

# LeafDefier and LeafDefier XL

Green-Buildings' team of accredited green building professionals performed a benchmark analysis of LeafDefier against Green-Buildings' proprietary Green Building Accepted Environment Principles Process™ and determined that LeafDefier may:

- A. **Improve Building Durability**
- B. **Enhance Air Quality**
- C. **Improve Stormwater Management**



## EXECUTIVE SUMMARY

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The LeafDefier and LeafDefier XL (“LeafDefier”), manufactured by Monzi Inc., is an innovative gutter protection system. It consists of a specially-treated lightweight and flexible insert that is uniquely shaped and cut to fit snugly into your gutter. Once installed, LeafDefier allows water and fine particulate matter to flow through the gutter system freely, but keeps leaves and other debris out. According to the manufacturer, even during the heaviest of rainstorms, the water flows through the LeafDefier® into the gutter valley and out the downspout. Leaves and debris slide off the surface or just dry up and blow away. In the process, your gutters remain clean and clear of clogs.



Green-Buildings.com (“Green-Buildings”) worked with Monzi, Inc. to complete a review of LeafDefier. Green-Buildings believes that LeafDefier meets several criteria that are important aspects of accepted green building principles and, as such, the product may be considered applicable to high-performance building.

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## DETAILS

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### ***A. Improving Building Durability:***

A key green building principle is the reduction of waste by improving building quality and durability. Often, the greenest buildings are those that do not need to be replaced. Products that help promote a durable design and ongoing performance may result in a building that will last longer, thereby avoiding future waste.

Moisture, in all its physical forms, is regarded by some as the most significant threat to building durability and long-term performance. The most common causes of moisture for buildings include not only poor site design and landscaping, but also the improper maintenance of gutters and downspouts to direct water away from roof eaves, walls, and

foundations. In fact, over time, the failure to maintain and monitor gutters may result in repeated or persistent clogging leading to roof water overflows that may eventually cause foundation cracking and failures.

**By helping to reduce clogged gutters, reducing or eliminating standing water and improving water flow through the gutter system, LeafDefier may provide a critical line of defense against foundation failure and other quality issues that may be caused by moisture problems in buildings. LeafDefier may also reduce the amount of maintenance required as compared with conventional, non-treated gutters. Therefore, by reducing or eliminating water damage as one of the primary causes of deterioration, LeafDefier may improve building durability and reduce waste, key goals of all green building initiatives.**

### ***B. Enhance Air Quality:***

Good indoor air quality enhances resident health and comfort and is an essential goal for any green building. A high quality indoor environment requires careful design, which includes use of products that help reduce exposure to potential harmful air pollutants and the presence of biological contaminants by controlling moisture, eliminating excessive indoor humidity levels in enclosed spaces.

The U.S. Environmental Protection Agency (“EPA”) estimates that indoor pollution levels may be two to five times (potentially up to one hundred times) higher than outdoor pollution levels. Uncontrolled moisture in extremely tight building envelopes, as may be the case with high-performance buildings, may be of even greater concern. Clogged gutters may cause excess moisture to build up in building envelopes and foundations resulting in mold accumulating in drywall, sub-floors, carpets or the roofs of buildings. Clogged gutters may also lead to crawlspace dampness and flooded basements, which are also potential sources of biological pollutants, such as mold, mildew and dust-mites.

In addition to mold damage to your home, a major environmental concern centers on the use of harmful pesticides to combat mosquito and other pests which may be attracted to moisture. Rain gutters clogged with soggy leaves and debris may attract insects and become a breeding ground for mosquitoes and other pests, such as termites. Mosquitoes are drawn to standing water because they need water to complete their developmental cycle.

**LeafDefier may improve environmental quality by maximizing consistent water flow through the gutter system and, by controlling outdoor moisture, LeafDefier may eliminate moisture penetration to the building envelope, a key cause of mold and other biological pollutants in buildings. Furthermore, in field tests and in a controlled entomological study, the use of LeafDefier obviated or reduced the need for pesticide treatments to reduce mosquito infestation by eliminating standing water and debris in gutters which may be a source of insect breeding.**

### ***C. Improve Stormwater Management***

Stormwater runoff is a significant cause of pollution to streams, rivers, lakes, bays and oceans in the United States. Proper green building site design attempts to effectively manage or significantly reduce the amount of stormwater runoff by achieving a reasonable balance of both natural and man-made stormwater management methods.

Actively managing stormwater runoff requires, among other things, controlling water flow and distribution, incorporating environmentally sound landscaping techniques, limiting site imperviousness and introducing storage and/or treatment systems that will allow rain to soak into the ground instead of running straight to a sewer.

Clogged gutter systems make it very difficult to properly divert stormwater, which in turn may increase stormwater runoff and lead to overflows that may cause landscaping erosion.

**By eliminating leaks and/or blockages that may prevent the free flow of water through the gutter system, LeafDefier may be an important tool for stormwater management, a key component of green building. Gutter improvement systems, such as LeafDefier, may help to evenly distribute water flow across a greater surface area around the perimeter of a building. This may result in less stormwater runoff and thereby reduce the amount of water that leaves site boundaries for sewer system and ultimately causing damage to water quality. Incorporating more effective gutter management system features, such as that afforded by LeafDefier, may be an important feature of any green building operations and maintenance plan.**

### **CONCLUSION**

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LeafDefier by Monzi Inc. meets three significant criteria used in green building initiatives. By reducing or eliminating clogged gutters and improving water flow through the gutter system, LeafDefier may help reduce waste by improving building durability. Additionally, LeafDefier may reduce or obviate the need for harmful pesticides in combating pest infiltration and reduce harmful levels of moisture in building walls, roofs and foundations, thereby being potentially helpful in reducing biological contaminants and enhancing indoor air quality. Finally, LeafDefier may aid in effective stormwater management, by increasing the performance of a gutter system's ability to distribute water across a larger surface area, thereby managing the rate and quantity of stormwater more efficiently.

Product Reviewed by: Rob Freeman, Jr., LEED AP