics and Film Association announced.

Results of the study comparing the relative durability of 12 roofing materials after four years of exposure in three climate zones were presented at the International Conference on Durability of Building Materials and Components in Lyon, France.

The study is the third in a series; the first documented the results of exposure to various artificial aging procedures, and the second, the results of two years of field exposure. The researchers have been measuring changes in the physical properties of each material sample before and after exposure to the elements at U.S. Department of Defense sites in Phoenix, Ariz. (hot and dry); Key West, Fla. (hot and humid); and Champaign, Ill. (moderate, mid-continent climate).

The two vinyl membranes studied ranked first and third in Phoenix and Key West, and second and fifth in Champaign. Researchers want to determine the parameters that can be considered predictive of the long-term performance of roofing membranes in service.

The study was conducted by engineering firm Simpson Gumpertz & Heger Inc. (Waltham, Mass.), the U.S. Army Corps of Engineers Construction Engineering Research Lab (Champaign, Ill.), and the National Research Council of Canada (Ottawa, Ontario).

Researchers collected data on various performance measures under identical conditions across the material samples, producing an "apples to apples" comparison that is unusual with building materials. When the study concludes, six years of data will have been compiled.

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Tests compared membranes made of vinyl; asphalt-glass fiber felt built-up; thermoplastic polyolefin (TPO); atactic polypropylene polymer modified asphalt; styrene-butadiene-styrene (SBS) polymer modified asphalt; ethylene-propylene-diene (EPDM) rubber and PVC alloy.

Researchers rated the performance of each membrane on such parameters as thermal expansion, loadstrain properties, water absorption, puncture resistance and glass transition temperature. Membranes in each location were ranked from best to worst on a scale of 0-100, with 100 being the best, after averaging the values of all measures.

Vinyl membranes achieved a ranking of 83.9 (#1) and 78.6 (#3) in Phoenix, 82 (#1) and 77.7 (#3) in Key West, and 78.7 (#2) and 71.1 (#5) in Champaign.

_	Phoenix		Key West		Champaign	
	Rating	Rank	Rating	Rank	Rating	Rank
Vinyl A	83.9	1	82.0	1	78.7	2
Vinyl B	78.6	3	77.7	3	71.1	5
Mean of	71.8		72.2		71.1	
all 12						
samples						

To review the study, go to the Library link at <u>www.vinylroofs.org</u> and click on "Predictive Service Life Tests for Roofing Membranes."

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For further information, contact:

Jay Thomas (781) 828-5400 Sarnafil, Inc.

or

Wendy Schweiger (216) 781-2400 Edward Howard & Co.

The Chemical Fabrics & Film Association is at 1300 Sumner Avenue, Cleveland, OH 44115-2851 Phone (216) 241-7333, Fax: (216) 241-0105, E-mail: <u>cffa@chemicalfabricsandfilm.com</u>, or visit our web site at <u>www.chemicalfabricsandfilm.com</u>