RHOPINT INSTRUMENTS

RHOPINT AMERICAS

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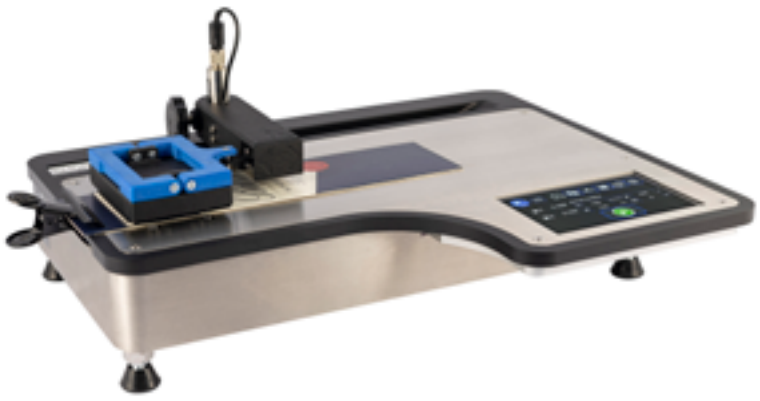


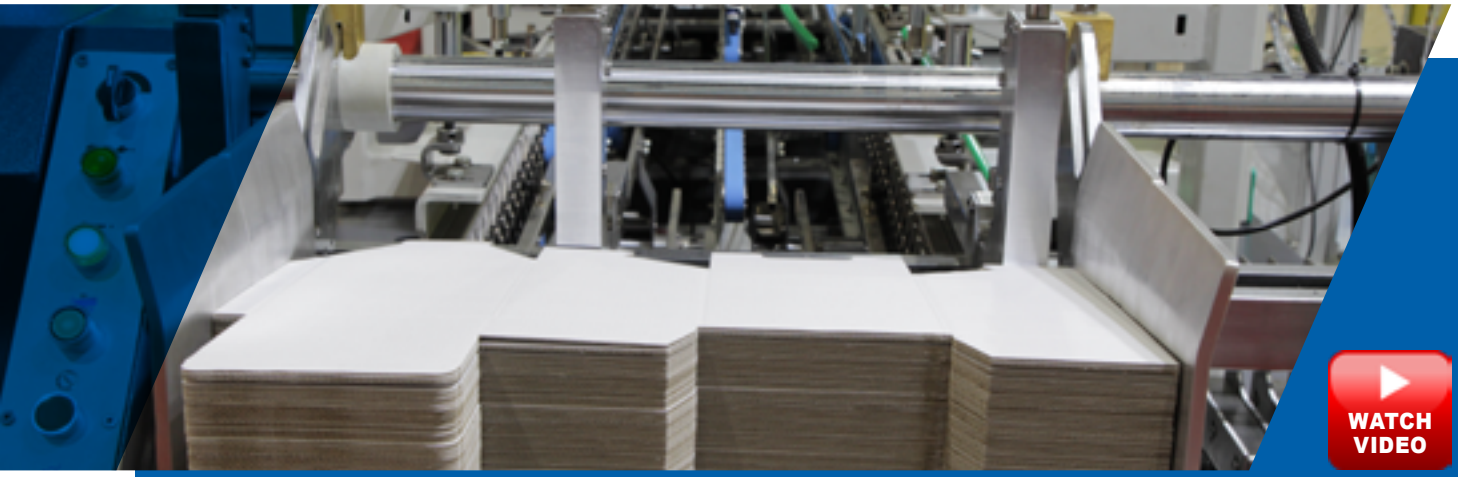
RHOPINT UFT
UNIVERSAL FRICTION TESTER

Universal Friction Tester

- Static and dynamic (COF)
- Fast, repeatable measurements
- Includes peel, tear and seal integrity tests

Manufactured by Rhopoint Instruments in the United Kingdom

Who measures slip/friction?



Friction testing is used in the packaging industry to measure the slip resistance of a product, with the aim of predicting feed and running speed on an automatic glueing, erecting, filling or packaging line.

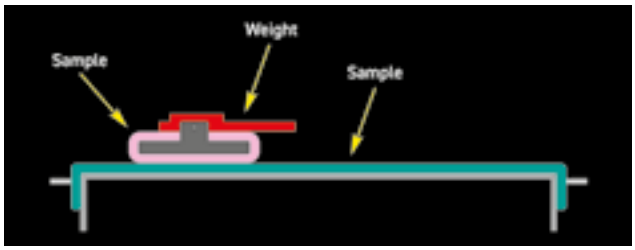
Friction parameters help the manufacturer understand how the finish of the blown film or printed carton can influence the feeding and running speeds. Surface slip is a key factor when printing, erecting or filling packaging materials on an automatic line.

What is slip/friction?

A product's slip resistance is characterised by it's coefficients of friction (COF):

Static COF = Fs/N
Dynamic COF = Fd/N

Where *Fs* is the maximum static frictional force and the *Fd* is the average dynamic frictional force.



N is the Normal force, i.e. the force of gravity acting on the sample and test sled.

In practical terms, the static slip relates to the force required to get two resting surfaces moving, dynamic slip is the smaller force that is required to keep the surfaces moving once this initial "inertia" is overcome. These values are expressed as ratios and do not have units, they are usually quoted as a decimal value between 0 and 1.

How can Coefficient of Friction Values Relate to Packaging Speeds?

COF can often be related to the feeding and running attributes of products, for instance UV varnished food cartons have a slip coefficient that is related to the formulation of the UV coating its cure and film weight.

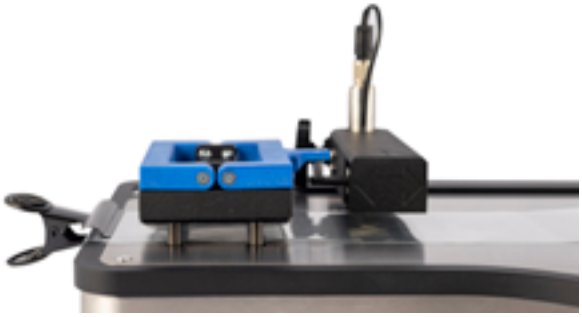
Cartons that have a very low static coefficient of friction may have handling difficulties as they will tend to slide apart and are difficult to place into feeding hoppers.

In contrast, products which have a high COF will tend to stick together and can be prone to misfeeding due to multiple cartons entering the packaging line at once.

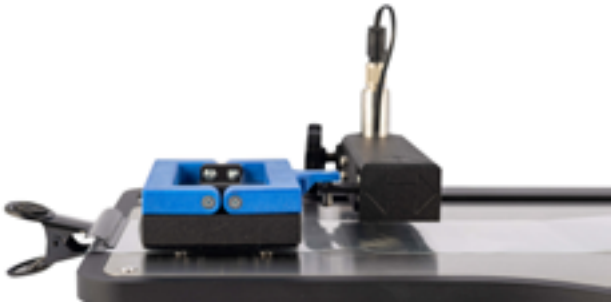
Universal Friction Tester Features

The Universal friction tester allows the user to test static and dynamic coefficient of friction with minimal training.

Ultra-repeatable static COF; automatic sled placement with variable dwell times.



Initial sled placement



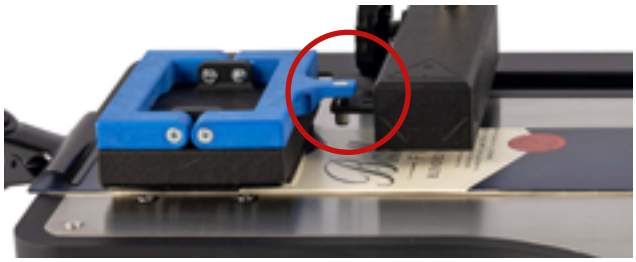
Placement pins retract into the instrument; the test is ready to begin

Advantages:

The sled is placed in exactly the same position each time the test is run.

The user-defined dwell time controls the blocking effect of tackier films.

Controlling the above ensures repeatable static COF results, independent of the operator.



A fixed link between the sled and the load cell means that there are no errors in friction from pulley wheels or cords associated with other measuring instruments.

Touch screen interface

The UFT uses an intuitive touch screen user interface making it accessible and easy to use.

Quality Assurance (QA)

Pre-loaded ISO/ASTM/friction test methods with the option to create a custom test.

The UFT sled design makes the loading of film samples ultra-easy

Universal Friction Tester - Package

Universal Friction Tester - Instrument

This standalone instrument is designed for simple QA testing of static and dynamic COF. The instrument is preloaded with ISO/ASTM/friction test methods with the option to create a custom test. Included in the package are the attachments for performing peel, tear and seal strength tests.

Peel | Tear | Seal

UFT Lab Software

Optional full analysis software allows for detailed statistical and graphical analysis of results, full PDF reporting and the creation of custom test routines.

Additional test types

Peel Testing

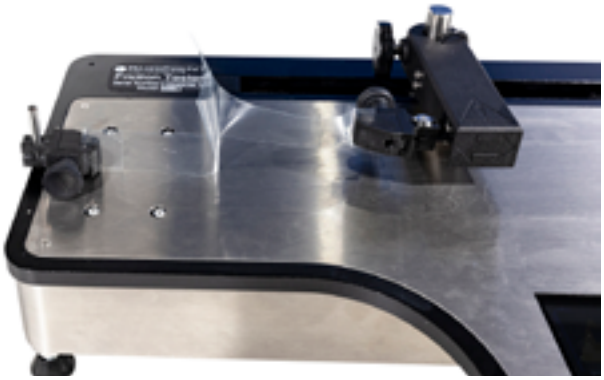
Optional attachments transform the UFT into a precision peel test instrument, accurately measuring the force required to separate glued or laminated films, tapes, labels etc.

- ✓ All tests are to FINAT international standards
- ✓ T-Peel, 180° peel or 90° peel tests

Tear Testing – Substrate Strength

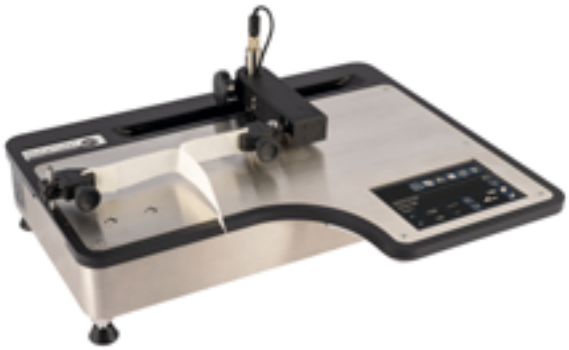
Optional tear strength attachment allows the user to measure and control tear strength to international standards.

- ✓ Trouser tear method



Seal integrity test

Optional test attachments for testing seal integrity of films or laminates.

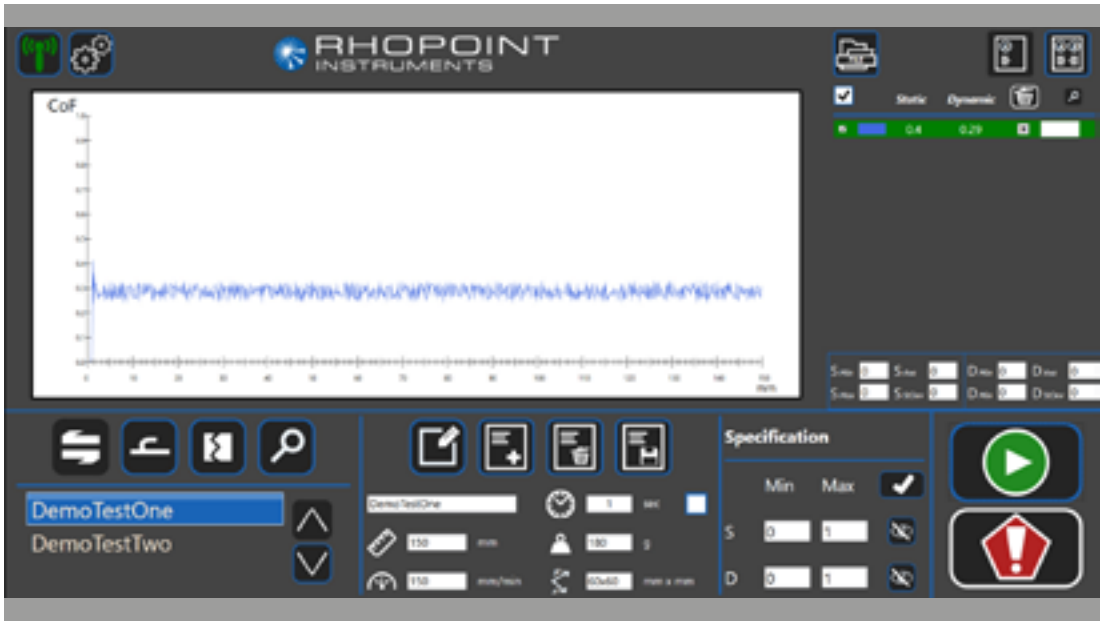


Software (optional)

Easy to use software allows the user to change the configuration of the UFT instrument and produces detailed force graphs that can be saved and compared.

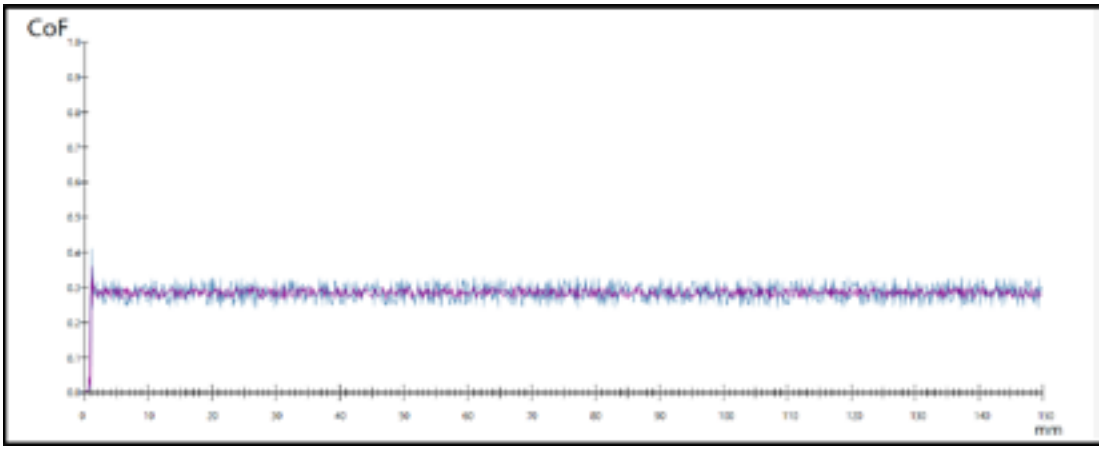
Features

The Universal Friction Tester software features graphical reporting of results and allows unlimited custom test routines to be created in minutes. Tolerances for both static and dynamic COF can be set for each test routine allowing for easy identification of non-conformances.



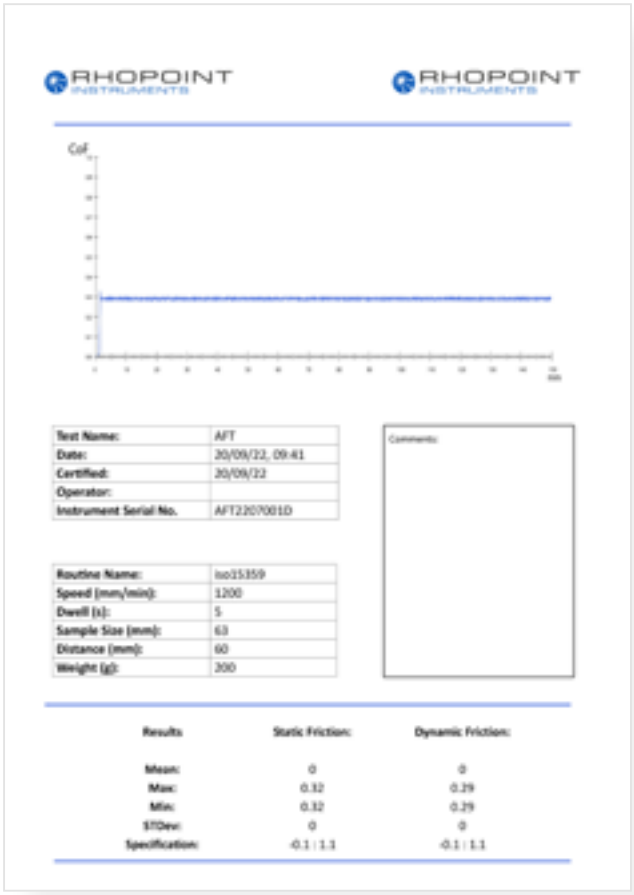
Analysis of Results

Multiple tests can be run per file and a graphical trace given for each. A master or reference file for the material can be overlaid to give a quick visual comparison of batch to batch consistency and quality.



Test Results in PDF Format

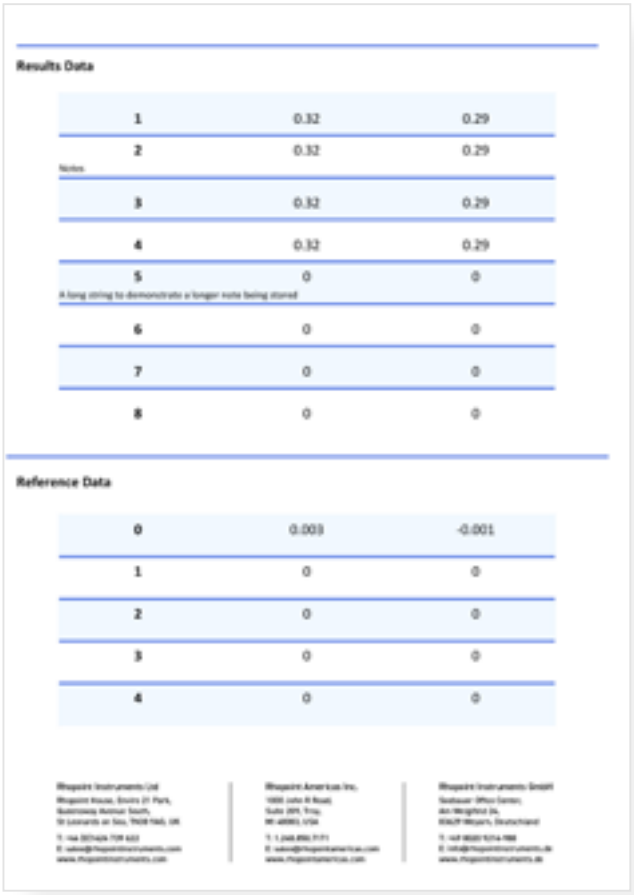
Full graphical and statistical analysis of test results can be printed to PDF for easy reporting.



Test Name:	AFT
Date:	20/09/22, 09:41
Certified:	20/09/22
Operator:	
Instrument Serial No.	AFT22070010

Routine Name:	iso15359
Speed (mm/min):	1200
Dwell (s):	5
Sample Size (mm):	63
Distance (mm):	60
Weight (g):	200

Results	Static Friction:	Dynamic Friction:
Mean:	0	0
Max:	0.32	0.29
Min:	0.32	0.29
STDev:	0	0
Specification:	-0.1 : 1.1	-0.1 : 1.1



Results Data

1	0.32	0.29
2	0.32	0.29
3	0.32	0.29
4	0.32	0.29
5	0	0
6	0	0
7	0	0
8	0	0

Reference Data

0	0.003	-0.001
1	0	0
2	0	0
3	0	0
4	0	0

The logo at the top of the report can be customised to reflect customer own branding

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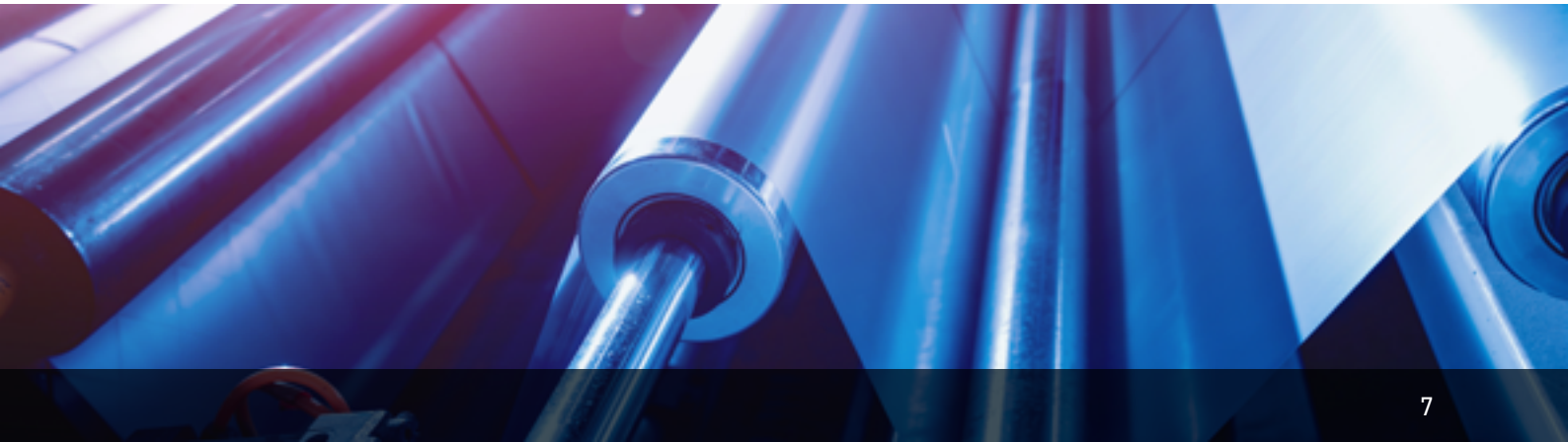
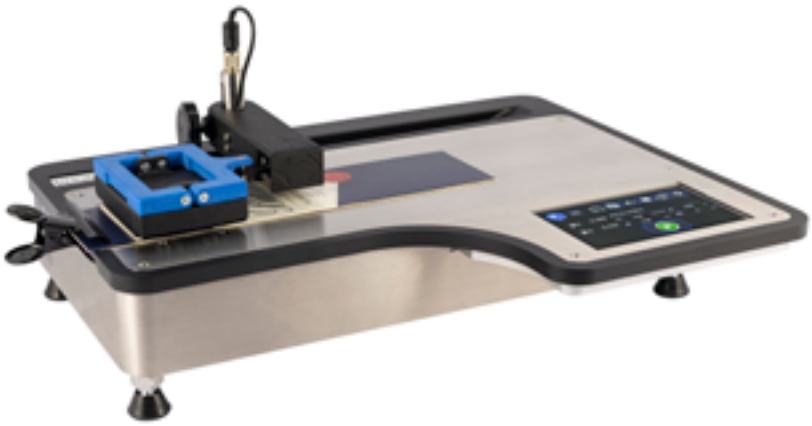
NOVATRON SCIENTIFIC



Applications

The Universal Friction Tester (UFT) produces detailed fingerprints of new substrates, coatings and production samples. These characteristics can be saved and compared at any time allowing the manufacturer to specify the optimum surface finish for any packaging process.



Printed packaging
Determination of the static and dynamic Coefficients of Friction

Plastic film
Standard test method for static and dynamic COF
ASTM D1894, ISO 8295

Leather
Friction measurement of leather

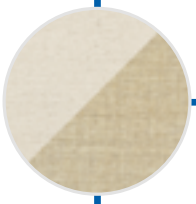
Labels
Friction measurement of labels

Foils
Friction measurement of foils

Paper
Determination of the static and dynamic Coefficients of Friction
ISO 15359

Printed paper
Coefficients of static and dynamic friction of uncoated writing and printing paper by use of the horizontal plane method
TAPPI T549

Textiles
Determination of tear resistance
ISO 6383



Cartons
Friction measurement of cartons

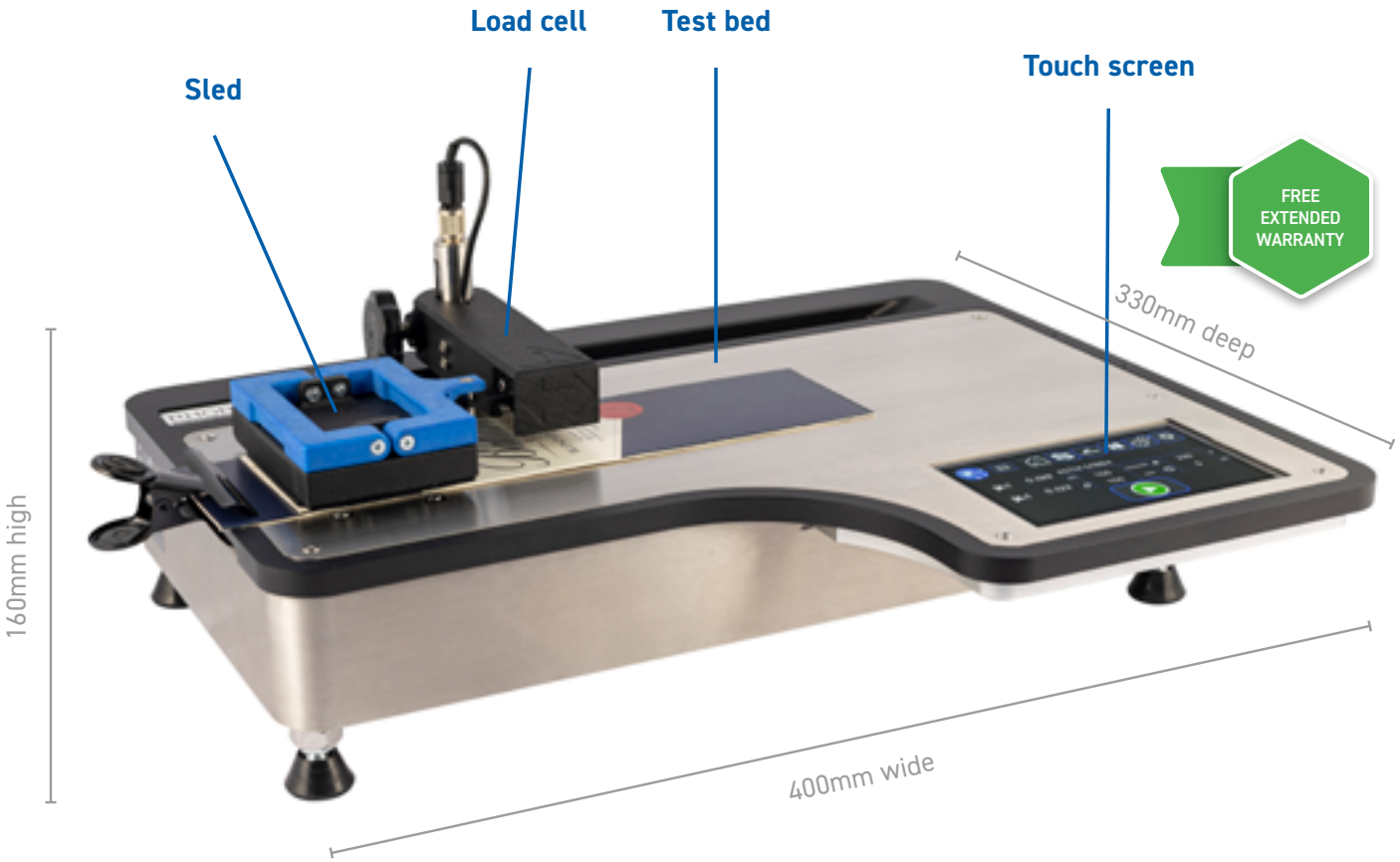

Production


Print Industry


Packaging Industry

Features

The Universal Friction Tester (UFT) allows the user to measure and store the full force curve which graphically illustrates the frictional characteristics in addition to providing the static and dynamic COF values.



Specifications

Standard	Application	Details
ISO 8295	Plastics - film and sheeting	Determination of the coefficients of friction
ASTM D1894	Plastics - film and sheeting	Standard test method for static and dynamic coefficients of friction
TAPPI 549	Printing paper	Coefficients of static and dynamic friction of uncoated writing and printing paper by use of the horizontal plane method
ASTM D2534	Wax coating	Standard test method for coefficient of dynamic friction for wax coatings
ASTM D3330	Tape	Standard test method for peel adhesion of pressure sensitive tape
FTM1FINAT	Peel test	Test method no. 1, Peel adhesion (180°) at 300mm per minute
FTM2FINAT	Peel test	Test method no. 2, Peel adhesion (90°) at 300mm per minute
FTM3FINAT	Adhesion	Test method no. 3, Low speed release force
FTM21FINAT	Adhesion	Test method no. 21, Ink Adhesion - basic
ISO 6383	Textile	Determination of tear resistance -- Part 1: Trouser tear method
ASTM F88	Seal	Standard test method for seal strength of flexible barrier materials

Instrument Specifications	Details
Resolution	0.1g / 0.001 COF
Accuracy	0.5g
Sleds	200g Other sled weights by request. Custom sled base materials available
Speed	User definable, 100 - 1200mm/min
Dwell time	User definable, 0-90 seconds
Test distance	User definable, up to 200mm
Power	110/240v 50/60Hz
Load cell capacity	30N

Instrument Dimensions	Details
Size	(H) 160mm x (W) 400mm x (D) 330mm
Net weight	6.5kg
Gross weight	10kg

Order Codes:	Details
HAN-A6060FRICTION	Universal Friction Tester Includes peel, tear and seal test attachments
HAN-B6060-001	UFT Lab software package, includes USB-Network adapter and network cable

Accessories

Included Accessories:

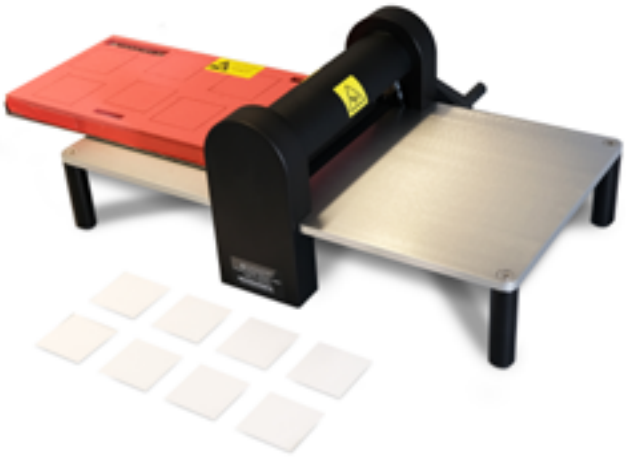
- Sample securing magnets
- 2 x Sample clamps
- Traceable calibration certificate
- 1 x 100g calibration check weight
- 1 x Calibration attachment with fixing attachments

Optional Accessories

Order Codes:	Description	Size
HAN-B6060-010	UFT friction template - board	63.5 x 63.5mm
HAN-B6060-011	UFT friction template - film	63.5 x 148mm
HAN-B6060-012	UFT peel and seal strength template	25 x 200mm
HAN-B6060-013	UFT tear template	50 x 175mm
HAN-B6060-014	UFT seal strength template 2	15 x 200mm
HAN-B6060-015	UFT seal strength template 3	25.4 x 200mm
RL-B80-001	Universal roller sample cutter (requires a die, select from below options)	
RL-B-CUTTER/FRICTION	Cutter die - friction - for use with carton & board	
RL-B-CUTTER/FRICTION-PLAST	Cutter die - friction - for use with plastics	

Free extended 2 year warranty: Requires registration at www.rhopointinstruments.com within 28 days of purchase. Without registration, 1 year standard warranty applies.

Calibration and service: Fast and economic service via our global network of accredited calibration and service centres. Please visit www.rhopointinstruments.com for detailed information.



Optional Accessory

Simple sample preparation with the Hanatek Universal Sample Cutter (USC)

The Hanatek USC has been designed for the simple cutting of samples for the packaging industry. Additional Dies can be configured to cut samples for most test types including: friction, tensile, grammage, O_2 permeability, CO_2 permeability, WVTR, rub resistance, carton crease, carton stiffness and many more.

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TRY BEFORE YOU BUY

We offer two options for you to try out the Universal Friction Tester before buying

1. **Online demonstration:** Online presentation of the Universal Friction Tester with your samples measured LIVE on Microsoft Teams. Includes a consultation with an application specialist.

2. **Factory sample testing:** Send in samples of your material for testing and receive a comprehensive test report.

Arrange a demo

Ready to receive a quote? **Click here**

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