



## The Paper People

Innovative provider of sustainable packaging and packaging systems

### ABOUT THE PAPER PEOPLE

Established in 2019, The Paper People LLC is a leader in developing sustainable global packaging. Their diverse group of entrepreneurial thinkers brings experience in paper, corrugated, plastics, laminating, printing, converting, and distribution. Recognized for its innovative patent pending Paperlock™ heat sealing technology, this Wisconsin-based company is becoming well known to major retailers for its unique packaging solutions.

### ABOUT MILLIKEN

Drawing on more than 155 years of award-winning research and development, the Textile Business of American-based Milliken & Company® offers a diverse portfolio of technical textiles serving a broad range of global markets. Focused on enhancing the performance, heightening the protection, and advancing the sustainability of fabrics, Milliken manufactures superior solutions and develops leading innovations that add value to everyday life.

### OVERVIEW

Driven by a major national grocery retailer's objective to reduce plastic packaging 25% by 2025, The Paper People set out to find a domestic supplier capable of designing and manufacturing packaging window mesh for use in its line of recyclable produce bags.

### BACKGROUND

Legislation aimed at reducing plastic consumption has altered consumer behavior in major cities across the country. Shoppers in many northeastern and western cities no longer expect grocers to provide plastic shopping bags: reusable totes or a 10-cent upcharge per bag is now the norm. Driven by increased consumer awareness, the trend to reduce disposable plastic has extended to include other plastic products such as fruit and vegetable packaging. As recycling and composting technologies become more readily available, we expect to see more sustainable packaging on the shelves.

### REQUIREMENTS

The packaging window mesh needed to:

- » Provide structural integrity
- » Use raw materials that are compatible with the paper waste recycling stream
- » Bond well to the paper component
- » Allow visibility of the contents of the bag
- » Provide breathability for the produce inside
- » Meet applicable indirect food contact standards

### CHALLENGES

- » The adhesive coating on the mesh must activate under heat while not sticking in roll form when rewound
- » Manufacturing and application of the mesh must work with Milliken's and The Paper People's current equipment

When designing new packaging, we asked ourselves, “why not?” Pushing the limits to new levels takes a community of like-minded people. When we approached the issue of a mesh window, Milliken hopped on board to tackle this task. Working with the Milliken team has been a pleasure as they are willing to reinvent the wheel and not take no for an answer.

– Payton Heiman, The Paper People & Warner Packaging

## PROCESS

The Paper People approached Milliken and discussed technical requirements for the mesh. During initial conversations, Milliken’s team identified the key design criteria that would require the most resources, enabling a focused and efficient development process. Both Milliken and The Paper People believed that, among Milliken’s many fabric formation capabilities, tri-directional laid scrim technology (adhesive-bonded scrim) using cellulosic yarn would best address The Paper People’s requirements. The biggest challenge throughout the development process was testing adhesives and ensuring they would perform well with both Milliken’s and The Paper People’s equipment. Milliken’s R&D and supply chain teams sourced and experimented with adhesives from multiple suppliers to identify the best match. The selected adhesive paired with The Paper People’s Paperlock™ technology, which is applied to the areas where the scrim is attached, provided excellent bond strength.

With the fabric construction and adhesive type determined, Milliken made prototype hand samples in the lab for The Paper People to evaluate. Additionally, throughout the development process, Milliken continued to explore how modifying the adhesive formulation could further optimize adhesion to The Paper People’s paper stock. To accelerate the project and expand capabilities, Milliken invested in more equipment to perform in-house tests and trials on the adhesives under consideration. The Paper People evaluated the samples and provided feedback, and an open and collaborative relationship formed. Once the prototypes were approved, Milliken provided larger samples manufactured on production equipment, and we were off to the races.

The final element of this project was determining pigment colors for the scrim that complement the appearance of the fruits and vegetables inside the packaging. From a wide range of pigment options available, the team quickly matched the Pantone color targets that The Paper People provided.

## RESULTS

Milliken developed a tri-directional scrim mesh that is laminated across the window openings of The Paper People’s produce bags. This new development not only met the original challenge, including sustainability objectives, but stayed within reasonable cost parameters. Overall, this project engaged both existing and new capabilities collaboratively with The Paper People to address retailer and consumer needs in an emerging sustainable packaging space. Milliken is proud to have engineered a solution that supports the growth of its customer The Paper People.

### FINAL SCRIM MESH CONSTRUCTION

<b>Yarn</b>	Rayon
<b>Width</b>	Per customer requirement
<b>Adhesive</b>	Can be heat melted to the coated paper internal to the bag
<b>Food Contact</b>	Scrim mesh complies with FDA 177.2800



For more information, visit [textiles.milliken.com](https://textiles.milliken.com) and [paperpeopleusa.com](https://paperpeopleusa.com)