



## How 3M strives for circularity in engineered films



As a global manufacturer of graphic films and a longstanding materials science company, 3M takes the journey toward a circular economy very seriously. Where can we contribute – and who can help? Here’s a look at our efforts to develop partnerships to reduce, reuse and recycle our film products from production through end use.

### Toward sustainable graphic films

As a leading manufacturer of films for graphics, sun control and security, we’re working hard to reduce waste and support a circular economy. That means finding ways to reuse and recycle our products—from how they’re made to how they’re used. We know we can’t do it alone—partnerships are key to making this happen. These partners are often known as Mixed Energy/ Materials Recovery Facilities (MERFs) who work to recover both recycled content and energy value from product waste streams. MERFs often combine traditional sorting for true reuse with waste-to-energy processes, such as deriving fuel from material that would otherwise end up in a landfill.

In general, 3M is working with three basic challenges:

- Collecting recyclable/reusable materials including end-of-life films
- Identifying partnerships
- Determining logistics

### About circularity:

3M sees the circular economy as an opportunity to use resources more efficiently and drive product innovation, contributing to a brighter future and resilient business growth. We continue to work towards developing products and packaging that are reusable, recyclable, or made with more renewable or recycled material. Many of our film portfolios are created to refurbish structural surfaces, delaying the need for replacement.

### Liners

The liner – typically paper and polyethylene (PE) for 3M graphic films – is by design discarded once the film is applied. This makes it an impactful place to start for improved circularity. But logistics is a challenge for graphic film liner recycling. Often it must be shipped back to the manufacturer from multiple locations and then re-shipped to MERFs. A related challenge is size: 3M films are often supplied in wide web formats. Liners can be very large, and bulk shipping becomes too costly and cumbersome.

The solution is consolidation: Instead of taking custody of the discarded liner material, 3M seeks partnerships that enable our customers to use local MERFs for liner recycling.

For example, Rohn Industries, a recycling solutions company operating in Minneapolis-St. Paul, Minnesota, accepts 3M liner material and ships it to a nearby company that creates “green fuel” pellets which can be converted into energy. Another partner in Cincinnati, Ohio uses 3M liner material to make low-grade tissue. A third, in India, repulps it and makes egg cartons. We continue to identify and work to form similar pilot partnerships across the globe.

## Films

Many 3M graphic films are made from polyvinyl chloride (PVC). But unlike PVC used in other well-known applications such as piping, it can't be ground into easily-recycled particles at end-of-life. It also requires additional emission controls to be disposed of by burning.

3M, together with the Vinyl Sustainability Council, is working to create a pilot program to collect and potentially transport end-of-life films to a company called i2M. This company in Mountaintop, Pennsylvania makes several types of sustainable plastic products that reuse PVC and other materials. We are also working to facilitate conversations between i2M and local graphics manufacturers.

## End caps

Each 3M film is shipped in a cardboard box with plastic end caps to keep the film secure and prevent damage during transport. While cardboard is widely recycled, the plastic end caps raise concerns about waste in landfills.

Instead of discarding plastic end caps, the 3M manufacturing facility in Nevada, MO now sends them to a local nonprofit, Quality Products. This organization runs a sheltered workshop where 28 adults with disabilities clean, sort, and prepare the end caps for reuse. The caps are then returned to 3M for storage and future use. This partnership not only supports the community—it also sets a powerful example of circularity, where materials are reused again and again.

## Continuing our journey

These are examples of how 3M is working toward more sustainable film products for walls, windows, floors, sidewalks, fleet vehicles and more. We continue to identify new partners and new programs according to a robust roadmap that includes efforts to incorporate each component of our film products and packaging into a circular economy. It's part of our overall commitment to sustainability as a global manufacturer.

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