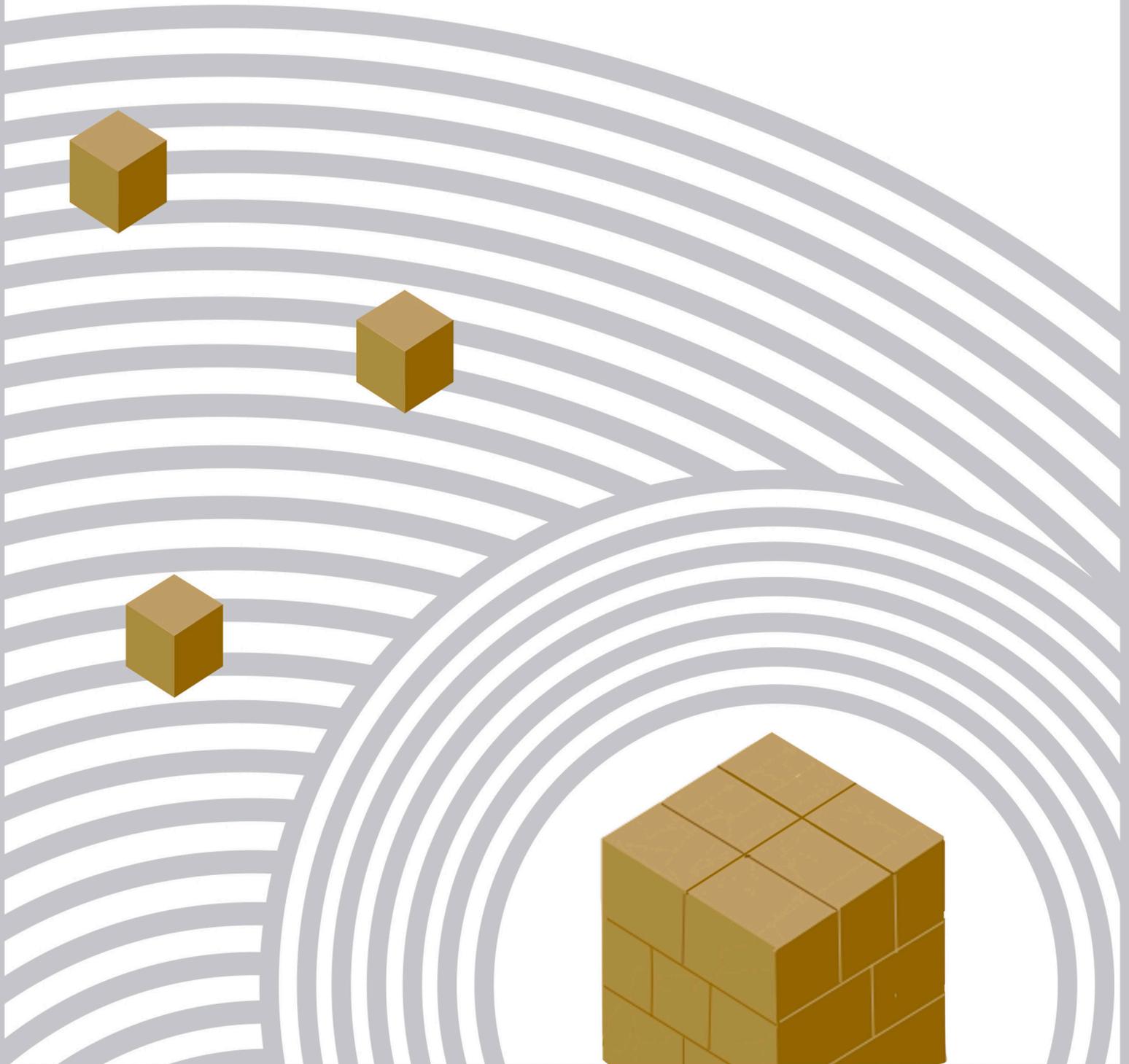


# ADVANCED TECHNOLOGY LOAD CONTAINMENT LAB

**RAPID BANDER**   
Sustainable Load Containment System



### Introducing the Advanced Technology Load Containment Lab

The RAPID BANDER® Sustainable Load Containment System is designed to reduce the economic and environmental costs associated with protecting hard-to-handle shipments. Because customers require customized solutions, we have invested heavily in our **Advanced Technology Load Containment Lab**, which delivers state-of-the-art engineering, technology, and results.

#### What We Do

We begin by replicating a customer's pallet wrapping practices, using their film and wrap pattern, applied to a pallet of their products. Then, our specialized equipment duplicates wrap pattern, containment force, total applied stretch percentage, and film weight.

We designed and built custom-engineered test equipment that applies specific types of force to the load, gradually increasing those forces to the point of load failure. The tests are recorded using data loggers, g force sensors, velocimeters, and slow-motion video. Through review and analysis, we then identify both incremental movement within the load and the nature of that movement.

These tests are far more informative than traditional industry accepted methods because they quantify the load's point of failure under conditions which mimic a real-world environment. After identifying the force vectors affecting the load components, we optimize the load containment to minimize any product movement.

The superior strength of Rapid Film provides a high strength wrapping web that resists punctures, tears and breaks.





Rapid Bander significantly reduces per pallet film costs, stretch film use and greenhouse gas generation.



Next, we employ the Rapid Bander system on a second pallet of product, optimizing for the best containment using the least amount of film. We subject the wrapped pallet to the same tests, increasing force to the point of failure, capturing data and video.

We present the customer with a comprehensive report and analysis, which includes our recommendations. Since the optimization we do in our lab is directly transferable to the customer site, we know the customer will be able to quickly and easily achieve their objectives of source reduction and improved containment.

## How We Do it

**The Transportation Simulator** tilts the load up to 38 degrees to simulate and sustain up to 0.8 Gs of force. The degree of the angle determines the amount of force applied. Other variables include the dwell (the time it holds at the set angle) and vibration, along with vibration frequency. Vibration reduces friction between the layers on the pallet, simulating road vibration, allowing us to observe and record what happens during a typical shipment. Profiles are measured before and after testing to record where and how much load shift took place.

This testing simulates turning and acceleration events and follows US DOT regulation for testing commercial loads, as well as ISTA standards, Canadian NSC STD and the European Guidelines for safe transit.

**The Impact Tester** generates a high impact force to the pallet. The amount of force is determined by the angle of the frame and the distance the sled travels. Sophisticated data logging instrumentation measures the precise g-force achieved. Slow-motion cameras record the impact so we can observe and carefully analyze load movement during impact. Profiles are measured before and after testing to record where and how much load shift took place.

**The Horizontal Accelerator** rapidly accelerates and decelerates a sled in a horizontal plane at a constant velocity using a sophisticated hydraulic system. Data logging instrumentation measures the precise g-force achieved. Slow-motion cameras record the impact so we can observe and carefully analyze the movement within the load during impact. Profiles are measured before and after testing to record where and how much load shift took place.

### Ready To Learn More?

We'd be happy to arrange a tour of our lab. That way, you can see for yourself how Rapid Bander® can enhance your supply chain sustainability efforts by reducing load failures, along with reducing your economic and environmental costs. Email Bob Kayser, Vice President, at [bobk@rapidbander.com](mailto:bobk@rapidbander.com). Or call us at 602.305.0100.



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YOUR PROFITS. YOUR PLANET.™**



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