

## **The Sarnafil® AT FSH Self-healing Technology**

### **Revolutionizing Roofing Membranes**

Roofing technology has seen a remarkable advancement with the emergence of self-healing solutions, thanks to the power of water-reactive polymers. With the advent of this innovative technology, roofs now possess the remarkable ability to heal themselves, offering a reliable way to protect critical building assets. Explore the fascinating science behind water-reactive polymer technology and what factors to consider when deciding whether to use them on your projects.

#### **Understanding Water-Reactive Polymer Technology**

At the heart of water-reactive polymer technology is the hydrophilic nature of the specially formulated polymer used in Sarnafil AT FSH Self-healing roofing membranes. This polymer is designed to undergo a transformative process upon contact with water, triggering a series of reactions that facilitate self-healing.

Water-reactive polymers are designed to be hydrophilic, meaning they have a strong affinity for water. When water penetrates the membrane through cracks or punctures, the hydrophilic polymer molecules attract and bind with the water molecules. This contact acts as a stimulus that activates the self-healing mechanism within the polymer, initiating a chemical response. The polymer then swells to fill the cracks or punctures, effectively healing them and preventing further moisture ingress.

As the water-reactive polymer fills the damage, it undergoes a transformation from a flowing state to a solid state. This solidification process occurs as the water within the polymer evaporates or drains away. The solidified polymer then forms a barrier that reinforces the damaged area. This process of self-healing takes place swiftly and efficiently, allowing the roofing membrane to autonomously mend minor damages and protecting the building and assets inside it until the roof can be repaired.

#### **Applications of Water-Reactive Polymer Technology in Roofing Systems**

Water-reactive polymer technology offers exceptional versatility, making it suitable for a wide range of building applications. However, it particularly excels in environments where any water ingress poses a critical risk. Buildings such as data centers, art galleries, pharmaceutical manufacturing facilities, and others with high-value assets can greatly benefit from the self-healing aspect of this technology.

By providing an added layer of protection, the Sarnafil® AT FSH Self-healing capability ensures that water is effectively prevented from damaging sensitive equipment, valuable artwork, or critical pharmaceutical processes. Even in situations where water intrusion occurs, the self-healing properties allow the roofing membrane to seal itself, mitigating damage until the issue is detected during the next inspection and maintenance cycle. This not only safeguards the assets and minimizes disruption, but also provides peace of mind to building owners and operators, knowing that potential water-related risks are actively addressed and resolved.

### **Considerations and Limitations**

While water-reactive polymer technology offers impressive self-healing capabilities and numerous benefits for roofing membranes, it is essential to consider certain factors and limitations associated with its implementation. Understanding these considerations can help stakeholders make informed decisions and maximize the effectiveness of this innovative technology. Key areas to consider include:

### **Installation and Expertise**

Proper installation of water-reactive polymer-based roofing membranes requires expertise and adherence to manufacturer guidelines. It is crucial to work with trained professionals who have experience in handling and installing this specialized material. Following recommended installation practices ensures optimal performance and longevity of the Sarnafil® AT FSH Self-healing capabilities.

### **Maintenance and Inspections**

While water-reactive polymer technology reduces the frequency of repairs, regular inspections and maintenance are still essential. Periodic inspections allow for the early detection of any significant damages or issues that may require attention beyond the self-healing capabilities of the membrane. Routine maintenance ensures the overall performance and effectiveness of the roofing system.

### **Scope of Sarnafil® AT FSH Self-healing**

Water-reactive polymer technology primarily addresses minor cracks and punctures in roofing membranes. While it excels at self-healing small breaches, larger or more extensive damages may require additional intervention and repair beyond the self-healing capabilities of the material. It is important to understand the limitations of the technology in addressing severe or significant roofing issues.

### **Compatibility and Integration**

Water-reactive polymer technology should be compatible and integrated with other roofing components, such as flashings, drainage systems, and insulation. Proper compatibility ensures a

seamless integration of the self-healing membrane into the overall roofing system, enhancing its effectiveness and durability.

### **Environmental Considerations**

Water-reactive polymer technology generally uses environmentally friendly materials. However, it is essential to evaluate the specific composition and environmental impact of the chosen roofing membrane. Look for certifications and sustainable attributes to ensure the technology aligns with the project's environmental goals and regulations.

### **Conclusion**

Water-reactive polymer technology represents a remarkable innovation in the roofing industry. With its remarkable ability to autonomously heal minor cracks and punctures, this innovative technology provides an innovative yet reliable solution for building owners and contractors seeking to protect high-value or critical assets.