# TABLE OF CONTENTS

1. INTRODUCTION TO GREEN ROOFS
2. GREEN ROOF BENEFITS
3. TYPES OF GREEN ROOF INSTALLATIONS
4. WHY CHOOSE A SARNAFIL GREEN ROOF?
5. SARNAFIL GREEN ROOF 3D DIAGRAM
6. SARNAFIL OVER CONCRETE DECK – ADHERED SYSTEM
7. SARNAFIL OVER CONCRETE DECK – GRID SYSTEM
8. SARNAFIL OVER METAL DECK – LOOSE–LAID SYSTEM
9. PROJECT PROFILES
10. PHOTO GALLERY
11. GREEN ROOF RESOURCES
12. QUICK REFERENCE GUIDE
INTRODUCTION TO GREEN ROOFS

With the increased desire for high-performance buildings and sustainable building products, green roofs have become a ‘growing’ roofing option in North America. A green roof, also known as a garden roof, vegetated roof or eco-roof, is simply a planted area on a flat or sloped roof.

While conventional gardens on a rooftop usually consist of a few pots and planters, a green roof system can cover the whole roof area with the cultivation of plant life. And, depending on the type of green roof, you can have everything from low growing grass, herbs and sedums to trees, shrubs and more.
GREEN ROOF BENEFITS

Storm Water Retention
Green roofs lessen erosion and storm water burden on sewer systems.

Waterproofing Membrane Protection
A green roof protects the waterproofing membrane from damaging UV rays and freeze-thaw cycling, extending its lifespan.

Sound Insulation
Soil and plants are great sound insulators.

Reduction in Urban Heat Island Effect
Dark roofs hold onto the heat while plants naturally cool their surrounding environments.

Improved Air Quality
Green roofs filter air by absorbing and converting carbon dioxide into oxygen.

Aesthetics
Green roofs are visually stimulating and make great areas for recreation and pleasure.

Reduced Energy Consumption
Green roofs can reduce peak energy demand by lowering a building’s heating and cooling costs.

LEED and Green Globes
Green roofs contribute to certification within these types of programs.

Increased Property Value
Installing a green roof can increase property value by providing a valuable building asset.

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TYPES OF GREEN ROOF INSTALLATIONS

**EXTENSIVE**
- Growth medium 1-6 inches
- Lightweight 12-35 lbs/sf
- Low growing plants
- Low maintenance
- Low water requirements
- Usually non-accessible
- Slopes up to 30 degrees

**INTENSIVE**
- Growth medium 6 or more inches
- Heavier weight over 35 lbs/sf
- Tree, shrubs, gardens and more
- Higher maintenance
- Irrigation usually necessary
- Designed for human recreation
- Only used on low slopes
WHY CHOOSE A SARNAFIL GREEN ROOF?

PROVEN PERFORMANCE
- An industry veteran, Sika has produced more than 15 billion square feet of membrane worldwide
- Leader in thermoplastic membrane manufacturing expertise with more than 50 years of production history
- Material that consistently ranks as the highest quality thermoplastic membrane in independent testing

WATERTIGHT INTEGRITY
- Permanent watertight flashings and details with hot-air welded seams and flashings
- The Sarnafil G 476 membrane is designed for sub-grade environmental scenarios such as constant dampness, ponding water, high and low alkaline conditions, exposure to plant roots, fungi and bacterial organisms

MILESTONE MANAGEMENT
- The Sika manufacturing process uses only the highest quality materials to produce a montolithic, non-laminated membrane that offers excellent waterproofing and dimensional stability
- Sika is involved at each major milestone, offering design assistance to architects and specifiers if needed
- Sika sells directly to a select group of trained, authorized applicators – only the best are invited to join the team

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Sika has green roof systems for use on both concrete and metal deck applications, providing the flexibility to choose the system that best fits your building’s design criteria.
SARNAFIL OVER CONCRETE DECK – ADHERED SYSTEM

The adhered system uses the robust Sarnafil G 476 Self-Adhered membrane, which is a composite sheet comprised of the heat-weldable G 476 waterproofing membrane with a closed-cell foam backing.

Sarnafil G 476 SA is best suited for new construction. It can also be used on certain renovation projects where the old waterproofing system can be removed, or where a new concrete topping slab is placed over the structural deck.

ADVANTAGES:

- Robust, factory-manufactured composite sheet
- Conforms to minor surface irregularities and mitigates water migration under the sheet
- Improved applicator productivity and job site safety
SARNAFIL OVER CONCRETE DECK - GRID SYSTEM

For renovation projects where the substrate is contaminated or removal of the existing waterproofing system is not practical, Sika offers the grid system. The grid system combines all of the advantages of a loose-laid membrane installation with the added security of adhered membrane grid strips.

The grid strips compartmentalize the waterproofing system into smaller areas, effectively limiting the scope of vegetated cover removal if a problem develops.

ADVANTAGES:

- Adhered grid strips act as a sub-membrane waterstop
- Grid system can be installed economically over existing waterproofing systems with minimal deck preparation
- Optional control drains allow active system monitoring and facilitate repairs
The most common design approach over a metal deck is to build a “conventional” loose-laid roof assembly under the vegetated cover. The rigid insulation material is typically extruded polystyrene, which is resistant to moisture absorption and has been used in green roof applications for decades.

After the Sarnafil membrane is installed, it is covered by a drainage composite followed by the vegetated cover.

**ADVANTAGES:**

- Insulation is protected from the elements
- Insulation will not float since it is under the waterproofing membrane
- Allows the designer to create slope in the roof assembly
PROJECT PROFILES

Click on an image to open its Sika at Work project profile.

ATWATER COMMONS DINING HALL
Middlebury College - Middlebury, Vermont

KARMANOS CENTER FOR NATURAL BIRTH
Royal Oak, Michigan

THE LOFTS AT RIVER EAST
Chicago, Illinois

MERCY HEALTH-WEST HOSPITAL
Cincinnati, Ohio

MUSIC CITY CENTER
Nashville, Tennessee

SAN DIEGO COUNTY OPERATIONS CENTER
San Diego, California

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PHOTO GALLERY

CHINATOWN PUBLIC LIBRARY
Chicago, Illinois

CHICAGO CITY HALL
Chicago, Illinois

MCARTHUR/MCCOLLUM AT HBS
Boston, Massachusetts

SAVE THE BAY CENTER
Providence, Rhode Island

TARGET CENTER
Minneapolis, Minnesota

ZURICH INSURANCE NA HEADQUARTERS
Schaumburg, Illinois

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GREEN ROOF RESOURCES

- Green Roof Brochure
- Green Roof Video
- Green Roof Webpage
- Sarnafil Video
- Sustainability Video
- Technical Documents
- Waterproofing Membrane Webpage
- Waterproofing Systems Webpage
- Why Sika Roofing?

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GREEN ROOF SYSTEMS PROVIDE

- Storm Water Retention: Green roofs greatly lessen erosion and storm water burden on sewer systems
- Reduction in Energy Consumption: Green roofs can reduce peak energy demand by lowering a building's heating and cooling costs
- Reduction in the Urban Heat Island Effect: Dark roofs hold onto the heat while plants naturally cool their surrounding environments
- Waterproofing Membrane Protection: A green roof protects the waterproofing membrane from damaging UV rays and freeze-thaw cycling, extending its lifespan.
- Improved Air Quality: Green roofs filter air and produce oxygen
- LEED and Green Globes: Green roofs contribute to certification within these programs
- Sound Insulation: Soil and plants can be great sound insulators
- Aesthetics: Green roofs are visually stimulating and can make great areas for recreation and pleasure
- Increased Property Value: Installing a green roof can increase property value by providing a valuable building asset

SARNAFIL GREEN ROOF SYSTEMS PROVIDE

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- Leader in thermoplastic membrane manufacturing expertise with more than 50 years of production history
- Material that consistently ranks as the highest quality thermoplastic membrane in independent testing

WATERTIGHT INTEGRITY

- Permanent watertight flashings and details with hot-air welded seams and flashings
- The G476 membrane is designed for sub-grade environments such as constant dampness, ponding water, high and low alkaline conditions, exposure to plant roots, fungi and bacterial organisms.

MILESTONE MANAGEMENT

- Proven Materials: The Sika manufacturing process uses only the highest quality materials to produce a monolithic, non-laminated membrane that offers excellent waterproofing and dimensional stability
- Expert Assistance: We're involved at each major milestone, offering design assistance to architects and specifiers if needed
- Skilful Workmanship: We sell directly to a select group of trained, authorizes applications - only the best are invited to join our team.
WHO WE ARE

The commercial roofing industry has relied on thermoplastic single-ply membranes from Sika for more than 50 years to achieve sustainable roofing and waterproofing solutions.

Sika is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, facades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting load-bearing structures. Sika’s product lines feature high-quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply. Please consult the Product Data Sheet prior to any use and processing. ISO 14001: 2004-Compliant. ENERGY STAR® for roofing products is only valid in the United States. ENERGY STAR is a trademark of the U.S. EPA. LEED® is a trademark of the U.S. Green Building Council. Green Globes® is a trademark of the Green Building Initiative.

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