

THE E-COMMERCE PROTECTION GUIDE

Mailers vs. Boxes

The smarter choice for
e-commerce fulfillment.



TemperPack

For e-commerce fulfillment centers, the choice between mailers and boxes has traditionally meant choosing between efficiency and protection.

25%

of shoppers returned online purchases specifically because items arrived damaged or defective.

– Ryder, 2025 e-Commerce Consumer Study



Mailers offered speed and convenience, while boxes provided the cushioning needed for fragile or bulky items. This either-or decision has forced operations managers to constantly balance throughput against product safety and cost efficiency against customer satisfaction. **But what if you didn't have to choose?**

Hybrid solutions are making last-mile protection even easier.

Today's e-commerce journey **has become more complex**, yet traditional boxes and mailers haven't meaningfully evolved or innovated to keep pace.

The result? Neither is optimized.

Corrugated boxes are overbuilt. Standard mailers are underprotected.



Costly Air

Roughly 22 billion packages ship annually in the U.S., yet the average box is only 60% utilized. Adding void fill drives up shipping costs and generates unnecessary waste.



Rising Returns

According to the 2025 Ryder E-Commerce Consumer Study, 25% of shoppers returned online purchases specifically because items arrived damaged or defective.



Operating Woes

For fulfillment centers processing 10,000 orders weekly, even a 5% damage rate translates to 500 problem shipments a week.






Hybrid Solutions Bring Innovation

TemperPack seized the opportunity to reimagine mailer and box packaging. The result is their recyclable, padded mailer made of WaveKraft® material. This hybrid solution is specifically engineered to bridge the gap between traditional mailers and corrugated small boxes, offering the lightweight efficiency of a mailer, padded protection without void fill, and similar box capacity.

“This isn't an incremental improvement on existing mailers. It's a fundamentally different approach to protective packaging that could easily be the most innovative packaging solution in last-mile delivery protection”, said Jessica Joyce, TemperPack Chief Growth Officer.



CORRUGATED BOXES Overbuilt



-  Requires assembly time (folding and taping)
-  Bubble wrap and void fill increase costs
-  Higher material costs for boxes and filler
-  Requires warehouse space for bulky inventory
-  Oversized DIM weight pricing premiums

STANDARD MAILERS Underprotected



-  No assembly or void fill required
-  Often include plastic liners or hard-to-recycle materials
-  Lower material costs, but limited protection
-  Minimal pack-out time and storage space

TEMPERPACK® PADDED MAILER Just Right



-  No assembly or void fill required
-  Curbside recyclable, paper-based and labeled "Widely Recyclable" by How2Recycle®
-  Lower material and shipping costs
-  Minimal pack-out time and storage space
-  Up to 45% greater shock absorption compared to other mailers*
-  Gusseted design accommodates a wider range of product shapes

*See Page 7 for details

Sustainability Rewards and Reduces Risk

Today's fulfillment operations can't ignore sustainability. It has shifted from a nice-to-have to a business-critical priority. Consumers consistently rank paper and cardboard as more sustainable, while plastic faces growing scrutiny. That shift in perception is driving real purchasing decisions for consumers.



61%

of shoppers say eco-friendly packaging directly influences their brand purchase decisions.

– Ryder, 2025 e-Commerce Consumer Study



77%

of respondents consider recyclability "very" or "extremely" important when evaluating packaging.

– Ryder, 2025 e-Commerce Consumer Study

"There's a fundamental rethinking of packaging systems happening across the industry. The fulfillment centers that adapt will have a competitive advantage; those that don't risk regulatory penalties and lost business from sustainability-conscious brands."

– Rawan Friel, TemperPack VP of Sales

POWERFUL PAPER-BASED PROTECTION

Made Responsibly. Recycles Cleanly.



Displaces plastic and bubble mailers with a regenerative paper alternative.



Curbside recyclable, paper-based and labeled "Widely Recyclable" by How2Recycle®



Paper sourced from SFI-certified mills.

25%

Over 25% recycled paper content in the WaveKraft mailer.

Understanding EPR Regulations

California's SB 54—the most ambitious Extended Producer Responsibility (EPR) law in the country—requires brands to achieve 25% source reduction of plastic packaging by 2032, along with 100% recyclability and a 65% recycling rate.

Because California represents such a massive market, most national brands will need to comply regardless of where they're headquartered. And the trend is spreading: as of January 2026, six other states have now adopted EPR legislation, though none match California's stringent targets.

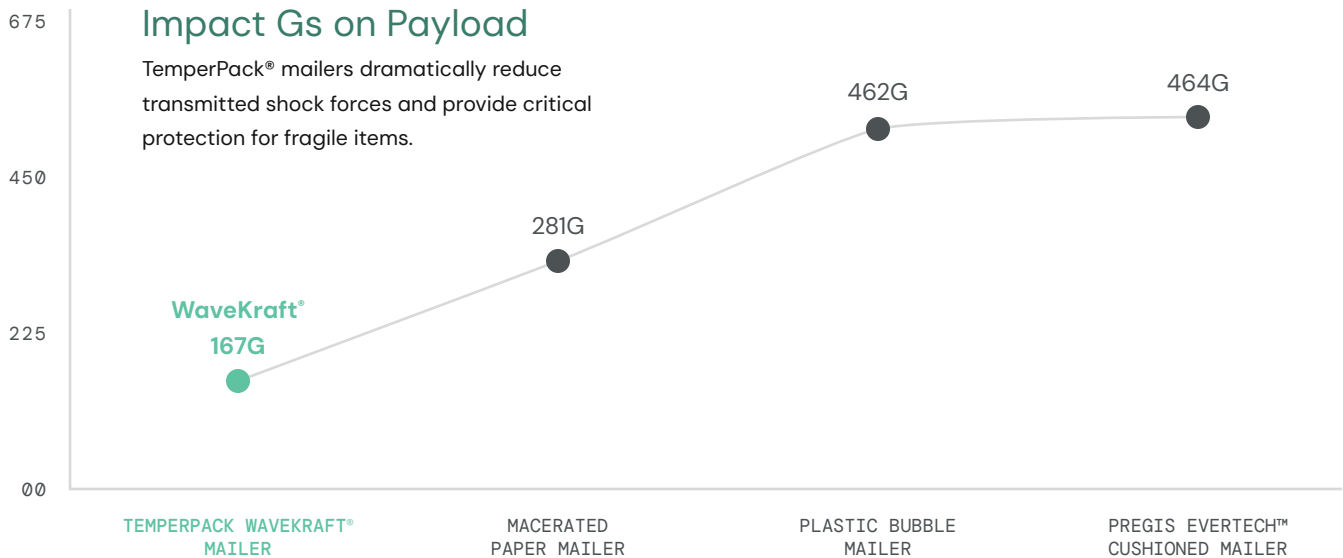
TAKE ACTION

Fulfillment centers need to prioritize finding packaging solutions that meet evolving compliance requirements without sacrificing performance or dramatically increasing costs.

[Learn more about EPR on our website](#)



A New Engineered Material Emerges



Packages face drops, dents, punctures, and other real-world abuse as they move through multiple carriers and handling facilities. TemperPack’s Proving Ground testing showed that WaveKraft® padded mailers deliver **up to 45% greater shock absorption** compared to plastic mailers, macerated paper mailers, and even other recyclable cushioned options. Drop tests confirmed reliable protection for fragile categories such as beauty and electronics.



The secret lies in WaveKraft® paper-based engineered material

- Superior radial support, cushioning, and structural integrity
- Thermal performance that outperforms conventional materials
- Reliable protection against drops, dents, and punctures

Think about your current workflow. **How much time** does your team spend selecting the right box size, assembling it, adding void fill, and taping it closed?

Now, imagine reducing that to a single step: **place the product in a mailer, seal it, and ship.**

The time savings per package might seem small (maybe 45–90 seconds), but multiply that across your daily volume. For a facility shipping 5,000 packages per day, you're looking at 7,500 minutes saved (125 hours). That's equivalent to reclaiming the time of 15 full-time employees every single day.



5,000
packages per day



125
labor hours per day



90
seconds per package



15
full-time employees per day

Less material usage means reduced storage space requirements. Instead of stocking multiple box sizes, various void fill options, and tape dispensers at every station, you can consolidate to a streamlined mailer inventory.

Easily Transition from Box to Mailer

The innovative gusseted design opens and closes wider than traditional mailers. This critical feature makes packing faster and easier while accommodating items like bottles, jars, round products, and bulky goods that typically require a box. Beauty products, vitamins and supplements, books, small toys, and even food items can now ship in mailers instead of boxes.



Beauty & Cosmetics

Nail polish bottles, glass cosmetic containers, and plastic packaging ship safely without the need for boxes while maintaining protection and reducing materials.



Health & Wellness

Vitamin bottles, supplement containers, and medication packaging benefit from enhanced cushioning and structural support, helping prevent shifting and damage during handling.



Electronics & Retail

Books, clothing, and small toys that previously required boxes for presentation or protection can now ship in mailers, reducing material costs and freight expenses.



Food & Beverage

Coffees, teas, and candies that were traditionally shipped in boxes can now move safely in mailers with reliable protection and improved shipping efficiency.

Sustainability claims are everywhere in packaging, but **genuine recyclability is rare.**

Many “recyclable” padded mailers on the market are made with expanded glue dots sandwiched between paper layers. These glue dots clog MRF equipment, contaminate paper recycling streams, and often end up in landfills despite the recyclable label. Plastic bubble mailers and poly mailers face even greater challenges. While technically recyclable, they require separate collection streams that most consumers don’t have access to, and the vast majority end up in trash bins, not recycling.

Brand partners are increasingly scrutinizing packaging sustainability. They’re asking questions about recyclability, conducting lifecycle assessments, and requiring documentation to support environmental claims.

TemperPack padded mailers are different

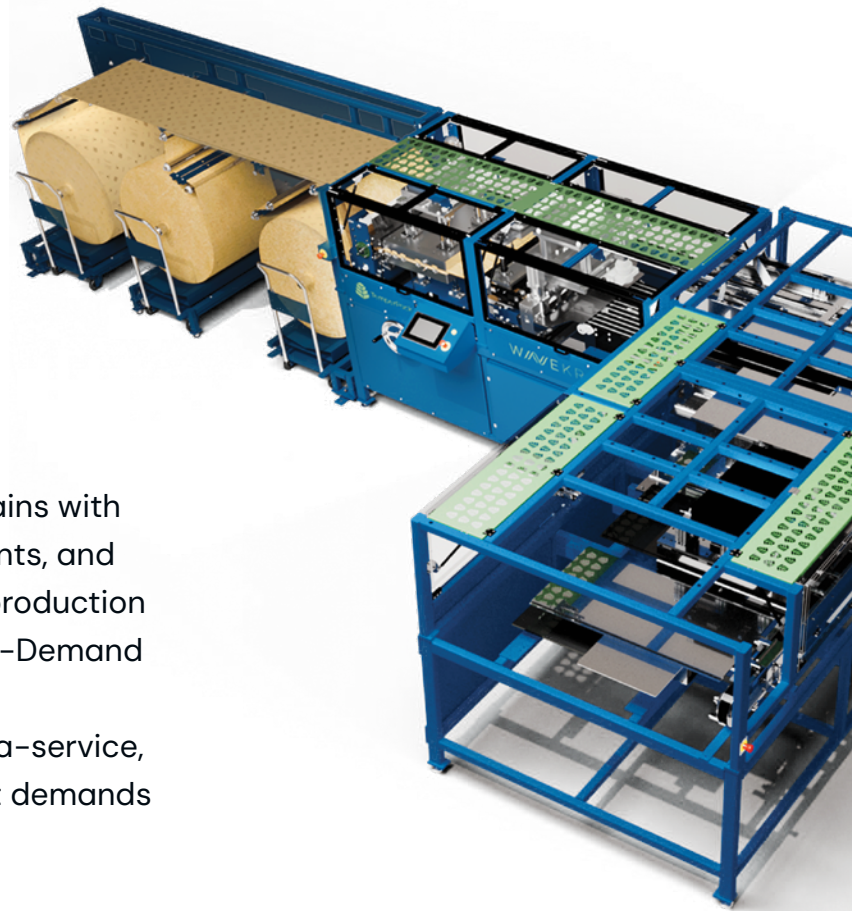
They’re paper-based, with no plastic bubbles and no plastic films. They go straight into curbside recycling bins alongside cardboard boxes and paper, where they are successfully processed through standard MRF operations—backed by certifications and third-party testing.



SCALING WITH ON-DEMAND PRODUCTION


The WaveKraft On-Demand Production System.


Instead of relying on traditional supply chains with long lead times, minimum order requirements, and storage challenges, you can bring mailer production directly to your facility floor. WaveKraft On-Demand represents a fundamental shift from packaging-as-product to packaging-as-a-service, giving you the agility to respond to market demands without traditional constraints.




The WaveKraft platform installs on-site with a small footprint, producing mailers at the push of a button.

 Reduce complexity by controlling source, schedules, and supply

 Forecast supply in weeks instead of months

 Gain predictable supply with fewer purchase orders and shorter lead times

 Eliminate the need to store months' worth of product by producing on demand

Imagine reducing your warehouse space by 84%

WaveKraft's proprietary paper rolls allow you to produce more mailers while requiring significantly less warehouse space than storing pallets of finished mailers.

TO PRODUCE 18,800 #5 MAILERS

TO STORE 18,800 #5 MAILERS



3
pallets of
WaveKraft rolls



19
pallets of
traditional product

Making the Switch

Transitioning from boxes to mailers for applicable products doesn't require an operational overhaul. The process is straightforward.

ONE

Audit your current product mix to identify items currently boxed that could ship in mailers

TWO

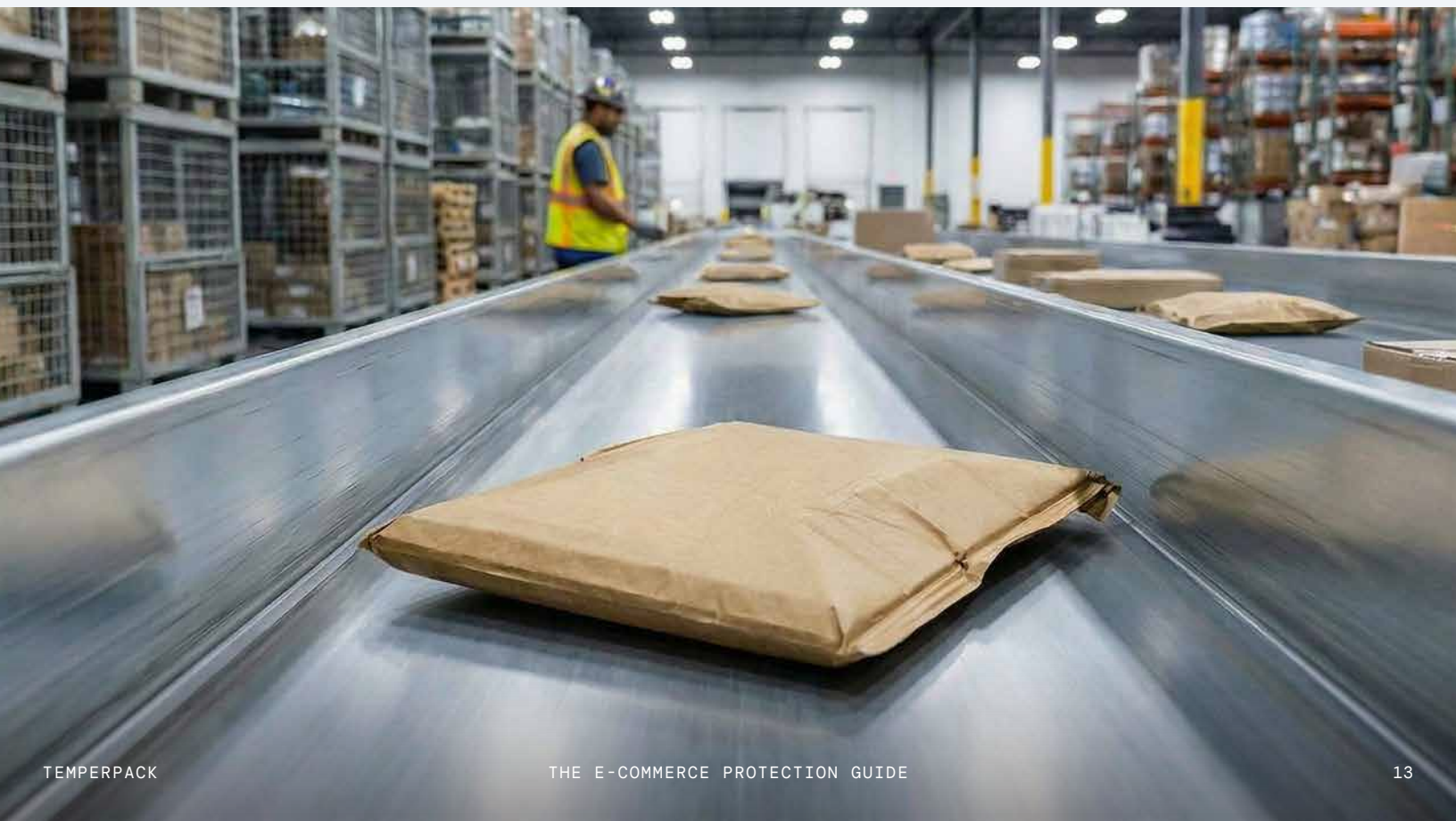
Test TemperPack's mailers with representative products using your standard fulfillment process

THREE

Monitor damage rates, pack times, and customer feedback

FOUR

Determine whether to purchase ready-built mailers or produce them on-site with the WaveKraft® On-Demand System



THE BOTTOM LINE

The traditional choice between mailers and boxes is becoming obsolete.

With TemperPack padded mailers, fulfillment centers can achieve the protection of a box with the efficiency of a mailer while meeting sustainability commitments, reducing operational costs, and improving the customer experience. It's not just a better mailer, it's a strategic advantage.

SOURCES

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McKinsey & Company, June 2025 Survey, "Do U.S. consumers care about sustainable packaging in 2025."

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Nielson IQ, 2025, "Retail measurement services."

Ryder, 2025 e-Commerce Consumer Study, "How U.S. consumers are shopping in 2025."



Better Shipping Awaits

Request a sample or contact us at
temperpack.com/products/mailers



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