

Sarnafil

Stands the Test of Time

Roofing Longevity Study

SEPTEMBER, 2006

SARNAFIL - PROVEN PERFORMANCE

Milestone Management Process™ creates peace of mind for building owners

When you focus on being the best—and not necessarily the biggest—sometimes it takes a little time to tell your story. But when you do get your chance, if you've executed properly, the results can be amazing.

Sarnafil recently completed a comprehensive research study of its oldest roofing installations in an effort to measure and document the performance of its products over time. The study results, coupled with Sarnafil's Milestone Management Process, is a powerful value package that should be seriously considered by anyone in the roofing business.

Our parent company, Sarna, was launched in 1958 by a well-respected chemist whose goal was to manufacture a diversified line of polymeric goods. The Sarnafil division was created in 1961 to meet the growing demand for high quality, polymeric roofing and waterproofing membranes. Production of roofing material began in earnest in 1964, with Sarnafil becoming well known worldwide by providing the roofing material on the large tent-like pavilions at Expo '64.

Anticipating, then exceeding, standards.

In the early 1960's, decades before standards for vinyl roofing membrane had even been thought about, Sarnafil's chemists and engineers crafted products that were superior — so superior that the company has maintained the same basic chemical formulation for 40 years. The quality of these products was validated by Sarnafil's study of its oldest roofs. Weathering time, stress, and the elements for a generation, most of the Sarnafil samples recently tested by the Canada's National Research Council (NRC) exceeded today's standards.



Charrette Corporate Headquarters
Woburn, Mass

28 yrs

Situation In 1978, Charrette opened its headquarters which housed corporate offices, a retail store and a 200,000 square foot warehouse. To protect its valuable inventory, Charrette replaced the existing roof with a high-quality Sarnafil G410 membrane.

Performance Today, after 28 years, the roof remains in excellent condition. "We haven't had any problems with the roof," said Roy Demmons, facility manager at Charrette. "It's performing very well – and if you can get more than 20 years out of a roof, you're looking at a big cost savings."



Federal Aviation Administration Building
Euless, Texas

19 yrs

Situation In 1984 the roof of the large FAA air control center in Euless, TX was failing. To protect its valuable equipment and staff, the FAA selected a durable, long-lasting Sarnafil S327 mechanically attached membrane.

Performance James Wharry, Partner at Wharry Engineering, accompanied Sarnafil to witness the inspection and sampling of the FAA roof. He confirmed its excellent condition. "Given the age of the roof, I was truly impressed with the product."

"After nearly 20 years, the roof is still in great condition. A roof that lasts as long as this one has is a very cost effective solution. We think it's great."

Andrea Johnson, General Manager
Plaza Towers, Atlanta Georgia

(Commenting on the Building's
20 year old Sarnafil roof)

Sarnafil sent a cross-section of 31 samples from 25 Sarnafil installations across North America, from all regions and climates, to the NRC. The average age of the samples was 18.4 years. The samples were tested according to ASTM 4434, the standard for new vinyl roofing membranes established in 1985. According to the standard, the samples were tested for thickness, tensile strength, elongation, linear dimensional change, low temperature flexibility, and seam strength.

Proven Performance History

Amazingly, 94% of the samples (29 out of 31) still met the minimum thickness standards, after more than 18 years in the field. 97% (30 out of 31) met the requirement for linear dimensional change (shrinkage) and 74% (23 out of 31) of the samples passed the cold temperature flexibility test conducted at -20°C (-4°F). In addition, in the seam-strength tests 100% of the seams remained intact. Truly an impressive performance for roofs of this age.

Most importantly, all of the roofs sampled were still providing leak-free protection for the building owners.

For example, the 26-story Plaza Towers condominium complex in Atlanta, which was built in 1969, boasts breathtaking views, a 24-hour doorman and the privacy of only four homes per floor. Just walking distance from Atlanta's beloved Duck Pond in the Garden Hills area of Buckhead, the Plaza Towers offers comfort, security

Summary of all Sarnafil PVC Samples				
Sample ID	Project Location	Membrane Type	Year Installed	Years Exposed
1A	Canton MA	G410-12	1979	22
1D	Canton MA	S327-12	1979	22
2A	Wenham MA	G410-12	1984	17
2D	Wenham MA	S327-12	1984	17
3A	Woburn MA	G411-12	1983	18
4B	Dickinson TX	G410-12	1984	17
5B	Tyler TX	G410-12	1981	20
5C	Tyler TX	S327-12	1981	20
6A	Euless TX	S327-12	1984	17
7A	City of Industry CA	G410-12	1979	22
8A	EL Segundo CA	G410-12	1982	19
9B	Mountainview CA	S327-12	1983	18
10B	Lacey WA	G410-12	1982	19
11B	FT. Steilacoom WA	G410-12	1983	18
12A	Atlanta GA	S327-12	1986	15
13A	Jacksonville FL	S327-12	1982	19
14A	Appleton WI	S327-12	1985	16
15B	Mt. Prospect IL	G410-12	1981	20
15D	Mt. Prospect IL	S327-12	1981	20
16A	Park Ridge IL	S327-12	1984	17
17B	Hackensack NJ	S327-12	1986	15
18A	Englewood NJ	G410-12	1985	16
18C	Englewood NJ	S327-12	1985	16
19A	Iowa City IA	S327-12	1982	19
20B	Davis CA	G410-12	1981	20
21A	Haileybury ON	G410-12	1981	20
21C	Haileybury ON	S327-12	1981	20
22A	Hamilton ON	S327-12	1984	17
23A	Alouette QUE	G410-12	1983	18
25A	Sarnia ON	G410-12	1984	17
26	Calgary AB	G410-12	1982	19

Notes:
1. 31 samples, 25 locations
2. S refers to polyester reinforced, typically installed in mechanically fastened applications
3. G refers to fiberglass reinforced, typically installed in adhered applications
4. 12 refers to 1.2 mm or 47.4 mils in thickness



Robbins Hall, University of California, Davis
Davis, California

25 yrs

Situation Robbins Hall on the UC Davis campus houses laboratory space & teaching laboratories for environmentally sensitive plant biology study. These critical learning spaces have been covered by a Sarnafil 48 mil G410 membrane since 1981

Performance The Facilities department at UC Davis conducts roof inspections every six months. Pete Lentino, superintendent for facilities reports, "I know we haven't had any problems with the roof on Robbins Hall, though we have had problems with some of our other roofs that aren't covered with Sarnafil."



Plaza Towers
Atlanta, Georgia

20 yrs

Situation In 1986 the 26-story Plaza Towers luxury condominium complex replaced its roof. Today the same Sarnafil S327 roof membrane protects the building and its occupants.

Performance "After nearly 20 years, the roof is still in great condition," said Andrea Johnson, General Manager at the Plaza Towers. "A roof that lasts as long as this one has is a very cost effective solution. We think it's great." Tested according to ASTM 4434, the standard for new vinyl roofing membrane, confirmed the outstanding condition of the Sarnafil membrane.

and a neighborhood atmosphere. To keep its occupants safe and secure from the elements, the luxury high-rise building got a new roof in 1986.

"After nearly 20 years, the roof is still in great condition," says Andrea Johnson, General Manager at the Plaza Towers. "A leaking roof would be a disaster in a place like the Plaza Towers, where people expect a high-quality living environment. We haven't had any major problems with our roof – we're very pleased with it."

The roofing experts who were invited to participate in the sampling of the roofs were also impressed with what they saw.

In 1978, a company called Charrette opened its headquarters building in Woburn, Massachusetts, providing artists, designers and architects from all over the country with specialized supplies and equipment. The building housed corporate offices, a retail store and a 200,000-square-foot distribution warehouse. "I knew about the Charrette job when the roof was installed and was curious how it was fairing," said Ralph Noblin, president of Noblin & Associates, L.C. a consulting engineering firm. "After being exposed to the elements for 26 years, I was impressed with how good it looked and how well it was performing, even today."

Proven Materials: Part of Sarnafil's Unique Milestone Management Process

Sarnafil's proprietary Milestone Management Process provides peace of mind to building owners by helping to assure a high quality roof installation. And only Sarnafil is uniquely positioned to deliver.

A completed, high quality roofing or waterproofing application occurs when the manufacturer participates in all three of the major milestones of a roofing or waterproofing project: proven materials, expert assistance, and skillful workmanship. The NRC study certainly validates that Sarnafil has proven materials. And the fact that Sarnafil engineers and chemists diligently maintain its formulae and quality control means that Sarnafil's product performance remains consistent over time. Our proven track record stems from the fact that Sarnafil has used the same basic formulation in its membrane production processes since 1964.

The second tenet is Expert Assistance. Our skilled technical experts make Sarnafil stand apart from other manufacturers. We offer design assistance to architects, specifiers, and roof consultants upon request. We review purchase documentation from the installer to ensure the materials requested are complete – and the best suited to the project. And finally, our highly trained technicians regularly visit job sites to ensure that Sarnafil's high standards are being maintained and to provide demonstrations and offer advice if required. Maintaining strict control over the installation process means that Sarnafil quality is carried through from start to finish.

Milestone Management



From design and installation to final inspection, Sarnafil's Milestone Management process ensures your completed roofing or waterproofing job is done right.

A high quality roofing or waterproofing application requires proven materials, expert design assistance and skillful workmanship. Sarnafil's high quality, proven membranes, expert technical personnel and direct-to-contractor sales approach makes us uniquely qualified to deliver.

When you install a Sarnafil roofing or waterproofing system, you're not simply buying a membrane. You're buying a total system solution. Our Milestone Management process is your guarantee of superior quality, precision installation and unrivaled reliability.

"I know we haven't had any problems with the roof on Robbins Hall, though we have had problems with some of our other roofs that aren't covered with Sarnafil."

Pete Lentino, Superintendent for Facilities
UC Davis Campus

Commenting on the 23 year old Sarnafil roof on Robbins Hall

Rounding out the Milestone Management triumvirate is Skillful Workmanship. Unlike most other roofing manufacturers, Sarnafil does not sell through distributors, thus maintaining control over who installs our products. Instead, we sell directly to a select group of trained, authorized applicators. This helps assure that people with only the highest level of expertise install a Sarnafil roof.

The Bottom Line: More Value

Purchasing a roof should be a long-term decision based on choosing the best value. Milestone Management, Sarnafil's formula for success, provides the building owner with peace of mind. They know that they have selected a roofing system from a company committed to quality and proven through the test of time.

**For a copy of the report,
"Field Investigation and Laboratory
Testing of Exposed Vinyl
Roof Systems," contact Sarnafil at
800-576-2358**



Copps Coliseum
Hamilton, Ontario, Canada

22 yrs

Situation Copps Coliseum opened in 1985. It boasts 117,000 square feet of exhibit space, seating for up to 19,000, and a durable, high quality roof system from Sarnafil.

Performance "We're very happy with the Sarnafil," says Jerry van den Heuvel, Copps' Manager of Building Operations since it opened. "We have budgeted funding in anticipation of replacing the roof – but so far, we haven't had any problems." Tests confirmed the outstanding condition of the Sarnafil membrane on the Copps Coliseum after 20 years of service.

IN RECOGNITION

We would like to thank the following roofing consultants/engineers that helped with site visits and test sampling:

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About Sarnafil Inc.

Sarnafil is an international manufacturer of high-tech plastic membranes for a wide range of applications including roofing, waterproofing, and civil engineering. Since 1964, Sarnafil has manufactured close to 4 billion square feet of thermoplastic roofing and waterproofing membrane in Switzerland, China and the U.S. Sarnafil roofing and waterproofing systems protect some of the world's most valuable structures and treasures, including schools and universities, libraries, museums, hospitals, commercial and government buildings, retail buildings and Olympic stadiums. For more information about Sarnafil in the U.S., visit www.sarnafilus.com

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