

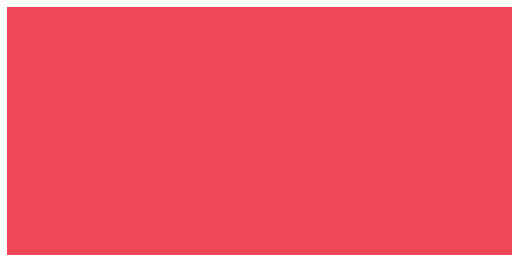


PackTest Machines Inc.

# Packaging Testing ~~Equipment~~ Solutions

For

Food / Personal Care /  
Home Care / FMCG and  
Pharmaceutical Industry





# Packaging Testing

One of the primary purposes of a package is to ensure the safety of its contents during transportation and warehousing. If a product gets damaged during this process, then the package has failed to accomplish a primary objective. The customer will either return the product or be unlikely to purchase the product altogether. Product rejections are always a concern for the company as it hits their operating margins.

If such failures happen repeatedly, the *brand image* takes a big hit, which sometimes is more precious than making profits.



Packages need to be tested very thoroughly when there is a new packaging design, a revision to a current design or a change in the packaging material.

Testing a new packaging design before putting it up for full scale manufacturing can save a lot of time, money and heartburn.

# About us

**PackTest Machines Inc** (formerly known as Test Techno Consultants), was incorporated in 1989 and has become India's Leading & Largest manufacturer & exporter of Quality Assurance Testing Equipment for the Packaging Industry.

We offer the world's widest range of Compression Testers, Tensile Tester, Torque Testers, Leakage Testers, Burst Testers and many other Material Testing Equipment for the Packaging Industry.

Whatever the Application...

Whatever the Industry...

***We have a *Solution* for your problems !!!***

Our Equipments form the lifeline of Quality Assurance / R&D / Packaging Development of almost all sectors of the industry involved in the manufacture and use of Packaging Materials.



# Why buy PackTest ?

**We do not try and sell rockets, to a man who only needs a car.**

While others try to SELL what they MAKE,  
We try and MAKE what the customer NEEDS.

**A product for every need.**

We have the widest range of Products covering almost everything in Paper, Plastic, Packaging Material and Package Testing / Evaluation.

We offer you a one stop solution 99% of the times.

**A product for every budget.**

From the basic Digital Models to the most sophisticated Computerized Models, we have it all. Give us your application and give us a budget, we have a solution ready for you.

**We know what we do, and we are ready to share the knowledge.**

Our strength lies in our Technical Know-how and Backup.

We have in-depth knowledge of the products that we manufacture and the applications they serve.



# Why buy PackTest ?

Testing Equipment = Machine

Testing Equipment + Knowledge Sharing + Support = Solution



At PackTest, we don't just supply Testing Equipment and teach you how to use them. We teach you how to understand and interpret the results and how to improve.

At PackTest, our responsibility does not stop after we **SELL** the equipment. It stops after you **BENEFIT** from it.

That's why, at PackTest, we do not sell you **Packaging Testing Equipment / Machines**, we provide you **Packaging Testing Solutions**.



## Our Customers

Listed below are a few our most valuable customers.

*(Sorry if we missed out on your name due to space restrictions)*



All logos are trademarks of their respective owners.

They are shown here as a part of our customer list and are not intended to show any endorsement on behalf of the respective brand owners.

**Proud members of :**



ASTM INTERNATIONAL



**भारतीय पैकेजिंग संस्थान**  
**INDIAN INSTITUTE**  
**OF PACKAGING**

**FEDERATION OF INDIAN**  
**EXPORT ORGANISATIONS**

Setup By Ministry of Commerce, Government of India

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## Box Compression Tester

This is an equipment to test the maximum load bearing capacity of corrugated cartons.

These compressive forces are related to some of those exerted on corrugated cartons in stacks or encountered in transportation. The method may be used to compare the compressive resistance of different lots of similar cartons or to compare cartons of different grades.

High BCT Values = Good Carton

Good Carton = No Product Damage

Suitable for : Corrugated Cartons / Shippers

Confirms to : TAPPI T-804 / ISO 12048 /  
ASTM D-642 and Proprietary Test Methods.



## Crush Resistance Tester

This is an equipment suitable for :

**Ring Crush Test (RCT).**

*The load bearing capability of paper/paperboard.*

**Flat Crush Test (FCT),**

*The horizontal load bearing capability of corrugated board.*

**Pin Adhesion Test (PAT).**

*The strength of the bond between the fluting and liner.*

**Edge Crush Test (ECT),**

*The vertical load bearing capability of Corrugated Board.*

**High RCT + FCT + PAT = High ECT = High BCT**

Confirms to :

TAPPI - T822 / T825 / T821 / T811

ISO 12192 / 3037 / 3035





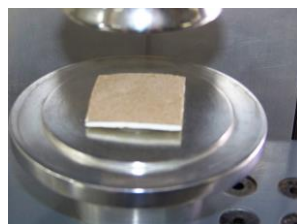
## Ply Bond Tester (ZDT Type)

This is an equipment to measure the internal fiber bond strength of Paper Board by measuring the force required to separate the layers / plies.

A high Ply Bond value indicates a well-compacted, strong board which will make high quality Paper Cores and Corrugated Cartons.

Suitable for : Paper Boards.

Confirms to :  
TAPPI T-541



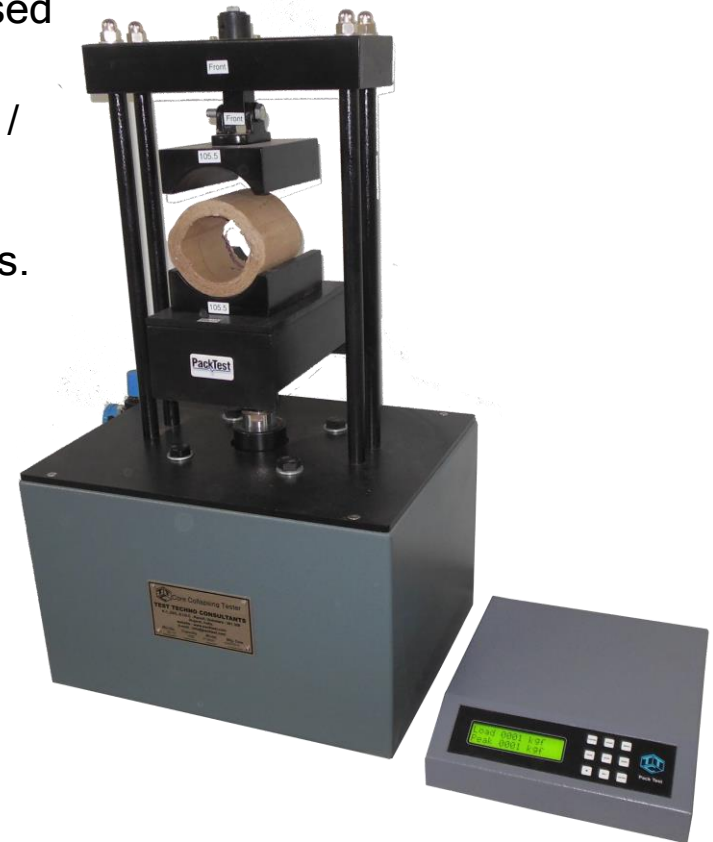
# Cone Collapsing Strength Tester

This is an equipment which can test the horizontal load bearing strength or crushing force of Paper Cones used in winding Yarn.

This winding tension of the yarn creates a squeezing / crushing force acting radially inwards on the cone.

Poor quality cones, collapse inwards under this stress.

Confirms to : Proprietary Test Methods



# Core Collapsing Strength Tester

This is an equipment which can test the horizontal load bearing strength or crushing force of Paper Tubes and Paper cores used in winding Yarn / Textiles / Paper / Foils / Films / Laminates, etc.

This winding tension of the material being wound, creates a squeezing / crushing force acting radially inwards on the tube / core.

Poor quality cores, collapse inwards under this stress.

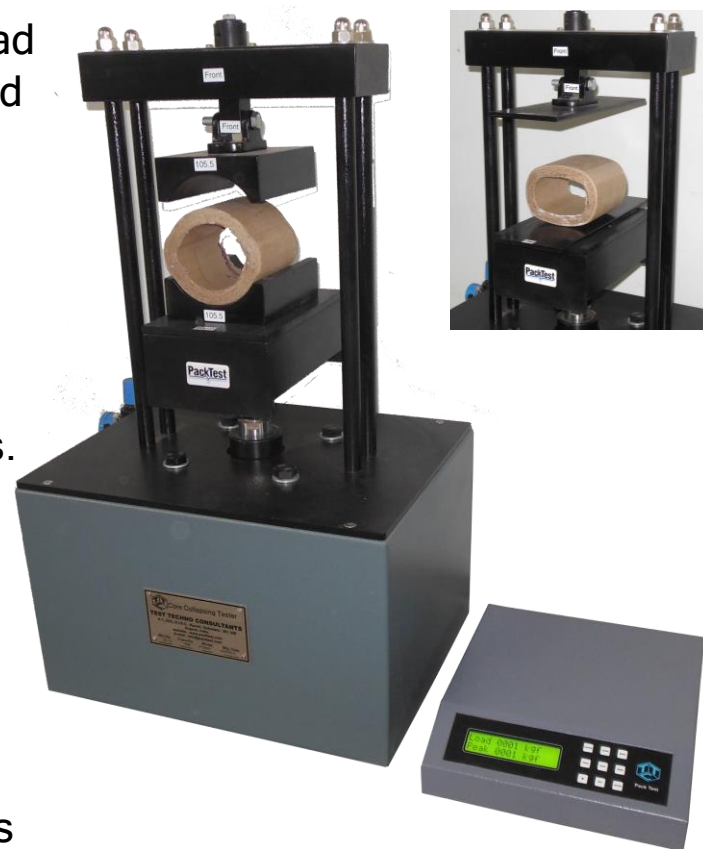
Suitable for :

- Flat Crush Test (using flat adopters)
- Radial Crush Test (using curved adopters)

Confirms to :

ISO 11093 (Flat Crush) and Proprietary Test Methods

*Note : Radial Crush Test method was invented by us in 1987*



## Grammage Tester / GSM Tester

This is an equipment used to measure the grammage (gsm) of paper and paperboards.

GSM is one of the most basic tests which stands for Grams per Square Meter. It is also known as the “grammage” and is the weight of 1 square meter of sample.

However for the purpose of the test, a sample of 100 cm<sup>2</sup> is cut. The weight is then multiplied by 100.

Confirms to :

TAPPI T410

ASTM D 646

ISO 536



Optional Round Cutter



## Caliper Thickness Gauge

This is an equipment to measure the thickness of Paper, Film, Foil, Laminate, Tapes, Labels or any substrate in Sheet Form under a specified contact pressure.

The base of the equipment ensures that the measurements are always taken in an upright orientation and the dead weight on the top of the equipment ensures a uniform and reproducible contact pressure at all times.

Confirms to :

TAPPI T411

ASTM D645

ISO 534 / 3034

PSTC 133





## COBB Tester

This is an equipment to determine the water absorption property of paper, paper board and corrugated fibreboard.

Example:

- A new currency note has a very low COBB Value. i.e. Even if you dip it in water, it will absorb very less water.
- A newsprint paper on the other hand has a very high COBB Value. i.e. it will absorb water very quickly.

Types of Test :

- Cobb Index : ( 60 / 120 Second Test )
- Cobb Index : ( 30 Minute Test )



Confirms to :  
TAPPI T441  
ASTM D 3285  
ISO 535

## Instant Moisture Meter

This equipment is used to quickly measure the moisture percentage in paper / paperboard / corrugated boards.

The Instant Moisture Meter is an electrical resistance-type moisture meter, utilizing the relationship between moisture content and electrical resistance.

The contact pins mounted on the top of the meter are used for making direct contact with the material.

It is ideal for plant superintendents, inspectors, buyers and salespeople.



## Hot Air Oven

This is an equipment to measure the moisture in Paper / Paper board / Corrugated board after drying it in a precisely controlled temperature for a set period of time.

A suitable size of sample is cut and accurately weighed on digital balance to give the Initial wt. of sample. The weighed samples are suspended on the racks in the oven maintained at  $103 \pm 2^{\circ}\text{C}$ . Samples lose weight due to evaporation of water till these are bone dry.

Loss in weight = initial weight - final weight.

**% Moisture = (Loss in weight / Initial weight) x 100**

Confirms to : TAPPI T412 / ASTM D 644 / ISO 287



## Infrared Thermometer (Temperature Gun)

This equipment can measure the temperature of a surface from a safe distance without any physical contact.

The IR Gun uses infrared technology - ready to go whenever you need it.

Simply point and shoot for quick and easy temperature measurement.

With laser pointer for proper targeting.



## Gloss Meter

This is an equipment to measure the glossiness (shine) of any surface.

Eg. Duplex Boards or paper used in printing.

Gloss is determined by projecting a beam of light at a fixed intensity and angle onto a surface and measuring the amount of reflected light at an equal but opposite angle.





## Stiffness Tester

The Taber® type Stiffness Tester is used to measure the stiffness of paper boards and duplex boards.

A physical characteristic of paperboard which differentiates it from paper is its greater flexural rigidity, commonly called stiffness.

In other words, Stiffness is the ability to bend or resist bending.

It is the resistance the sample offers on being bent at 7.5° and 15° Degrees.

High stiffness boards lead to rigid and better formed cartons.

Confirms to : TAPPI T-489



# Creasing and Stiffness Tester

This 2-in-1 equipment can measure :

1) Paperboard Stiffness Test.

It is the amount of force required to bend a board sample by  $7.5^\circ$  or  $15^\circ$

2) Creasing Stiffness Test.

It is the amount of force required to bend a pre-creased sample by  $90^\circ$

3) Crease Recovery.

It is the residual (spring back) force after 15 seconds of bending.

4) Crease Recovery Ratio.

It is the ratio between Creasing Stiffness value and Crease Recovery value.



Confirms to :  
BS 6965 / TAPPI T-489

## Mini Carton Compression Tester

This equipment is suitable to measure the rigidity / stiffness / load bearing capacity of Mono / Duplex Cartons or E-Flute Cartons.

Confirms to :  
TAPPI T-804  
ISO 12048  
ASTM D-642  
and Proprietary Test Methods.



# Scuff Tester

Also known as the PATRA Rub Tester, this is an equipment to test printed substrates such as paper boards for resistance to scuffing / rubbing / smudging when 2 circular samples are rubbed against each other in a rotary motion, under a defined pressure, at a defined speed for a defined number of rubs.

High Rub Resistance = Good Quality Print

Suitable for : Printed Duplex Boards or any thick material in sheet form.

Confirms to :  
British Standards BS-3110



## Ink Rub Tester

Also known as the Sutherland Rub Tester, this is an equipment to test printed substrates such as plastic films / foils / labels / papers or paper boards for resistance to scuffing / rubbing / smudging when 2 samples are rubbed against each other in a linear motion, under a defined pressure, at a defined speed for a defined number of rubs.

High Rub Resistance = Good Quality Print

Suitable for : Printed Duplex Boards, Labels, Plastic Films, Laminates, Paper, Foil or any thick or thin material in sheet form.

Confirms to :

TAPPI T-830 / ASTM D-5264-92



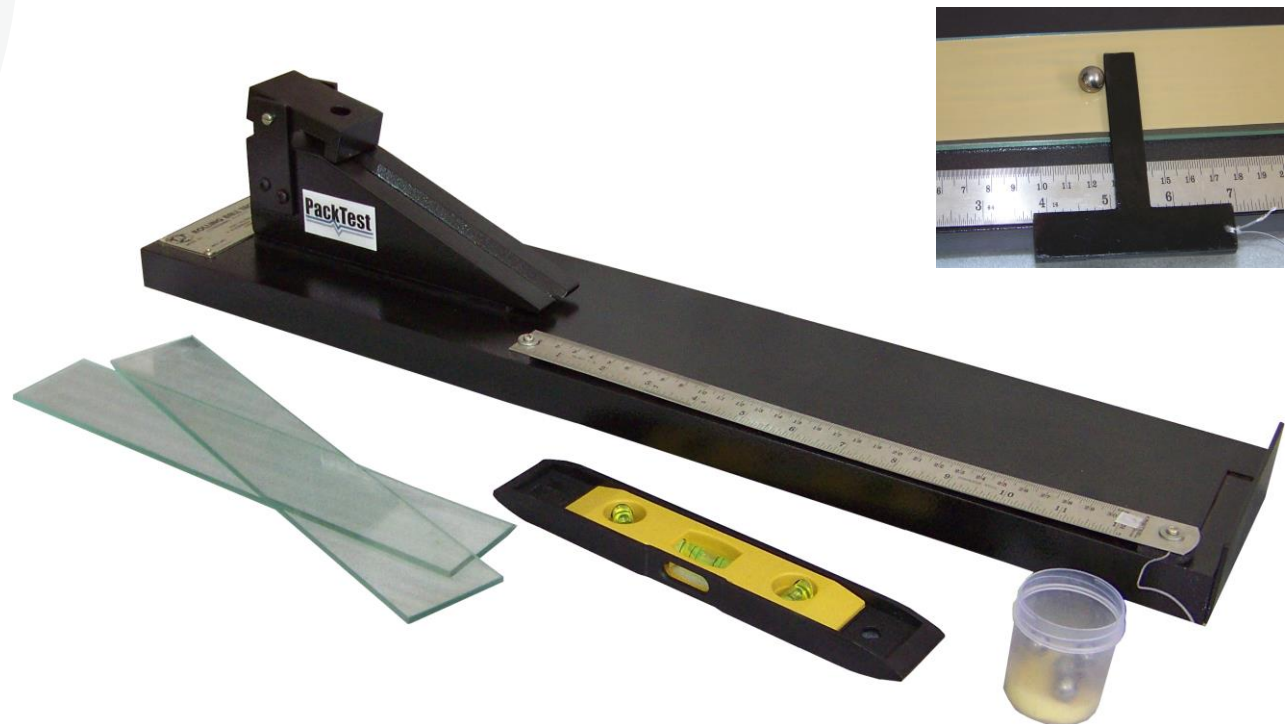


# Rolling Ball Tack Tester

This is an equipment to measure the tackiness of adhesive coated substrates such as Tapes and Labels, using the rolling ball method.

Tackiness is the ability of an adhesive to adhere quickly to another surface.

Confirms to :  
PSTC 6  
ASTM D 3121



## Tape Shear Holding Tester

This is an equipment to test the Static Shear or Shear Adhesion Test of Pressure Sensitive Adhesive (PSA) Tapes.

Shear Strength is a measure of the ability of PSA tape to remain adhered under a constant load applied parallel to the surface of the tape and substrate.

BOPP Packing Tapes are used to close the flaps of Corrugated Cartons. The flaps have a tendency to spring back and open up. The tape tries to hold back the flaps in position. If the shear strength of the tape is poor, it will not be able to hold on to the flaps and the end result is open cartons.

***High Shear Strength = Properly closed cartons.***

Confirms to : PSTC 107 / ASTM D 3654



# Adhesive Peel Tester

This is a Tensile Tester specifically designed to perform the following :

- 180° Adhesive Peel Test.
- 90° Adhesive Peel Test.
- Loop Tack Test.
- Roll Peel Test.
- Release Force Test of Silicon Liners

Suitable for : PSA Tapes and Labels

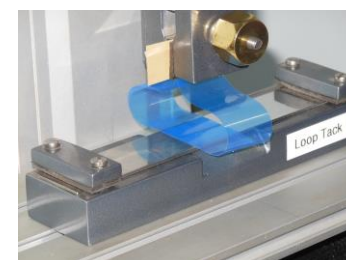
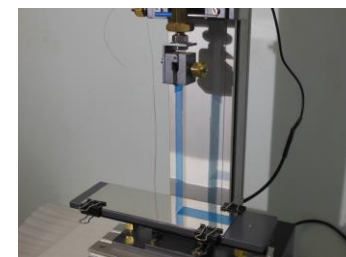
Confirms to :

PSTC 101

PSTC 16

PSTC 8

ASTM D 3330



# Tensile Strength Tester

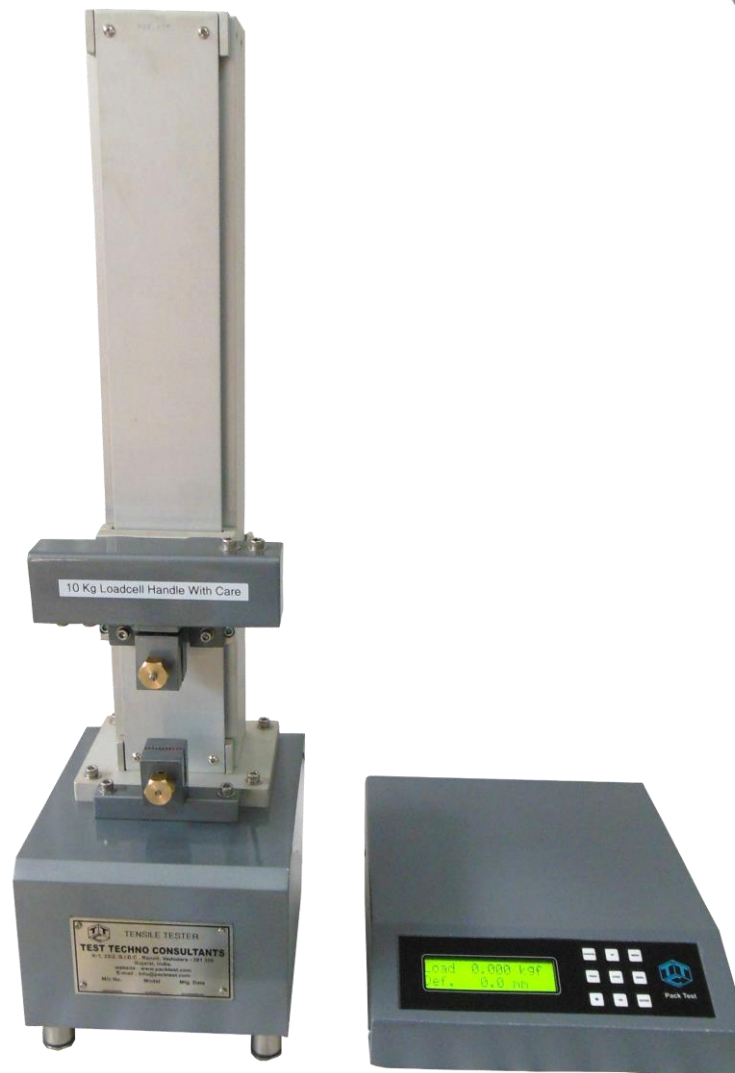
This is an equipment which can perform :

- Tensile Strength / Breaking Load Test
- Elongation Test
- Laminate Peel Test
- Seal Strength Test
- Coefficient of Friction (COF) Test

Confirms to :

ASTM D882 / F904 / F88 / D1894

TAPPI T549



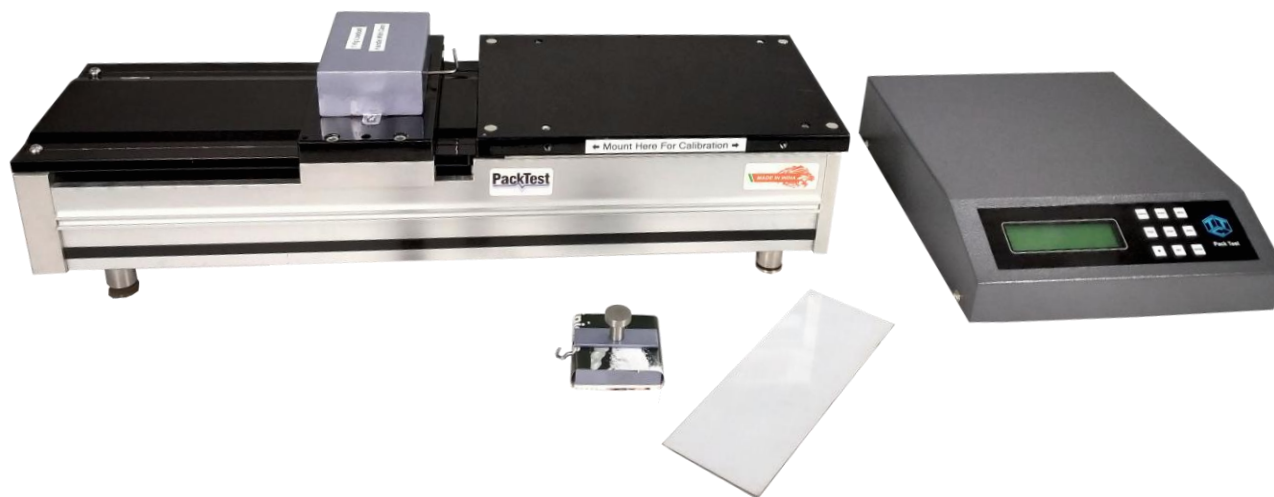
## Coefficient of Friction (COF) Tester.

This is an equipment to test the Static and Kinetic Friction values of substrates such as Paper / Plastic Films / Laminates, etc.

When paper / plastic films run on production lines, they come in contact with various parts like Metal Rollers, Hoppers, Chutes, Conveyors, etc. And every time there is a contact, there is also friction. Friction is required. It is a good thing when at an optimum value.

Too Low or Too High friction is bad for production, as it can lead to undesirable results such as Slip / Stretch / Scuffing / Breakage / Mis-Registration / Jamming, etc

Confirms to :  
TAPPI T549  
ASTM D-1894



## Drop Tester

This is an equipment to drop packages from different heights and orientations, to evaluate them for transport worthiness and resistance to mis-handling during various stages of transportation and warehousing.

Can be used to test Bottles / Jars / Pouches / Corrugated Cartons, etc.

Confirms to :  
TAPPI T802  
ASTM D 5276





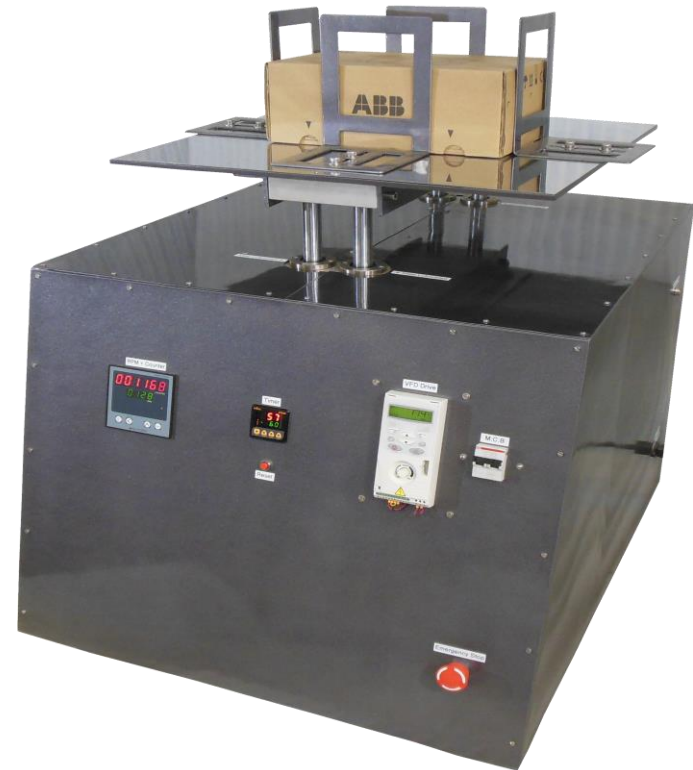
## Vibration Tester

This is an equipment to evaluate a packaged product for transport worthiness.

A real world journey of thousands of Kms can be completed in a matter of a few hours, within the comforts of your laboratory.

The product can then be removed and evaluated for damages such as breakages / leakages / etc.

Confirms to :  
ASTM D 999



# Data Logger

A transport data logger Measures and Records the following :

- 1) Shock (g) received in all 3 axis.
- 2) Temperature
- 3) Humidity (Optional)
- 4) Atmospheric Pressure. (Optional)

The data logger can be hidden in one of your packages and sent on a real journey to find out how good (or Bad) your transportation and warehousing conditions are in the real world.



## Headspace Gas (Oxygen) Analyser

This equipment is used to measure the residual O<sub>2</sub> concentration in Nitrogen Flushed (MAP) packages.

Eg. Snacks, Nuts, etc

A septum seal sticker is applied to the package (pouch / blister / tetra-pack / bottle, etc) and a needle is pushed through it. The gas inside is allowed to come out through the needle and is analysed by an Oxygen sensor.

The instrument shows the O<sub>2</sub>% directly.

Ambient air has 20.9% oxygen. MAP targets to flush out this air and bring down the O<sub>2</sub> level to under 1.5%. Presence of O<sub>2</sub> in excess of 2% can have a degrading effect in product stability and shelf life.

High O<sub>2</sub>% exposure to high fat / oils foods causes rancidity and reduces shelf life.



## Leakage Tester (Vacuum Method)

This equipment is used to check a non-porous, closed package for leakage / pinholes / tunnel defects.

- Solid Filled / Air Filled packages are tested while submerged in water.
- Liquid Product Filled packages are tested in dry condition (without water).

Package integrity is often an important characteristic of package performance. Breaches of package integrity may permit substances to enter or contents to escape packages.

The Vacuum method of leakage testing is not entirely suitable for packages with very low headspace Volumes or for products with high viscosity.

Confirms to :  
ASTM D4991 / D3078



## Pouch Dip Leak Tester

This equipment is suitable to test flexible packaging for Leakage, by pressing it under water and observe for air bubbles / leakage.

This method is more reliable in detecting micro-leakages, as compared to the Vacuum Leak Test method.

This test is suitable for packages with high headspace volumes.  
(E.g. Snack Food packs)

Confirms to proprietary test methods.





## Leak Burst Tester

A highly versatile 2-in-1 equipment suitable for :

- 1) Leakage Test
- 2) Burst Test

Can be used with various fixture options to test sealed packages such as :

- Pouches
- Bottles
- Blister Packs
- Cups
- Lami-Tubes / Co-Ex Tubes
- Medical Device Packaging

Confirms to :

ASTM F1140 / F2054 / F2095 / F2096  
ISO 11607





# Pouch Compression Tester

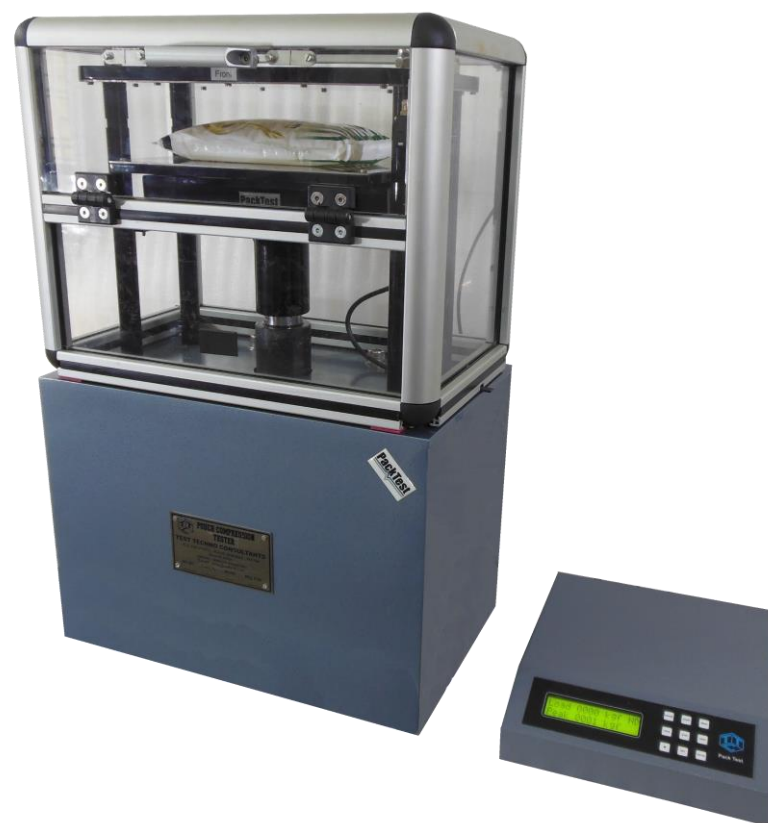
This is an equipment suitable to evaluate the overall seal integrity of liquid filled pouches when subjected to external compressive force.

The pouch is pressed between 2 platens with increasing force till the pouch ruptures.

The max force required to rupture the pouch is recorded as the Pouch Compression Force.

The equipment can also be programmed to press the pouch only upto a preset load and hold the force on it for a preset period of time.

Confirms to  CFIA Test Methods.



## Torque Tester

This equipment is suitable to measure :

- Opening & Closing Torque of regular Screwed Closures.
- Opening & Closing Torque of Push-n-Twist (Child Resistant) Closures.
- Hinge-Twist test on Flip Top Caps.

Suitable for :



# Bottle / Jar Compression Tester

This equipment is suitable to evaluate the Load Bearing Capability of :

- PET Bottles
- Confectionary Jars.
- HDPE bottles and jars
- Small Cartons (Duplex board / E-Flute)

Suitable for :



# Bottle Wall Thickness Gauge

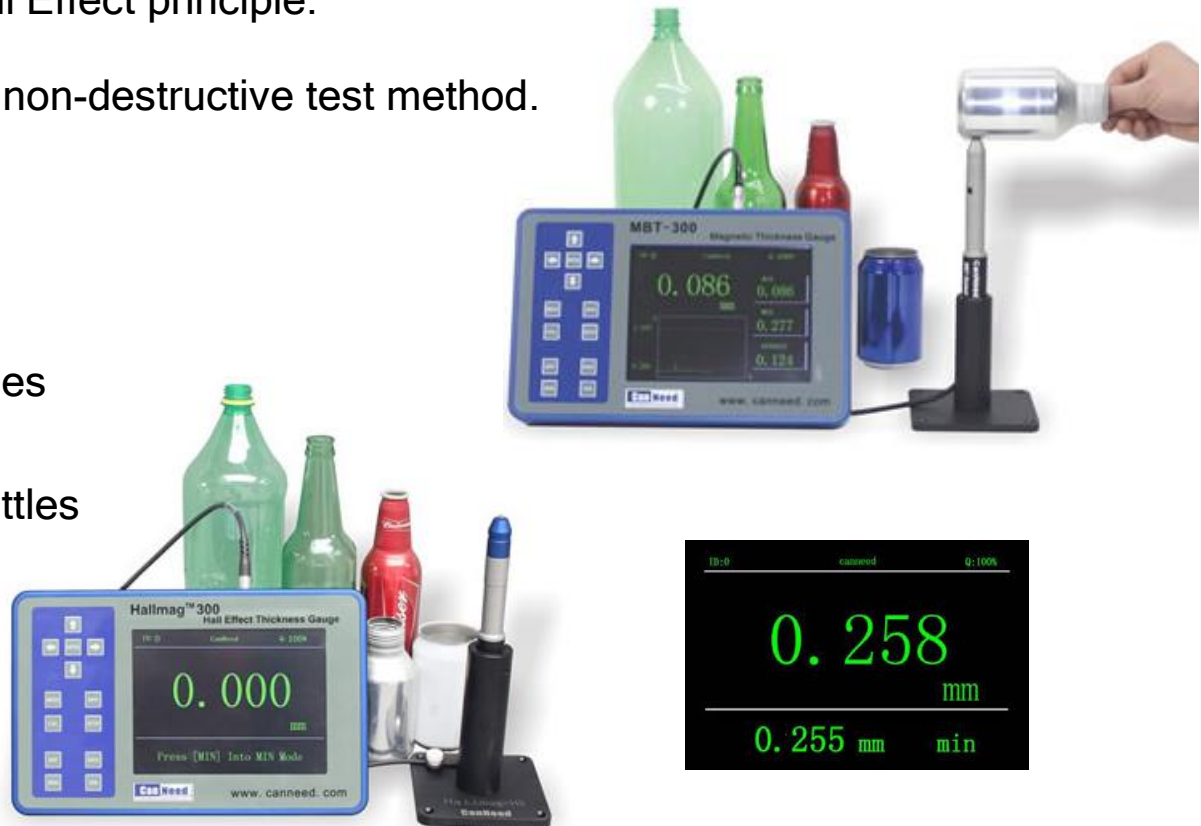
The Bottle Wall Thickness Gauge is an equipment to measure the thickness of Bottles made of Plastic / Glass / Aluminum or any non-ferrous substrate, without cutting.

Works on the Magnetic Hall Effect principle.

A quick, easy, reliable and non-destructive test method.

Suitable for :

- HDPE Bottles
- LDPE Bottles
- PET Preforms and Bottles
- Glass Bottles
- Aluminum Cans and Bottles
- Lami & CoEx Tubes



## Color Meter

This is an equipment to measure the RGB / HSL colorspace values of non-luminous surfaces such as plastic Bottles / Caps.

Color Meter is based on a more accurate and modern micro system which operates according to the spectral method. A defined source of light illuminates the sample and the light is reflected by the surface and is measured by the spectral mode and the result is shown on the display



# Universal Testing Machine

A Tabletop Equipment used to perform various Tensile and Compression Tests such as :

- Compression Strength or Top Load Test Duplex board Cartons or Bottles
- Capping and De-Capping Force Test of Snap-On Caps
- Flip Opening and Closing Force of Flip-Top Caps
- Laminate Peel Strength
- Seal Strength Test
- Tensile Strength / Breaking Load Test
- Elongation Test
- Coefficient of Friction (COF) Test.
- 180° and 90° Peel Strength of Adhesive Tapes / Labels
- Loop Tack Test of Adhesive Tapes / Labels
- Weld Strength or Head Bond Test of Lami-Tubes
- Stiffness Test of Lami / CoEx Tubes.
- RCT of Paper and ECT / FCT of Corrugated Board

Confirms to various TAPPI / ASTM / ISO / PSTC standards.



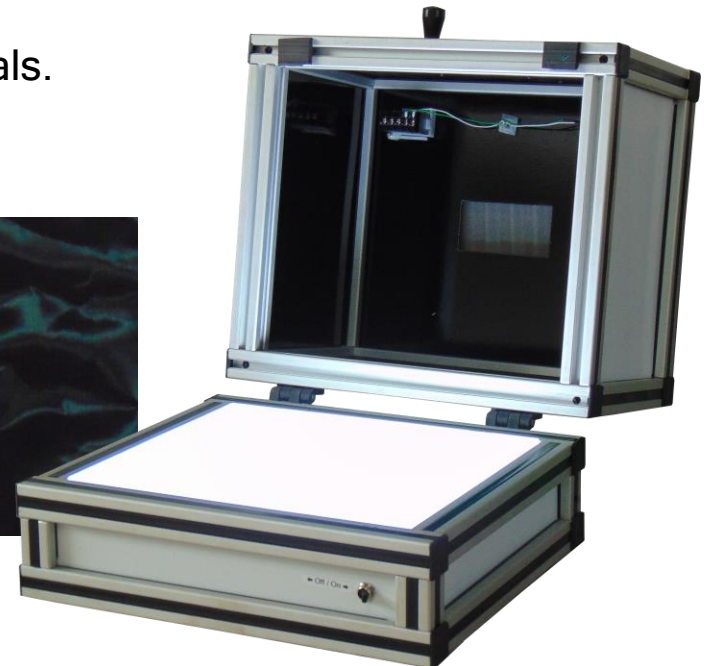


## Pin Hole Tester

Also known as the Light Box, this is an equipment which can help detect pin holes in aluminum foils used in pharmaceutical packaging.

Pinholes are micro leaks in the foil surface which can reduce the shelf life or stability of the product they are used to protect.

This equipment can be used only on opaque materials.



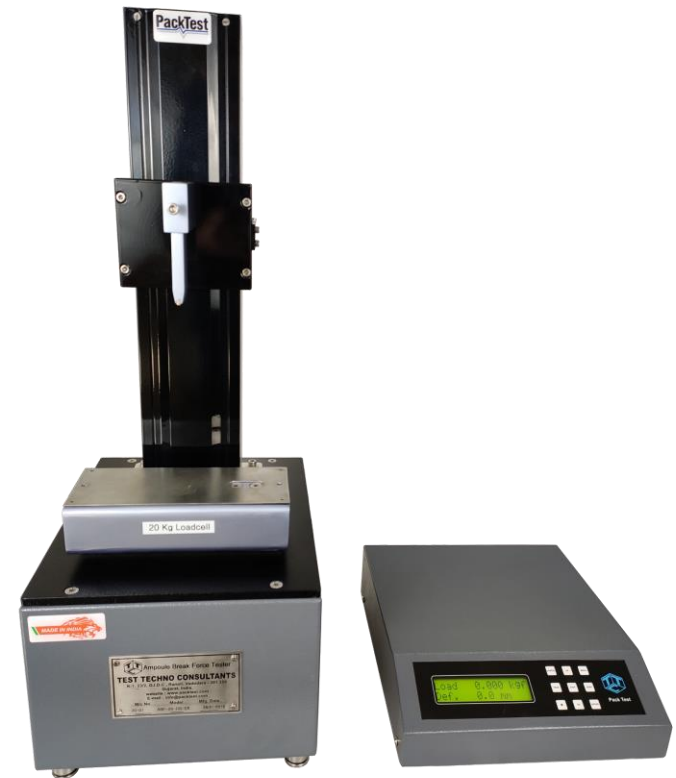
Confirm to :  
USP 381



# Syringe Glide Force Tester

This equipment is used to measure the break out force and gliding force of pre-filled syringes.

Confirm to :  
USP 382

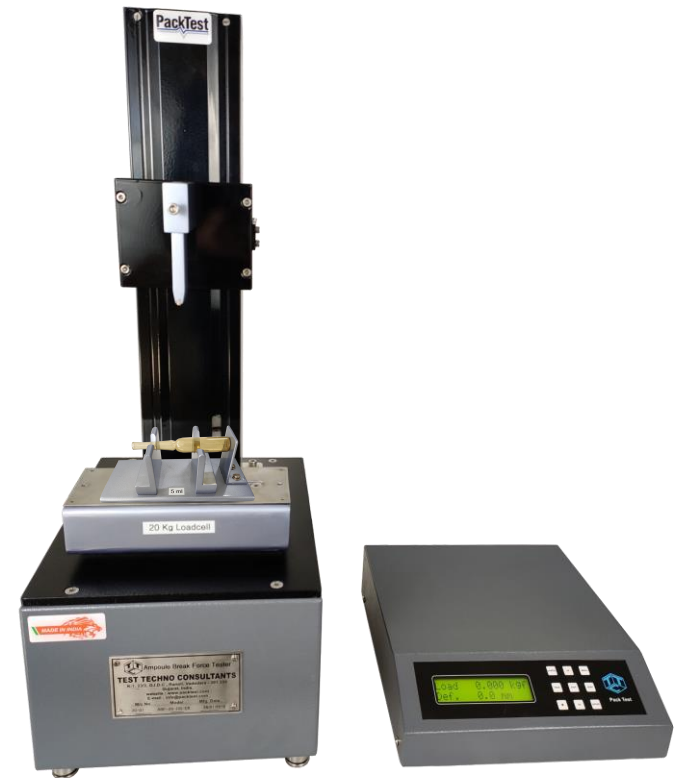
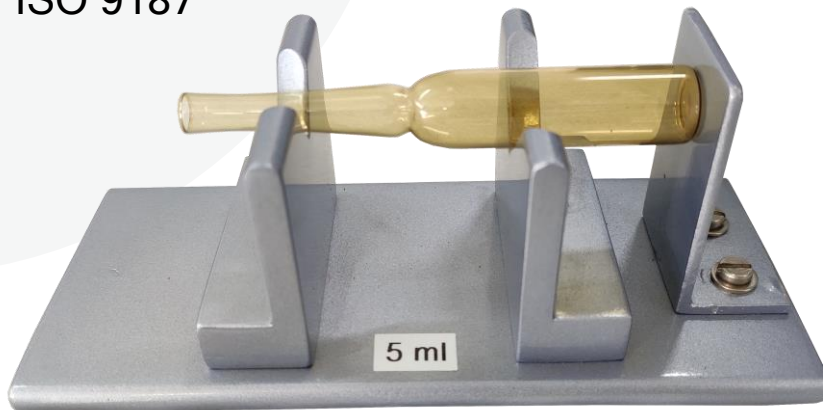


# Ampoule Break Force Tester

This equipment is used to measure the amount of force required to break Glass Ampoules.

Can be used to test :  
OPC, CBR and SR type ampoules.

Confirms to :  
ISO 9187



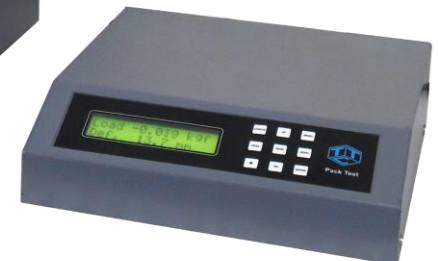
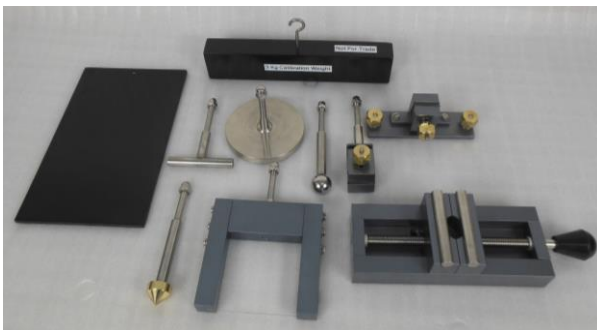
## Texture Analyser

Suitable for Texture Test on a variety of products using special Jigs & Fixtures.

Texture Tests comprise of Softness Test, Hardness Test, Bite Test, Slice Test, Poke Test, Bloom Test, Piercing Test, Snap Test, etc.

Can be used for testing of : Bakery, Dairy, Fruits, Confectionary, Chocolates, etc

Confirms to Industry Accepted Practice.





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