



# ECO<sub>3</sub> TECHNOLOGY

Smog-Reducing, Granule-Surfaced Membranes

Roofing



## Improving Our Climate 3M™ Smog-Reducing Granules

Inspired by the power of the trees, SOPREMA's ECO<sub>3</sub> granule-surfaced membranes are a unique collaborative effort between 3M and SOPREMA for low slope roofing. This roofing granule is designed with a specialized photo-catalyst coating applied to the mineral that absorbs nitrogen oxide (NO<sub>x</sub>) gases in the atmosphere that are then cleaned and washed away by rainwater. This process reduces the amount of ground level pollutants, decreasing the greenhouse effect and creating healthier communities.

### Benefits

- Each 3,000 ft<sup>2</sup> of ECO<sub>3</sub> membrane has the approximate smog fighting capacity of 40 trees
- The smog-reducing ability of the granule is maintained over the life of the membrane
- ECO<sub>3</sub> granule-surfaced membranes contribute to cleaner, healthier communities

If you have any questions about this product or its installation, please contact your SOPREMA representative.

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## What are nitrogen oxides (NO<sub>x</sub>)?

Nitrogen oxide gases are harmful and irritating gases formed by the burning of fuels. These gases are emitted by many sources, including cars, trucks, power plants and other industrial production processes, and then released into the air. These gases react with Volatile Organic Compounds, or VOCs, in the atmosphere and sunlight to create what is commonly known as "smog" or ozone. This ground-level ozone or smog is unhealthy for humans, animals, and plants.

## How does the smog-reducing granule work?

The smog-reducing granule is coated with a specialized photocatalytic coating. The photocatalyst reacts in the presence of ultraviolet light (sunlight). This photocatalytic reaction absorbs the nitrogen oxides in the atmosphere and accelerates the oxidation process. This oxidation process creates water-soluble ions that are washed away by dew or rainwater.

To prove the technology for use in roofing, Lawrence Berkley National Laboratory conducted a study validating the efficacy of the photocatalytic material in reducing smog and contributing towards air purification.

## How much do smog-reducing granules impact the environment?

Every 30 squares of ECO<sub>3</sub> granule-surfaced membrane can offset the approximate emissions generated by driving 3,000 miles per year. This calculation varies depending on sunlight, humidity, and the abundance of NO<sub>x</sub> in the atmosphere.

For example, a 20,000 ft<sup>2</sup> commercial roof surfaced with ECO<sub>3</sub> granule-surfaced membranes has the ability to offset approximately 20,000 miles worth of car emissions annually. That is the power of 260 trees!

