

Roof Maxx

Environmental Benefits: Testing Results

The Ohio State University analyzed the environmental benefits of using Roof Maxx to delay roof replacement.¹ Results indicate significant reductions in roofing material waste and CO₂-equivalent (CO₂-eq) emissions.

WASTE AND EMISSIONS

The average asphalt roof must be replaced after 15–30 years. As a result, building construction and demolition in the United States annually produce 11–13 million tons of asphalt shingle debris,² and roughly 90% of that material goes to landfills.³

The status quo presents numerous environmental issues. Roofing debris occupies significant space in landfills and takes up to 500 years to decompose, as asphalt shingles consist of non-biodegradable materials such as tar, plastics, and rubbers. As the materials disintegrate, they release harmful chemicals into the environment. In addition, replacing a roof generates greenhouse gas (GHG) emissions through the manufacturing, transportation, installation, and disposal of roofing materials.

Sealing and rejuvenating shingles helps avoid emissions and toxic waste that would otherwise go to landfills.

ANALYSIS

Ohio State determined the tons of waste and CO₂-eq emissions avoided when one application of Roof Maxx is used to postpone roof replacement for five years. The waste calculations assumed an average roof size of 3,200 ft² and asphalt weight of 2.4 lb/ft². GHG emissions calculations considered the materials and energy used to produce and transport the Roof Maxx needed to treat 3,200 ft² of roof. Totals were compared with the emissions that would be associated with roof replacement for the same house. The table below shows results for one house and for 500,000 houses (a hypothetical scenario in which 10% of U.S. single-family homes defer roof replacement by applying Roof Maxx treatment).

	One House	500,000 Houses
Waste Avoided (tons)	0.6 – 1.3	320,000 – 640,000
GHG Emissions Avoided (metric tons CO ₂ -eq.)	0.33 – 0.68	173,000 – 347,000

- 1 Juliana Vasco-Correa and Ajay Shah, "Economic and Environmental Evaluation of Roof Maxx Application to aging asphalt roofing," The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, Ohio, October 2019.
- 2 EPA, "Construction and Demolition Debris Management in the United States, 2015," March 2020; "Construction and Demolition Debris Generation in the United States, 2014," December 2016.
- 3 Karen Edwards, "Recycled Shingles are Keeping Asphalt Out of Landfills," GAF, April 2020.

About Roof Maxx

Roof Maxx treatment is an earth-friendly, effective, and affordable alternative to roof replacement or the application of traditional roof sealants. Derived from soybean oil, this shingle sealer-rejuvenator is certified USDA BioPreferred. The treatment is spray-applied to asphalt-based roofing materials to extend service life up to 15 years. This breakthrough product re-saturates curled, leaky shingles, restoring pliability and flexibility, and enhances adhesion of the protective mineral granules.