Atlantic

Beyond the box ™

CORRUGATED

TESTING LABORATORY

IN-HOUSE FACILITY

ISO 9001 Certified / ISTA Certified (Lab & Technician) / In accordance with **TAPPI** and **ISTA**

195 Walker Dr., Brampton, ON L6T 3Z9 • **(800)268-5620** • www.atlantic.ca

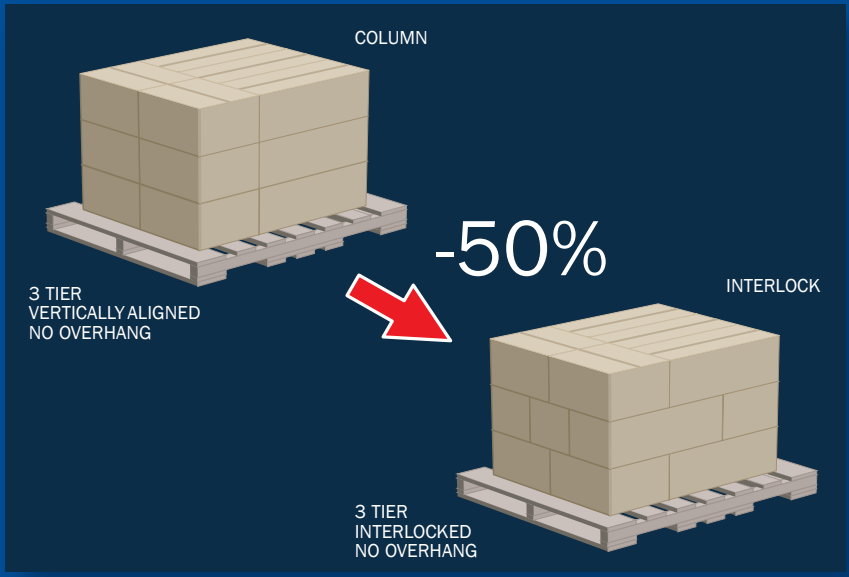
What We Do

At Atlantic Packaging, our team of experts design corrugated packaging solutions to perform in real world environments. The materials and structure that make up each corrugated package are designed to withstand a variety of stress tests simulating real world conditions, and to ultimately deliver the quality and durability our customers have come to expect.

Our in-house corrugated testing lab and technicians are ISTA certified, and all tests are conducted in accordance to ISTA and TAPPI standards and procedures. All of our tests are designed to trouble-shoot and/or validate corrugated designs through various testing procedures including material, pre-shipment and dangerous goods testing.

Did you know?

Boxes using interlock patterns can lose up to 50% of the top to bottom compression resistance potential compared to having the boxes vertically aligned.



Material Testing

Material tests are designed to confirm that the corrugated material components (liners and medium), are within specifications. All tests are performed under controlled conditions (50% ± 2% RH and 73 ± 2°F) in accordance with TAPPI (T-402). Material tests help to ensure the right material is being used for each specific application.

Here are a list of tests we are equipped to perform:

- Basis Weight
- Edge Crush Test (ECT)
- Caliper
- Box Compression
- Flat Crush Test
- Cobb (water absorption)
- Mullen
- Pin Adhesion
- Score Bend
- Torsional Stiffness (bpi)

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TEST	DESCRIPTION	METHOD	WHY IT'S DONE
Basis Weight TAPPI 410	Determines weight of the liners and medium(s) used in the composition of a piece of corrugated board. lbs/msf 4" x 4"	The specimen is placed in water until the liners separate from the medium. After drying the sample is then weighed.	To determine the ECT board grade.
Edge Crush Test TAPPI 839	Measure of the edgewise-compressive strength of corrugated board. lbs/in 2" x 2" (x10 pcs)	A specimen is placed between two plates of a crush tester, perpendicular to the direction of the flutes, and compressed to the point of failure.	This test is directly related to the stacking strength of a carton.
Caliper TAPPI 411	Thickness of a corrugated board. In thousandths of an inch	A specimen's thickness is measured using a micrometer.	Crushed flutes directly relate to poor board quality.
Box Compression TAPPI 804	Measures the strength of an empty, formed corrugated carton. lbs/in^2 & deflection 5 converted cartons	Samples are prepared by assembling the carton (sealed using clips), placed between two plates and compressed to the point of failure.	To determine stacking strength and palletization of a carton.
Flat Crush Test TAPPI 825	Measures the amount of force required to crush the medium in a single face/single wall construction. lbs/in^2 (10in^2 circles (x10 pcs)	Each specimen is placed between two plates of a crush tester and a load is applied until the sidewalls collapse completely.	To check mediums performance on converted boards.
Cobb TAPPI 441	Determines the mass of water absorbed in a specific time by one square meter. g/sq. m. 5" x 5" piece (each side) Board and/or paper samples	A specimen is weighed, placed into a clamp, water is poured on it then removed and weighed again. The difference is the amount of moisture absorbed.	To determine the amount of moisture or if any additives are present.
Mullen TAPPI 810	Measures force required to burst through all facings. p.s.i. 6" x 6" (x10 pcs)	10 bursts from the inside and 10 bursts from the outside.	Out-dated method testing side-to-side protection. Has been replaced by Edge Crush Testing (ECT).
Pin Adhesion Test TAPPI 821	Measures the force required to separate liner from the medium. lbs/ft. 2" x 6" (x 20 pcs - C Flute) 1.25" x 4" (x20 pcs - B Flute)	Placed in a pin set between two plates of a crush tester. The force applied measures the strength of the bond between liner and medium.	Detects poor adhesive penetration. The strength of the starch affects performance and bond of the corrugated board.
Score Bend	Measures the pressure required to bend a score 90°. lbf. 9" x 7.75" (x6 pcs)	Samples with scores parallel and perpendicular to flutes are bent 90°.	To determine if a score was applied properly. Weak or strong scores may cause issues for automatic forming equipment.
Torsional Stiffness Test (bpi)	The MD Torsional Stiffness test measures the quality of the flutes. 1" x 5.75" (x10 pcs)	Each specimen is placed in the DST Torsional Stiffness Tester. The sample is twisted 3 times and a bpi (box performance indicator) number is given.	Measures the quality of the flutes. If flutes are slightly compromised, then the overall box compression strength will be jeopardized.

** Each test is subject to a fee. Please contact us for more information.*

Pre-Shipment Testing

Pre-shipment tests are performed with packaged product and are focused on safeguarding the product through common transportation environments and possible hazards. **Being ISTA 1A and 1B certified** allows us to perform all the tests necessary to best protect against product damage. These tests can influence the gauge and strength of materials used, ensuring maximum protection with optimal cost efficiencies.

TEST	DESCRIPTION	METHOD	WHY IT'S DONE
Free Drop Test ISTA 1A	Containers containing product.	Carton is dropped from 10 predetermined points on the surface area of a carton (corners, edges, faces). Height of drop is based on weight of carton.	Performed to reproduce mechanical damage in the form of bruised corners, gouges, and scrapes visually caused by impacts during handling.
Vibration Test ISTA 1A, 1B	Containers containing product and/or full pallets. Flatbed Rotary Vibration table.	Specimen is placed on the table and vibrated for a specific time. 1hr on table = 1000 miles of transit.	This test is performed to reproduce the damage that may occur in the distribution environment.
Incline Test ISTA1B	Containers containing product and/or full pallets.	Carton is set on a platform that rides down a track and impacts wall. Simulates railcar or truck shunting.	This test is performed to reproduce mechanical damage that is more common to heavier items.

** Each test is subject to a fee. Please contact us for more information.*

Free Drop Tester

Vibration Tester

Incline Tester

Dangerous Goods Testing

Transporting dangerous goods requires testing designed to ensure the product is as safe as possible during transportation. Our lab is equipped to perform all of the required testing necessary for dangerous goods including: Drop test (ambient & cold), Compression test, and 30-min Cobb test. A comprehensive report is provided after testing is complete.