ECO$_3$ TECHNOLOGY

SMOG-REDUCING, GRANULE-SURFACED MEMBRANES

SOPREMA®

SUSTAINABLE SOLUTION

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SOPREMA'S COMMITMENT TO SUSTAINABLE SOLUTIONS

For over 100 years, SOPREMA has been committed to the innovation and development of products that enhance performance and protect the environment. The EPA has published reports identifying dozens of cities around the country that have failed to meet National Ambient Air Quality standards for ground level ozone, or smog. SOPREMA's products aim to help the environmental efforts of reducing smog and improving air quality. 3M™ Smog-reducing Granules were designed to do just that.

What are nitrogen oxides (NOx)?

Nitrogen oxides are gases formed from emissions from motor vehicles, power plants and commercial and industrial operations. These gases react with sunlight and VOCs (volatile organic compounds) in the atmosphere to create what is commonly referred to as smog.

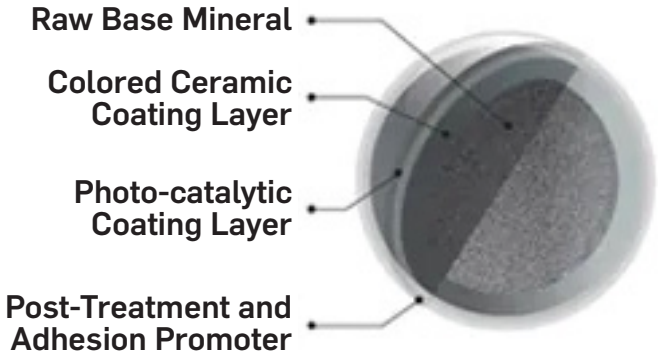
What are 3M™ Smog-reducing Granules?

Improving Our Climate

3M™ Smog-reducing Granules

3M Smog-reducing Granules are ceramic-coated minerals designed to have smog-reducing capability. SOPREMA's **ECO$_3$ GRANULE**-surfaced membranes utilize this technology for low-slope roofing applications.

These roofing granules are designed with a surfacing photo-catalytic coating that transforms nitrogen oxide (NOx) into water-soluble ions that are then washed away by rainwater; having the same smog-reducing effect as trees.



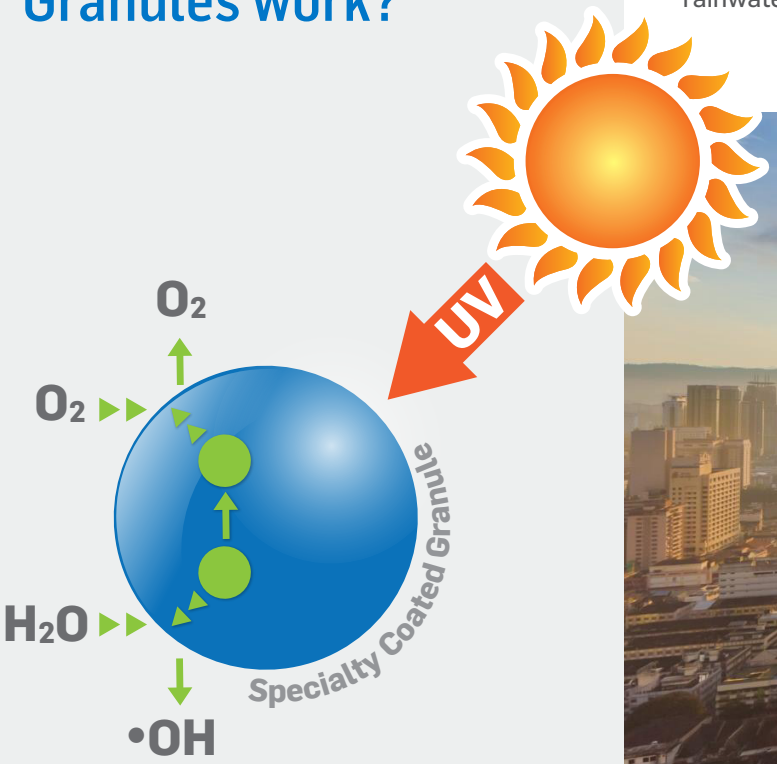
ECO$_3$ TECHNOLOGY
GRANULE-SURFACED MEMBRANES

FEATURES & BENEFITS

- **3M™ SMOG-REDUCING GRANULES** are tough, non-porous, weather and UV resistant, ceramic-coated base minerals.
- Sunlight activates the surface of the photo-catalytic granules to transform smog into water-soluble ions.
- Trusted protection and visual appeal join smog-fighting forces to remove smog pollutants that come in contact with the roof

How do 3M™ Smog-reducing Granules work?

When exposed to the sun's rays, the photocatalytic coating on the granules releases surface-bound radicals. Nitrogen oxides react with these radicals and create nitrate salt; a plant-usable form of nitrogen. The low level nitrate deposits are then washed away by rainwater or dew.



How effective are smog-reducing granules at reducing nitrogen oxides (NOx)?

ENVIRONMENTAL BENEFITS

- A 20,000 ft^2 (1859m^2) roof covered with **ECO_3 GRANULE**-surfaced membranes has the ability to offset approximately 8,000 miles worth of car emissions yearly. **That is the power of 120 trees!**

- The smog fighting ability of the granules are maintained over the life of the membrane.
- **ECO_3 GRANULE**-surfaced membranes contribute to cleaner, healthier communities.

TESTING & VALIDATION

Lawrence Berkeley National Laboratory testing validated the efficacy of this material in reducing smog and contributing towards air purification. Calculations were prepared on the performance equivalence of trees which naturally clean the air.

**This calculation varies depending on sunlight, humidity and levels of NOx in the atmosphere.*

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GRANULE-SURFACED MEMBRANES

What SOPREMA products utilize 3M™ Smog-reducing Granules?

ELASTOPHENE® FLAM FR GR ECO_3
PRODUCT #03805

ELASTOPHENE® FR GR ECO_3
PRODUCT #01103

3M™ SMOG-REDUCING GRANULES PAIL
PRODUCT #G03942

SOPRALENE® FLAM 180 FR GR ECO_3
PRODUCT #03942

SOPRALENE® 180 FR GR ECO_3
PRODUCT #01323

LEED®/Energy code requirements

- A modified bitumen roof with a cap sheet membrane surfaced with SMOG reducing granules can contribute LEED® points under both LEED® v4.0 & v4.1 - (IN) Innovation - Technology Category.

ECO_3 at Work...

DALLAS FORT WORTH AIRPORT — DALLAS (TX)

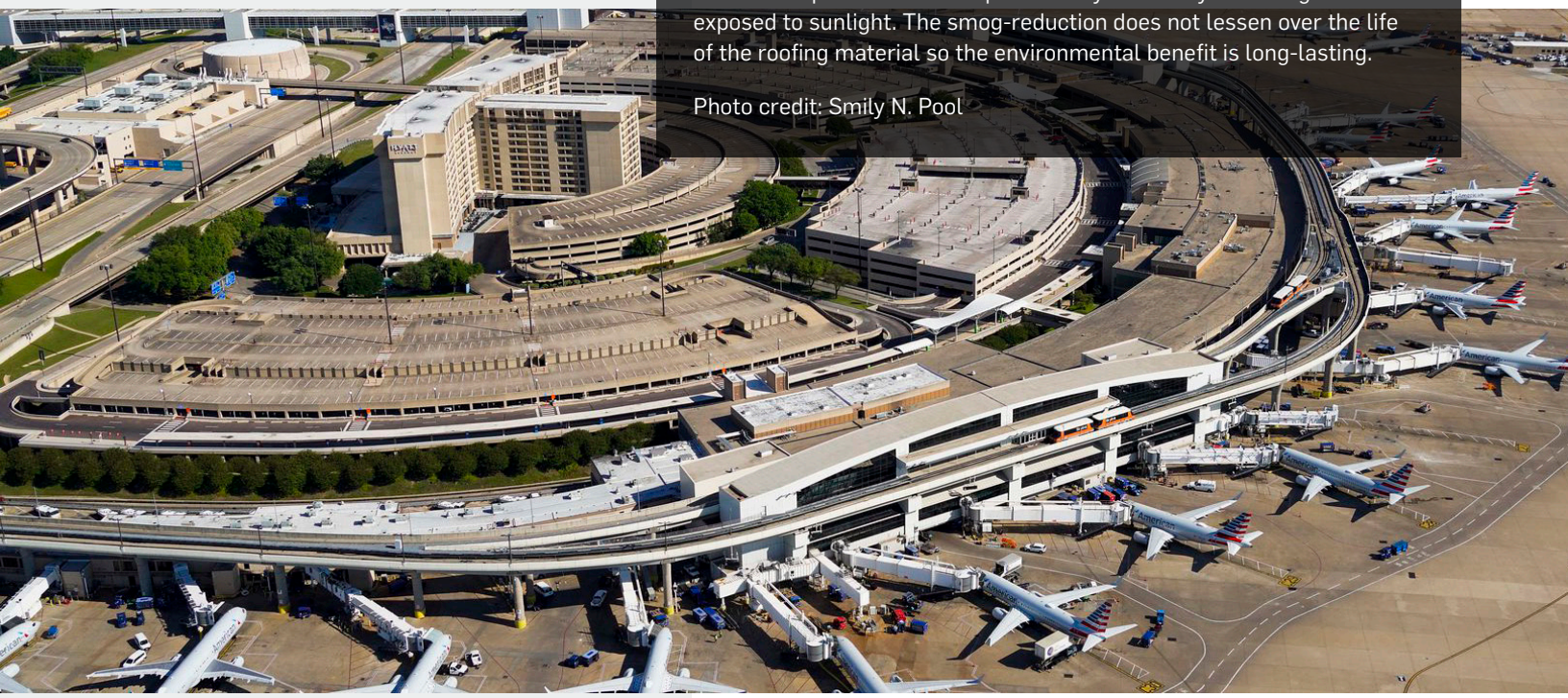
Design: PGAL Inc., Addison, TX
Construction: Chamberlin Roofing and Waterproofing

SOPREMA® Products: ELASTOPHENE® and SOPRALENE®

Terminal F Skylink buildings – 74,000 ft^2 of ELASTOPHENE® – two-ply SBS-modified bitumen and 11,000 ft^2 of SOPRALENE® for flashing, the equivalent of approximately 510 trees.

SOPREMA **ECO_3 GRANULE**-surfaced membranes were specified due to a desire to improve the air quality surrounding the airport. This is a continual process with the photocatalytic activity occurring when exposed to sunlight. The smog-reduction does not lessen over the life of the roofing material so the environmental benefit is long-lasting.

Photo credit: Smily N. Pool



Additional Resources

CLICK ON TITLES TO ACCESS INFORMATION

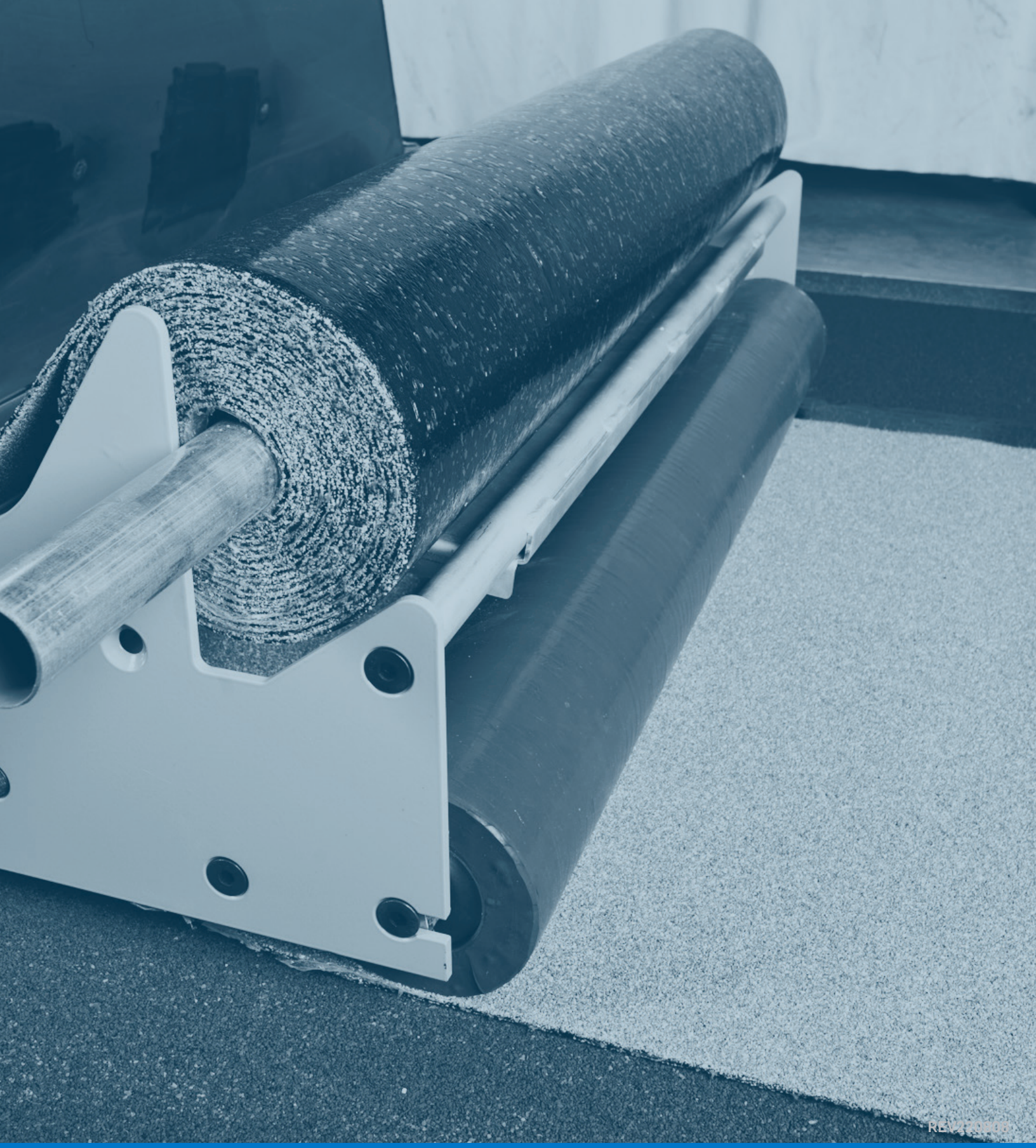
PRODUCT INFORMATION

https://soprema.us/elementor-41305/

PRODUCT VIDEO

https://youtu.be/-h7dCS5RQVA

**3M is a trademark of 3M Company.*



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