



TopScreen™ Water Repellent Barrier Coatings

Plastic-free and sustainable alternatives for paper packaging with excellent water repellency.



Technology Overview

TopScreen™ water repellent barrier coatings enable papermakers to provide high-quality and sustainable packaging by replacing polyethylene (PE) and other laminated plastic barriers with a more easily recyclable, repulpable and compostable water-based coating. TopScreen coatings are:



Sustainable

Paper coated with TopScreen barriers physically disintegrates under industrial compostability conditions and is repulpable and recyclable.



Versatile

Our formulas can be engineered to deliver varying degrees of oil and grease resistance (OGR), water vapor transmission rate (WVTR), or heat-sealable properties.



Easy to Apply

Our product is user-friendly and doesn't require installation of specialized equipment. Coatings can be applied using a variety of methods on standard equipment.

Technology Description

TopScreen is a water-based dispersion coating system. These coating systems can be both single, double and multi-layer applications, which contain a precoating and a top coating. Current formulas contain up to 50 percent renewable content with the potential to go even higher. To review our product portfolio, scan the QR code.



Application

The TopScreen water repellent barrier coatings perform well in both food service and paper-based flexible packaging. Our coatings can transform uncoated board into hydrophobic paper, along with its associated applications. The technology can be applied using conventional coating application processes, including pond and metered size press, film press, rod, air knife, and curtain coaters, as well as gravure and flexographic presses.

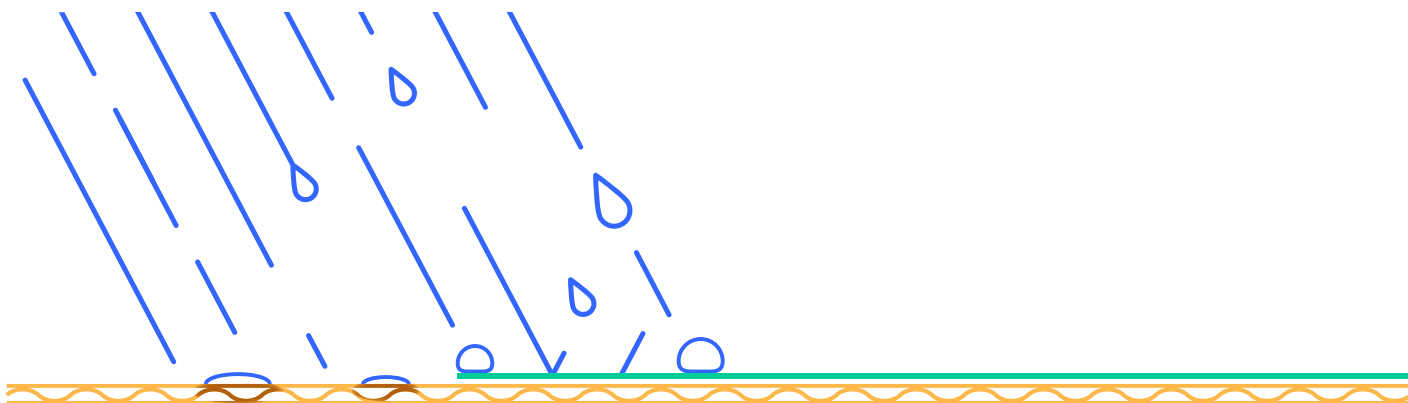
Many factors contribute to barrier performance. The most important are:

- Base paper quality: A higher-quality and smoother base paper leads to better barrier performances.
- Sizing of the paper: Sizing is directly proportional to the amount of coating present on the surface. Therefore, coatings proportional to the size of the product lead to improved barrier performance of the final coated paper.
- Coating layers: Applying a minimum of two barrier layers will minimize coating defects, resulting in pinhole-free barriers.
- Application system: For defect-free coating layers with homogeneous coating weights, use appropriate coating systems, such as curtain, air knife, film press, rod, and/or blade coaters. Lower viscosities during application will help achieve good wetting and better coverage of the substrate surface.
- Coating weight: For sufficient barrier performance, full surface coverage is necessary, and the higher the coating weight, the better the barrier performances. However, higher coating weights also lead to higher costs and higher risk for blocking issues. Therefore, it's critical to determine the optimal balance between blocking, barrier performance, and cost.



Sustainability¹

- TopScreen is recyclable and repulpable vs. conventional PE technology.
- Most of our products are partially renewable. The bio-renewable content varies by grade and can be as high as 50 percent.
- Water repellent coatings are not compostable as a standalone product; however, our chemistry can be used in the development of compostable packaging solutions. In most applications, the final packaging utilizing TopScreen water repellent coatings complies with the compostability criteria as defined by EN 13432.



Regulatory Compliance

TopScreen barrier coatings comply with global food contact standards, including BfR XXXVI, FDA 21 CFR § 176.170, and capable for GB9685-2016.

More Information

For more information about TopScreen water repellent barrier coatings, please contact your local Solenis sales representative or visit us online.



¹Our technology is sustainable when tested with the final paper product.



To learn more about how Solenis can help address your toughest challenges and more, please visit [solenis.com](https://www.solenis.com)