Package Design and Testing

The Science Behind Peace of Mind.
Barring the most extreme circumstance, a shipment will never get damaged in transit. Not if it’s properly packaged. Unfortunately, a package can take a rash of hard knocks before its protection comes into question. And then it can become a costly matter of trial and error to get the packaging right.
A Well-Designed Package
Is Ready for Anything.

Make no mistake: There is a right and wrong way to prepare the items you ship. Moreover, there’s a best way—and that’s where the certified professionals at the UPS Package Design and Test Lab can help.

The proper packaging and shipping of sensitive goods takes science. With more than 40 years in package design and testing, our packaging engineers are committed to ensuring the complete protection of your shipments—and your bottom line.

Whether your product is in development or already on the market, our consulting services can help. We follow every packaging performance test with a comprehensive report including a detailed analysis of the testing specifications, results and improvement recommendations.

Profit from precision

We understand that it’s your name on the line, and that damaged packages slow your business process. We’re committed to helping you quantify the problem, identify a practical solution and implement it for maximum return. You’ll reship less. Replace inventory less. And keep your customers loyal.

“The lab and its team are always available to answer and address quality and testing questions. I always refer to UPS as one of the best testing labs for all products in any environment.”

—Tracey Eberle, Staples, Inc.
Compression Tests evaluate the package’s ability to resist forces commonly encountered during transportation and warehousing.
Industry-recognized tests systematically subject packages to the rigors common to today’s transportation network. After the results are compiled, engineers advise you of any necessary changes.

Drop Tests are conducted to ensure that a product is adequately protected from any drops, falls, slides or jolts encountered during warehousing or distribution.

Vibration Tests replicate the specific frequencies packages encounter during air, truck, or railcar travel and measure their effects on your product.

Shock Tests measure the fragility of your product and evaluate protective packaging—an ideal preventative test for new products.
A Lab Like No Other.

Precision instruments and real-world testing help make the most of your protective packaging.

The temperature-humidity chamber

Our lab is equipped with a state-of-the-art chamber that allows for the testing of temperature- and humidity-sensitive shipments such as pharmaceuticals, food and plants.

We can even program the chamber to simulate realistic ambient transit conditions based on the specific routes your packages take. For example, if you ship pharmaceuticals from Florida to Montreal, we can plot the course into the chamber’s system and expose your test package to the most likely temperature and humidity fluctuations it will encounter along the way.

Real-world monitoring for real-world results

For the most comprehensive testing, we can place monitors in your packages to measure internal and ambient temperatures during actual test shipments. When it’s all said and done, we’ll use our findings to recommend a custom thermal package that won’t leave you burned or your customers out in the cold.

Specially designed to put your package through its paces, the chamber can generate environments from -20° to 185°F and from 20% to 95% humidity.

Did you know?

Corrugated board can lose half its compressive resistance in a 95% relative humidity climate.
Peace of Mind from a Trusted Team.

Certification

The UPS Package Design and Test Lab is one of the few labs certified by the International Safe Transit Association (ISTA) and approved by the National Motor Freight Traffic Association (NMFTA).

All of our testing is in accordance with the latest industry benchmarks and approved test standards such as:

- ISTA Series 1, 2, 3 and 7
- TAPPI* 810 Bursting Strength
- TAPPI 811 Edge Crush Resistance
- ASTM** D642 Compression
- ASTM D3332 Product Shock Fragility
- ASTM D3580 Product Vibration
- ASTM D4169 Performance Testing
- ASTM D4728 & D999 Vibration
- ASTM D5265 Bridge Impact
- ASTM D6344 Concentrated Impact
- ASTM D6653 Altitude
- ASTM & TAPPI Tensile Testing

* Technical Association of the Pulp and Paper Industry
** ASTM International

What we do

- Assess your current packaging materials, processes and procedures, and recommend improvements.
- Provide prototypes and design specifications of packaging alternatives tailored to your products.
- Prevent damages proactively by designing appropriate packaging for new products.
- Support you with training and follow-up analysis for your newly designed packaging.

Consultations and recommendations

Accredited as Certified Packaging Professionals and Certified Packaging Laboratory Professionals, our engineers are recognized experts in the dynamics of distribution and shipping environments.

By constructing a common-sense cost model, the UPS Package Design and Test Lab can propose solutions that are not only effective in preventing damage, but also cost-effective for your organization. The end result is a practical solution that doesn’t erode your profits.
“The repack recommendations developed by the UPS Package Design and Test Lab allowed us to reduce damage rates that were as high as 18% for some items to virtually no damages. Not only is our customer satisfaction greatly improved, we’re also experiencing significant savings on our transportation costs.”

— Caroline Busick, Director of mail order and retail distribution for Plow & Hearth